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Part D

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Environmental Law Institute, <https://www.eli.org/>

Treatises and Practice Aids

Law of Environmental Protection | Part D. Media-Specific Programs

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Chapter 11

Introduction to Media-Specific Programs*

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§ 11:1 Summary

In the next three chapters, the authors summarize the Clean Air Act,¹ the Clean Water Act,² the Marine Protection, Research and Sanctuaries Act,³ the Safe Drinking Water Act,⁴ the Resource Conservation and Recovery Act,⁵ the Comprehensive Environmental Response, Compensation and Liability Act (“Superfund”),⁶ the Emergency Planning and Community Right-to-Know Act,⁷ and the Oil Pollution Act,⁸ to give each its common name.

*By **Sheldon M. Novick**, updates by **Scott Schang** and **Celia Campbell-Mohn**

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¹42 U.S.C.A. §§ 7401 to 7671q; *see* Ch 13.

²Technically, the statute is the Federal Water Pollution Control Act, as amended; 33 U.S.C.A. §§ 1251 to 1376. It is now commonly called the Clean Water Act; *see* § 11:2 and Ch 14.

³16 U.S.C.A. §§ 1401 to 1445; this is the ocean dumping statute. *See* §§ 11:2, 13:131.

⁴42 U.S.C.A. §§ 300f to 300j-11; *see* §§ 11:2, 14:70, 14:148, and Ch. 16.

⁵42 U.S.C.A. §§ 6901 to 6987; *see* §§ 14:13, 14:22.

⁶42 U.S.C.A. §§ 9601 to 9657; *see* §§ 14:86, 14:128.

⁷33 U.S.C.A. §§ 2701 to 2762.

The history of these statutes, as well as the realities of practice, make it easier to group and rearrange them, as we have in this treatise, than to walk slowly through each one in turn. Congress occasionally amends one statute to remedy deficiencies in another;⁹ divisions between the statutes sometimes represent nothing more than lines drawn between committee jurisdictions;¹⁰ the courts often cite decisions under one statute as authority for decisions under another;¹¹ and EPA, which administers these statutes, groups them by function and medium.¹² It is easier and more natural for local governments and the regulated community who carry out the programs of environmental protection to look at their work in practical terms rather than in artificial statutory categories.

In preceding chapters, we reviewed the principles on which the statutes rest—their goals, the principals of control, the outline of administrative procedure, and the still more general ethical and economic principles which undergird them. We next looked at functions EPA performs and which are common to most of its statutes—oversight and assistance to state governments; environmental assessment; and enforcement.

In the next three chapters, we will describe, in great detail, the pollution control and waste disposal statutes. They all deal with management and control of residuals—wastes and pollutants—which have no value, and which may do harm if improperly managed. While they have this common subject matter, and the common goals and methods described in previous chapters, each statute has a large residuum of detailed provisions that resist generalization. Some of these provisions are the fossil record of the history of the statutes, which after all are not neatly drawn plans, but the marks left by struggle in Congress, EPA, and the courts.

Other provisions record the different physical qualities of environmental media. Air quality standards are probably more important than similar provisions in other laws, for instance, because people cannot avoid breathing the air. Emissions into groundwater sometimes can be cleaned up, but air emissions never.

The history of the six environmental protection laws, and the practical requirements of their administration, both suggest that they can best be understood as making up three broad programs for protection of air, surface waters, and soil and groundwater.

§ 11:2 History

The history of the statutes, and of their common provisions, is discussed in each of the chapters of this treatise. Here we will set out only a general outline that will help to explain the way in which the statutes have been grouped for discussion in

⁸42 U.S.C.A. §§ 11001 to 11050.

⁹For instance, as noted in the following section, the Safe Drinking Water Act's injection-well provisions, 42 U.S.C.A. §§ 300h to 300h-4, were adopted to remedy a gap in the Clean Water Act's jurisdiction; RCRA now contains provisions which are part of the Superfund program, *see* RCRA §§ 3012, 3016, 42 U.S.C.A. §§ 6933, 6936, and the Safe Drinking Water Act's well-injection program, *see* RCRA §§ 3005(f), 3005(j), 42 U.S.C.A. §§ 6925(f)-6935(j), while CERCLA amended RCRA, *see* CERCLA § 307, Pub. L. No. 96-510, tit. III, § 307, 94 Stat. 2767 (1980).

¹⁰The ocean dumping permit rules are not in the Clean Water Act, for instance, because the Senate committee with jurisdiction over surface water did not have jurisdiction over the oceans. *See* § 11:2.

¹¹*See* *Natural Resources Defense Council v. Train*, 510 F.2d 692, 701-02, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20046, 20050-51 (D.C. Cir. 1975). Ten appellate cases which repeat the principle that the Clean Air Act and Clean Water Act may be construed together are collected in W. Rodgers, 2 Env'tl. L. 603 nn. 9-14 (1986).

¹²*See* Ch 4. EPA's organization is not consistent, however; waste management is divided between water pollution and hazardous waste programs, for instance, while groundwater protection is a separate program awkwardly housed in the drinking water office.

following chapters.

Pollution control has a history as long as the cities', but modern federal pollution law begins in the 1940s when the Public Health Service, then still housed in a wartime Federal Security Agency, began providing assistance to local governments for sewage treatment, water supply, and rodent control.¹ Most assistance in waste disposal was part of the rodent-control program.² These early programs were all quite different, of course, and were only tenuously related by their common connection to public health. A review of the laws in those years would probably have included them under the heading of preventive medicine, rather than pollution control.

The federal role grew gradually. The Federal Water Pollution Control Act of 1948³ provided modest assistance to state agencies. In 1955, the first federal air pollution statute authorized the Public Health Service, now part of the new Department of Health, Education and Welfare, to perform research and provide financial assistance to states.⁴ This was swiftly followed by a new Federal Pollution Control Act of 1956, the 1948 statute having expired. The 1956 statute added the first program of grants for sewage treatment plants.⁵ From this time onward, air and water pollution statutes were closely linked, and began to develop common features drawn from the more adventurous state and municipal programs.⁶ In 1962, air and water pollution legislation were placed under common jurisdiction of a subcommittee of the Senate Committee on Public Works (because financial assistance dominated the programs), which helped to draw them together. The chairman of the new subcommittee, Senator Edmund S. Muskie, would play a powerful role.

As pollution problems worsened, and public concern grew, air and water statutes followed, each drawing on developing state experience, and each reflecting changes made in the other. An older statute, the Refuse Act, previously thought only to prevent obstructions to navigation, was dusted off and found to prohibit water pollution.⁷ There was a Clean Air Act in 1963,⁸ which gave the federal government limited authority to take enforcement action (through "abatement conferences,"

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¹See, e.g., Act of June 30, 1948, Pub. L. No. 80-845, 62 Stat. 1155 (1948) (water quality); Public Health Service Act, 42 U.S.C.A. §§ 241, 264(a) (public health research and vector control); § 14:1 note 2; Kovacs & Klucsik, *The New Federal Role in Solid Waste Management*, 3 Colum. J. Envtl. L. 205 (1976).

²See Public Health Service Act, 42 U.S.C.A. § 264(a); Kovacs & Klucsik, *The New Federal Role in Solid Waste Management*, 3 Colum. J. Envtl. L. 205 (1976).

³Pub. L. No. 80-845, 62 Stat. 1155 (1948).

⁴Air Pollution Control Act of 1955, ch. 360, 69 Stat. 322.

⁵Pub. L. No. 84-660, 70 Stat. 498 (1956).

⁶An excellent history of the two statutes from the mid-1950s to early 1970s is found in J. Davies, III & B. Davies, *The Politics of Pollution* (2d ed. 1975). See also § 2:2 for a brief history of the environmental quality standards on which both statutory programs were based in these years.

⁷See *United States v. Standard Oil Co.*, 384 U.S. 224 (1966) (Douglas, J.); 33 U.S.C.A. §§ 403, 407, 411. This was an 1899 statute which prohibited dumping of refuse in navigable waters, and prohibited obstructions to navigation except as authorized by the Corps of Engineers. Adventurous United States Attorneys in Pennsylvania used the statute to secure criminal convictions for unpermitted spills, see *United States v. Standard Oil Co.*, 384 U.S. 224 (1966), Rep. Henry Reuss urged wider use of the law to prevent pollution. The Nixon Administration established a permit system based on the Refuse Act in 1970, prohibiting all water pollution not authorized by a permit issued by the Corps of Engineers. See 35 Fed. Reg. 20005 (1970); 36 Fed. Reg. 6564 (1971). The prohibition of all discharges, except those authorized by permits, was incorporated in the Federal Water Pollution Control Act of 1972, § 301, 33 U.S.C.A. 1311, which in turn became the model for the Safe Drinking Water Act and RCRA. See § 3:1.

⁸Pub. L. No. 88-206, 77 Stat. 392 (1963).

participation in which was largely voluntary); a Water Quality Act in 1965, which introduced environmental quality standards to federal law, and with “abatement” provisions similar to those in the air law;⁹ amendments to the Clean Air Act in 1965, which authorized the first national emissions standards, to be set by the Public Health Service, for automobiles.¹⁰ In 1966, President Johnson shifted water pollution assistance into a new agency in the Department of Interior, the Federal Water Pollution Control Administration; responding, Congress adopted the Clean Water Restoration Act of 1966, which greatly increased the fund of assistance to local governments for construction of sewage treatment works.¹¹ A year later followed the Air Quality Act of 1967, in which the states were required to adopt air quality standards systems similar to those first propounded in the Water Quality Act of 1965.¹² In 1970, there was a Water Quality Improvement Act, in which Congress added provisions imposing liability for oil spills, and extended the water quality standard system to thermal pollution.¹³

Up to this point, the development of the statutes had been smooth and reciprocal; the federal role shifted gradually, from providing assistance to state programs to setting national criteria for environmental quality standards, and gently pressing states to develop plans to act on pollution when it exceeded the standards. The outline of a national pollution control program was emerging.

The National Environmental Policy Act of 1969 (NEPA)¹⁴ wrote the preamble for a new chapter in federal law; it reflected a growing concern with the threats posed by modern technology, and optimism that further development of science and technology would cure the problems which had appeared.¹⁵ The statute created a new Council on Environmental Quality, which began to function as an advocate for radically new legislation. Early in 1970, the Administration announced an ambitious new program of legislative proposals, which drew on the themes of NEPA. Conservation of limited natural resources and economic prosperity were said to be in conflict, the conflict worsening as the population grew and industrial technology became more powerful. The opposed demands could be reconciled, however, by still more advanced science and technology, which would produce new products with less waste.¹⁶

The Administration proposed extensive new statutes for air and water pollution control, and for the regulation of solid waste; the Administration program described early in 1970 was slowly modified and enacted in the next six years.¹⁷

The new themes were dramatically elaborated in the Clean Air Act Amendments

⁹Pub. L. No. 89-234, 79 Stat. 903 (1965).

¹⁰Pub. L. No. 89-272, 79 Stat. 992 (1965).

¹¹Pub. L. No. 89-753, 80 Stat. 1246 (1966).

¹²Pub. L. No. 90-148, 81 Stat. 845 (1967).

¹³Pub. L. No. 91-224, tit. I, 84 Stat. 91 (1970).

¹⁴Pub. L. No. 91-190, 83 Stat. 852 (1970), codified at 42 U.S.C.A. §§ 4321 to 4361.

¹⁵See § 10:53.

¹⁶See § 10:53.

¹⁷The President's message to Congress on February 10, 1970, contained the outline of what were to be the Administration's proposals for water pollution control, air pollution control, regulation of solid wastes, and management of federal lands. See Message from the President of the United States, H.R. Doc. No. 225, 91st Cong., 2d Sess. (1970). The proposed air pollution control act was adopted that year, roughly on the lines proposed by the President, although Senator Muskie succeeded in adding short deadlines for achievement of standards, and more stringent technology-forcing provisions than the Administration had asked for. See, e.g., J. Bonine, *The Evolution of Technology-Forcing in the Clean Air Act*, Env't Rep. (BNA) Monograph No. 21 (1975). The Administration's proposal for water pollution control regulation lacked technology-forcing provisions, and would have only strengthened the existing state plans based on water quality standards; these provisions were included in the eventual Clean

of 1970, which greatly broadened the federal role and introduced new methods and new urgency into pollution law. The elements of prior law were preserved; states were to develop plans to reduce pollution wherever it exceeded national standards. National emission limits were to be set for motor vehicles. But these goals were to be accomplished on a short schedule, specified in the statute, which allowed little more than five years for a complete cleanup of pollution. Furthermore, a new layer of regulation—“technology forcing” controls which were intended to force fundamental changes in industrial technology—was imposed on new sources of pollution, on sources of toxic pollutants, and on new models of motor vehicles.¹⁸ Although modeled on the Administration proposal, the Clean Air Act as it emerged from Congress was far more stringent.

As if to trump a Democratic Congress’ play, President Nixon announced the creation of a new agency, the Environmental Protection Agency (EPA), which he created by executive order,¹⁹ reuniting the air pollution program, still in the Public Health Service, and the Federal Water Pollution Control Administration, which had been in the Department of Interior since 1965; and adding to these, pesticide control programs from the Department of Agriculture.

Congress increased the stakes in 1972, with a new round of amendments to the Federal Water Pollution Control Act, going well beyond the President’s proposals.²⁰ In this statute, the large features of the air law were repeated, but still greater emphasis was given to the new “technology forcing” program, and even more stringent goals and schedules were set: all discharges of water pollution were to end by 1985.²¹

Along with the water act amendments, Congress adopted the Marine Protection, Research and Sanctuaries Act of 1972, which contains a system of controls for ocean dumping. The separate ocean dumping statute was needed because the jurisdiction of the Senate Public Works Committee did not extend to the oceans, which were the domain of Merchant Marine and Fisheries, and the dispute over jurisdiction was never resolved. Members of the two committees worked, although not with complete success, to keep the provisions of the two bills coherent.²²

A third statute was needed to complete the Federal Water Pollution Control Act amendments. The 1972 language left in doubt whether EPA had jurisdiction to issue permits for injection wells that affected only groundwater; the courts were divided, and EPA asked for clarifying legislation, which eventually was passed, attached to a bill setting standards for public drinking water supplies.²³

The remaining item in President Nixon’s 1970 program was a bill to regulate the

Water Act, but were greatly overshadowed by technology-forcing provisions. *See* Ch 14; J. Davies & B. Davies, *The Politics of Pollution* 39–44 (2d ed. 1975). The proposals for solid waste regulation eventually became the Resource Conservation and Recovery Act, with provisions added for hazardous waste management. In October, 1970, the Council on Environmental Quality published further proposals for toxic substances control and for regulating ocean dumping, which resulted in the Toxic Substances Control Act, the ocean dumping statute, and the London convention on ocean dumping. *See* § 13:132 (ocean dumping); § 15 (TSCA).

¹⁸*See* § 2:14, Ch 13.

¹⁹*See* Reorg. Plan No. 3 of 1970, 35 Fed. Reg. 15623 (1970), *reprinted in* 5 U.S.C.A. app. at 1132 (1982), *and in* 84 Stat. 2086 (1970).

²⁰Pub. L. No. 92-500, § 2, 86 Stat. 816 (1972).

²¹Clean Water Act § 101(a)(1), 33 U.S.C.A. § 1251(a)(1).

²²Pub. L. No. 92-532, tit. II, 86 Stat. 1063 (1972), *codified at* 33 U.S.C.A. §§ 1401 to 1445. Title III of the statute concerned Marine Sanctuaries; *see* 42 U.S.C.A. §§ 1431 to 1434. The jurisdictional dispute was limited to the Senate; in the House there was no difficulty. *See* Lettow, *The Control of Marine Pollution*, in *Federal Environmental Law* 596, 650 (E. Dolgin & T. Guilbert, eds. 1974).

²³*Compare* *United States Steel Corp. v. Train*, 556 F.2d 822, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20419 (7th Cir. 1977) (EPA may prohibit deep injection well without Clean Water Act permit) *with*

production of toxic chemicals. Six years of heated debate ended with the Toxic Substances Control Act of 1976, which authorized EPA to forestall pollution problems by regulating or prohibiting the manufacture of toxic chemicals which would pose an unreasonable hazard.²⁴

In the same year, the third chapter of environmental protection law opened with adoption of the Resource Conservation and Recovery Act, which created a system of state plans for regulation of solid waste disposal. The principal focus of this statute was the regulation of “open dumps” and litter; a subtitle provided, however, for special standards for hazardous waste management and disposal facilities.²⁵ In 1978, these provisions began to take on major new importance with the discovery of an abandoned hazardous waste dump at Love Canal.²⁶ In 1978, Congress hastily amended the Clean Water Act’s oil spill program to give EPA some authority to clean up some chemical spills,²⁷ and in 1980 enacted a broad emergency cleanup program, Superfund.²⁸

EPA, which like the rest of the country had largely ignored the groundwater protection programs authorized by the Clean Water Act, in 1980 announced an aggressive and very broad program for hazardous waste management under RCRA, and there have been repeated amendments of RCRA, since that time, most notably in 1984,²⁹ urging EPA on to ever more extensive measures. In the 1984 amendments, Congress added to RCRA an ambitious new program for the regulation of underground tanks in which petroleum or hazardous chemicals are stored, and from which leaking may contaminate groundwater.³⁰

The reauthorization of Superfund in 1986 further enlarged the program and modified RCRA, drawing the two together for protection of soil and groundwater. RCRA now carries out, in more forceful terms, the groundwater protection plans first sketched in the Clean Water Act, and adds to them an ambitious program for managing hazardous wastes before disposal. RCRA also regulates buried storage tanks, considered to be major sources of groundwater pollution.

The Emergency Planning and Community Right-to-Know Act³¹ was buried in the 1986 amendments to Superfund. This independent statute was passed in response to the disastrous 1984 release of methyl isocyanate in Bhopal, India. In addition to creating provisions for emergency planning with local, state and federal officials around chemical releases, the statute required annual reports of routine releases of

Exxon Corp. v. Train, 554 F.2d 1310, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20594 (5th Cir. 1977) (Clean Water Act permit not required). While these and other suits were pending in the lower courts, the House Interstate and Foreign Commerce Committee proposed a bill that would have prohibited most injection well discharges without a federally authorized permit. H.R. Rep. No. 1185, 90th Cong., 2d Sess. (1974), *reprinted in* United States Code Congressional and Administrative News pp 6454, 6457. The Safe Drinking Water Act of 1974 gave EPA the authority it had requested, and the *Exxon* decision was not appealed, which leaves still undecided how far the Clean Water Act applies to groundwater.

²⁴Toxic Substances Control Act, Pub. L. No. 94-469, 90 Stat. 2003 (1976), *codified at* 15 U.S.C.A. §§ 2601 to 2629. *See* Ch 18.

²⁵*See* Solid Waste Disposal Act, Pub. L. No. 89-272, tit. II, 79 Stat. 997 (1965), *as amended by* Resource Conservation and Recovery Act of 1976, Pub. L. No. 94-580, 90 Stat. 2795, *codified as extensively amended at* 42 U.S.C.A. §§ 6901 to 6987. The frequently amended Solid Waste Act is now universally known as the Resource Conservation and Recovery Act, or RCRA.

²⁶*See* § 14:6.

²⁷*See* 33 U.S.C.A. §§ 1321(b), (c); § 14:6.

²⁸The Comprehensive Environmental Response, Compensation and Liability Act, Pub. L. No. 96-510, 94 Stat. 2767 (1980), *now codified at* 42 U.S.C.A. §§ 9601 to 9657; *see* § 14:86.

²⁹*See* Hazardous and Solid Waste Act Amendments of 1984, Pub. L. No. 98-616, 98 Stat. 3224.

³⁰*See* RCRA tit. I, 42 U.S.C.A. §§ 6991 to 6991i.

³¹Pub. L. No. 99-499, tit. III, 100 Stat. 1729 (1986) (*codified at* 42 U.S.C.A. §§ 11001 to 11050).

hazardous chemicals from facilities, bringing public scrutiny to private management of hazardous substances.³²

In 1990, Congress amended the Clean Air Act to incorporate market-based incentives, performance-based standards, and emissions banking and trading.³³ For example, the amendments establish a clean fuels program for fleets and a California pilot program. The amendments also create an acid rain program that promotes the use of clean sulfur coal and natural gas as well as technologies to clean high sulfur coal.

Congress also passed the Oil Pollution Act in 1990.³⁴ The Act establishes and enhances: a comprehensive federal liability scheme; a single federal fund called the Oil Spill Liability Trust Fund to pay for response and monitoring costs; federal authority to order removal action or conduct such action itself; standards and reviews for licensing tank personnel and tightened tank equipment standards; spill prevention control and countermeasure plan requirements for onshore facilities, offshore facilities, and vessels; criminal penalties for violations of the Act; and civil penalties for spills of oil and other hazardous substances.

§ 11:3 Plan of the following chapters

The foregoing history suggested an outline that we have followed in the next three chapters. The Clean Air Act is given Chapter 12 to itself. The currently amended Federal Water Pollution Control Act, now universally called the Clean Water Act, and the ocean dumping statute, are described together in Chapter 13, so far as they create a system of permits to protect surface waters. In Chapter 14, we discuss the soil and groundwater protection program which is now made up of portions of the Clean Water Act, the injection-well permit program of the Safe Drinking Water Act, the hazardous waste management and underground storage tank programs of RCRA, and the emergency response and cleanup programs in the Clean Water Act and Superfund. The 1986 amendments of the Safe Drinking Water Act, which encouraged the states to draw the elements of these programs together into groundwater management plans, are also discussed.¹

³²See §§ 14:148 et seq.

³³Clean Air Act Amendments of 1990, Pub. L. No. 101-549, 104 Stat. 2399 (1990).

³⁴Oil Pollution Act of 1990, Pub. L. No. 101-380, 104 Stat. 484 (1990) (codified at 33 U.S.C.A. §§ 2701 to 2762).

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¹Safe Drinking Water Act Amendments of 1986, Pub. L. No. 99-339, 100 Stat. 642.

Chapter 12

Air*

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*Sections 12:1 through 12:85 by **Phillip D. Reed**, updates by **Susan L. Stephens**; previous updates by **Alan J. Gilbert** and **Lawrence N. Curtin**; §§ 12:86 through 12:117 by **Peter H. Wyckoff** and **Gregory Bradshaw Foote**; § 12:118 by **Richard A. Penna**; § 12:123 by **Robert A. Weissman**, **Matthew A. Low**, and **Norman D. Shutler**, updated by **Roger Fairchild** and **Robert A. Weissman**; § 12:143 by **John P.C. Fogarty**, updated by **Joshua B. Epel**, **Donn L. Calkins**, **John Stafford**, **Matt Dillman**, and **Laura Davis**.

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Primary Authority

Clean Air Act, 42 U.S.C.A. § 7401

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I. NATIONAL AMBIENT AIR QUALITY: THE GOAL OF CLEAN AIR**

§ 12:1 In general

The uniform national ambient air quality standards (NAAQS), promulgated by the Environmental Protection Agency (EPA), translate into specific numerical

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concentrations of the Clean Air Act's fundamental objective that air pollution not endanger the public health or welfare. The NAAQS are levels of pollution in the outdoor air¹ that available research indicates will not harm even those individuals who are particularly sensitive to the pollutants. They apply alike to the air over Los Angeles, the Grand Canyon, the farmland of southern Illinois, and the suburbs of Washington, D.C.: from sea to shining sea. And the statute directs EPA to make certain that the standards will be attained and maintained all across the land. Over the long history of implementation of the Clean Air Act, it has become apparent that the NAAQS are far more difficult to achieve in some areas than in most, sometimes due in significant part to uncontrollable factors such as weather and topography.² In response to this realization, Congress has not wavered from its commitment to nationwide achievement of the NAAQS, but it has given areas with the more persistent attainment problems more time to solve them, provided they will promise to implement whatever additional control measures the job may take.

While achievement of the NAAQS remains one of the central purposes of the Act, other objectives have been elevated to almost equal status. Control of hazardous air pollutants, curtailment of acid rain, and elimination of emissions of pollutants that cause deterioration of stratospheric ozone all are major themes of the Act as it reads after the 1990 Amendments, and each is largely independent of the NAAQS.

§ 12:2 The origins and evolution of federal air quality standards

The current system of nationally uniform air quality standards, to whose attainment states and the federal government are committed by law, is a radical departure from earlier federal air pollution control schemes. Initially, air quality standards were merely tools to be used in cleaning up heavily polluted areas to levels of pollution that were reasonable, considering health effects and the feasibility of pollution abatement. In the Clean Air Act of 1963,¹ Congress provided the Department of Health, Education, and Welfare (HEW) with authority to require abatement of "air pollution" in a complicated process involving conferences of polluters and state and federal officials, but did not define the evil to be abated and required consideration of technological feasibility. The absence of a definition of "pollution" ensured that, if convened, conferees would have plenty about which to talk, but little basis for deciding how much cleaner the air should be and which of the many sources of contamination had to cut back their emissions by how much to achieve that end.²

[Section 12:1]

¹The NAAQS apply outside buildings and private fence lines. 40 C.F.R. § 50.1(e) (definition of "ambient air").

²The effect of weather on NAAQS compliance is the subject of varying EPA policy decisions. *See, e.g.*, Memorandum from Mary Nichols, Assistant Administrator for Air and Radiation, to Regional Directors of Air Divisions, Areas Affected by PM-10 Natural Events (1996) (announcing the latest in a series of decisions to evaluate, and disregard where appropriate, PM-10 NAAQS violations caused by volcanoes and forest fires). Likewise, weather can trigger waivers in regulatory requirements designed to achieve NAAQS and ozone pollution reduction (*see above*). For example, Hurricane Katrina in 2005 triggered a temporary Emergency Nationwide Fuel Waiver on August 31, 2005 (allowing early use of winter gasoline and the use of higher-sulfur diesel fuel). *See* Letter to the Governors from the EPA Administrator, August 31, 2005, re: Emergency Fuel Waiver Concerning Diesel Fuel and Gasoline, August 2005 (extended in several states through October).

[Section 12:2]

¹Pub. L. No. 88-206, 77 Stat. 392 (1963).

²For a discussion of the failings of this system, *see* Jorling, *The Federal Law of Air Pollution Control*, in F. Anderson, *Federal Environmental Law* 1058, 1068 (1974).

The 1967 Air Quality Act³ attempted to provide a basis for specifying acceptable levels of air pollution to provide a benchmark for cleanup discussions. In a provision that became codified as section 107 of the Clean Air Act, Congress directed HEW to promulgate a list of air pollutants that are emitted by numerous, widespread, and diverse sources and whose presence in the atmosphere could constitute a threat to public health and welfare,⁴ and to identify and recommend control techniques for those pollutants.⁵ The federal government⁶ then had to publish “air quality criteria” for each such pollutant.⁷ The states were to use the criteria as the basis for air quality standards for “air quality control regions,” which generally were expected to be urban and industrial areas where concentrated populations were exposed to heavy pollution from numerous sources.⁸ The state thus had to consider both health effects and available control technologies in setting air quality standards and could set different standards for different regions. If a state did not accept this invitation, HEW could promulgate air quality standards for that state’s air quality control regions. Enforcement of the air quality standards was still left to the states or to cumbersome federal conferences, however.⁹

Congress quickly abandoned the notion of region-by-region air quality standards in favor of national clean air baselines, building this scheme on the existing air quality criteria. The 1970 Amendments¹⁰ directed EPA to promulgate national ambient air quality standards for the criteria pollutants within 120 days.¹¹ The primary NAAQS are to protect the public health with an “adequate margin for safety”; secondary standards address harm to environmental and economic interests, such as “soils, waters, crops,” “man-made materials,” “visibility and climate,” “economic values,” and “personal comfort.”¹² The primary standards had to be achieved within three years, the secondary standards within “a reasonable time.”¹³

The switch from state-promulgated, regional air quality standards to national, health-based NAAQS was a major change in strategy designed to tear down some of the roadblocks to pollution control discovered in the decentralized approach of earlier federal acts. By requiring national uniformity, Congress substituted one national proceeding for city-by-city proceedings. By basing the standards on health protection alone, Congress simplified the process and made possible stringent national standards. If feasibility continued to be a factor, EPA would have had to study the concentrations and sources of each pollutant in each area of the country, decide how much control of those sources was feasible, and promulgate national standards tuned to the area in which control was least feasible. Since the health ef-

³Pub. L. No. 90-148, 81 Stat. 485 (1967), *reprinted in* United States Code Congressional and Administrative News p 515.

⁴Clean Air Act § 107(b), 42 U.S.C.A. § 7407(b).

⁵Clean Air Act § 107(c), 42 U.S.C.A. § 7407(c).

⁶The Clean Air Act, as amended in 1967, was administered by the Department of Health, Education, and Welfare. In 1970, the authority was transferred to the new Environmental Protection Agency. Reorg. Plan No. 3 of 1970, 35 Fed. Reg. 15623 (1970), 5 U.S.C.A. app. at 1132 (1982).

⁷Clean Air Act § 107(b), 42 U.S.C.A. § 7407(b).

⁸*See* § 12:4 discussion of the role of air quality control regions in the Clean Air Act scheme.

⁹*See generally* Jorling, *The Federal Law of Air Pollution Control* in F. Anderson *Federal Environmental Law* 1068 (1974); O’Fallen, *Deficiencies in the Air Quality Act of 1967*, 33 *Law & Contemp. Probs.* 275, 284 (1968).

¹⁰The Clean Air Act Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1713, *reprinted in* United States Code Congressional and Administrative News p 1954.

¹¹Clean Air Act § 109(a), 42 U.S.C.A. § 7409(a). Clean Air Act § 307(d)(10), 42 U.S.C.A. § 7607(d)(10), authorizes the EPA Administrator to extend such short deadlines to six months.

¹²Clean Air Act § 109(b), 42 U.S.C.A. § 7409(b); Clean Air Act § 302(h), 42 U.S.C.A. § 7602(h).

¹³Clean Air Act § 110(a)(2)(A), 42 U.S.C.A. § 7410(a)(2)(A).

fects of breathing a pollutant are the same everywhere in the country, the NAAQS could ignore regional differences in the ease with which standards could be attained.¹⁴

The NAAQS provisions of the Act were not of major concern when Congress gave the Clean Air Act major overhauls in 1977¹⁵ and 1990.¹⁶ In 1977 Congress added a provision requiring review of the air quality criteria and the standards by 1980 and then every five years thereafter.¹⁷ It also gave EPA one year to promulgate a short-term (three hour) standard for nitrogen dioxide, unless the Agency concluded that such a standard was not necessary to protect public health and welfare.¹⁸ The 1977 Amendments required the Administrator to submit proposed NAAQS to a new Science Advisory Board, but the board's approval is not a prerequisite to adoption of standards.¹⁹ The 1977 Amendments also added new § 122,²⁰ which required EPA to study radioactive air pollutants, cadmium, arsenic, and polycyclic organic matter to determine whether they should be listed under § 109 or the Clean Air Act's hazardous air pollutant provision. The 1990 Amendments directed EPA to request a National Academy of Sciences study of the effectiveness of the secondary NAAQS in protecting human welfare and the environment, the costs of achieving fully protective secondary NAAQS and related matters, and to report its findings to Congress by November 15, 1993.²¹ All these changes were superficial, however, and the basic scheme of air quality standards on which the Clean Air Act's regulatory structure is built has remained essentially the same since 1970.

§ 12:3 Establishing air quality standards

The original NAAQS were promulgated with surprisingly little legal fanfare. Only one standard, the secondary standard for sulfur dioxide, was the subject of a reported court decision.¹ Some have suggested that these actions came at the dawn of the regulatory era of environmental law and the regulated community was still asleep. Subsequent actions concerning the standards attracted far more attention.²

¹⁴Am. Petroleum Inst. v. Costle, 665 F.2d 1176, 1185, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20916, 20919 (D.C. Cir. 1981).

¹⁵The Clean Air Act Amendments of 1977, Pub. L. No. 95-95, 91 Stat. 685, *reprinted in* United States Code Congressional and Administrative News.

¹⁶Clean Air Act Amendments of 1990, Pub. L. No. 101-549, 104 Stat. 2399.

¹⁷Clean Air Act § 109(d), 42 U.S.C.A. § 7409(d).

¹⁸Clean Air Act § 109(c), 42 U.S.C.A. § 7409(c). Given the mandatory language of the statute and the large uncertainties in available scientific data, EPA deferred promulgation of a three-hour nitrogen dioxide standard. 57 Fed. Reg. 13498, 13521-22 (1992).

¹⁹Am. Petroleum Inst. v. Costle, 665 F.2d 1176, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20916 (D.C. Cir. 1981).

²⁰Clean Air Act § 122, 42 U.S.C.A. § 7422.

²¹Clean Air Act Amendments of 1990, § 817.

[Section 12:3]

¹Kennecott Copper Corp. v. EPA, 462 F.2d 846, 2 Env'tl. L. Rep. (Env'tl. L. Inst.) 20116 (D.C. Cir. 1972). The standard was remanded for EPA to correct its failure to provide enough documentation for the standard to allow the court to give it meaningful review.

²Am. Petroleum Inst. v. Costle, 665 F.2d 1176, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20916 (D.C. Cir. 1981), cert. denied, 455 U.S. 1034 (1982) (upholding revision to the photochemical oxidant standard); Lead Indus. Ass'n v. EPA, 647 F.2d 1130, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20643 (D.C. Cir. 1980) (upholding the new lead standard); American Trucking Ass'ns, Inc. v. EPA, 175 F.3d 1027 (D.C. Cir. 1999) (remanding new and revised NAAQS for ozone and particulates to EPA); Whitman v. American Trucking Ass'ns, 531 U.S. 457, 121 S. Ct. 903 (2001) (remanding EPA implementation plan for revised ozone and particulates standards; EPA does not have the authority to consider costs of implementing and achieving NAAQS when setting standards), on remand to, American Trucking Ass'ns, Inc. v. EPA,

§ 12:4 Establishing air quality standards—The substance of the standards

The NAAQS are to protect public health with an adequate margin of safety. The Act does not mention consideration of cost or technological feasibility, and courts have interpreted this silence as “a deliberate decision by Congress to subordinate such concerns to achievement of health goals.”¹ The statute does not define “protection of the public health,” but it has been interpreted as a strict standard, intended to provide “an absence of adverse effects,” included in which might be subclinical effects that themselves do not signal immediate harm, but foreshadow future illness.² Highly sensitive groups are protected.³ On this basis, standards would be set below the lowest level of pollution at which scientists had identified adverse health effects. How much below depends on what is an adequate margin of safety and is discretionary with the Administrator.⁴ Judgments on margins of error may have a major effect on the level of the standard.⁵

The statutory standard for NAAQS is quite stringent, but may allow somewhat more flexibility in practice than it advertises on paper. By 1977, if not sooner, it was clear to Congress that a standard allowing any ambient concentrations of criteria pollutants could not ensure an absence of adverse effects, but Congress did not insist on zero-risk NAAQS.⁶ Although the statute requires that the standard be based solely on health considerations, it is possible for concern over the cost and fea-

283 F.3d 355 (D.C. Cir. 2002) (upholding revised particulate and ozone standards).

[Section 12:4]

¹Lead Indus. Ass’n v. EPA, 647 F.2d 1130, 1149, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20643, 20652 (D.C. Cir. 1980). The rationale is that where Congress intended EPA to consider cost and feasibility, it so provided, as in new source performance standards in § 111, 42 U.S.C.A. § 7411. Without explicit permission in the Act, EPA may not consider costs. *Whitman v. Am. Trucking Ass’ns*, 531 U.S. 457, 121 S. Ct. 903 (2001) (EPA not authorized to consider implementation costs in setting NAAQS in determining the “adequate margin of safety”). Compare *NRDC v. EPA*, 824 F.2d 1146, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 21032 (D.C. Cir. 1987) (en banc) (concluding EPA properly considered cost and technological feasibility while setting vinyl chloride national emission standards for hazardous air pollutants (NESHAPs), despite statutory silence on the issue).

²Lead Indus. Ass’n v. EPA, 647 F.2d 1130, 1153–54, 1158–59, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20643, 20654–55, 20657–58 (D.C. Cir. 1980).

³See, e.g., 43 Fed. Reg. 46246 (1978) (young children are the protected group in lead ambient air quality standard rulemaking). Compare *Chem. Mfrs. Ass’n v. EPA*, 28 F.3d 1259, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 21210 (D.C. Cir. 1994) (chemically induced nasal irritation is not a serious health effect in a “high risk” determination under the hazardous air pollutant program) and 61 Fed. Reg. 25566 (May 22, 1996) (sulfur dioxide (SO₂) NAAQS not revised despite convincing evidence of short-term health effects for exercising asthmatics after exposure to peak concentrations), challenged by *Am. Lung Ass’n v. Browner*, 134 F.3d 388 (D.C. Cir. 1998).

⁴Lead Indus. Ass’n v. EPA, 647 F.2d 1130, 1146–47, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20643, 20650 (D.C. Cir. 1980) (where the Administrator is called upon for policy judgments in the face of scientific uncertainty, as is the case in evaluating threshold scientific data on adverse health effects from exposure to air pollution, the court will uphold the Administrator so long as he provides a reasonable explanation for his decision). See also *American Petroleum Inst. v. Costle*, 665 F.2d 1176, 1187, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20916, 20920 (D.C. Cir. 1981) (courts will uphold the margin of error decisions so long as they are supported by the record and “not based on sheer guesswork”); *American Trucking Ass’ns, Inc. v. EPA*, 283 F.3d 355 (D.C. Cir. 2002) (EPA is not required to establish a precise measure of the rise to safety it considers adequate every time it establishes a NAAQS).

⁵See § 12:5.

⁶As Senator Muskie stated in Senate debate on the 1977 Amendments:

I wish it were possible for the Administrator to set national primary and secondary standards that fully implement the statutory language. . . .

. . . .

He has had to make a programmatic judgment in the face of the fact that he found there is no threshold in health effects, which makes it very difficult then to apply absolute health protection, and he has not been able to do that.

sibility of attaining stringent standards to influence the Administrator's judgment on how much to rely on speculative data on the degree of risk and how large a margin of safety to leave.⁷

The NAAQS are stated in terms of concentrations of pollutants in the ambient, or outdoor air, averaged over several time periods. The short-term standards allow air quality to exceed the standards (known in air pollution control jargon as an "exceedance") once per year. The concentrations and averaging periods differ from pollutant to pollutant, and some pollutants have multiple standards. The averaging period for the standard is generally selected to coincide with the duration of exposure associated with harmful health effects.⁸ (Note, the ozone standard is too confusing to "shorthand" here. See 40 C.F.R. §§ 50.9 and 50.10.)

For example, the current standards for sulfur dioxide (SO₂) (all stated as parts of SO₂ per million parts of air) include two primary standards, 0.030 as an annual arithmetic mean and 0.14 as a maximum twenty-four-hour average, and one secondary standard, 0.5 as a maximum three-hour average.⁹ By contrast, nitrogen dioxide (NO₂) has the same primary and secondary standard, 0.053 parts per million, annual arithmetic mean.¹⁰ The NAAQS themselves are rather simple, but they are accompanied by detailed technical discussions of how to measure air quality, because much rides on the results of those measurements.¹¹

126 Cong. Rec. S9426 (daily ed. June 10, 1977), *quoted in* Lead Indus. Ass'n v. EPA, 647 F.2d 1130, 1153 n.43, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20643, 20654 n.43 (D.C. Cir. 1980).

⁷That might be implied from Senator Muskie's comment on the EPA Administrator's need to be "pragmatic" in setting NAAQS. 126 Cong. Rec. S9426 (daily ed. June 10, 1977), *quoted in* Lead Indus. Ass'n v. EPA, 647 F.2d 1130, 1153 n.43, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20643, 20654 n.43 (D.C. Cir. 1980); *see also* Schoenbrod, Goals Statutes or Rules Statutes: The Case of the Clean Air Act, 30 UCLA L. Rev. 740, 791 (1983) (because the statutory directive is so extreme, EPA must consider costs in setting NAAQS, but cannot admit it). *But see* Whitman v. American Trucking Ass'ns, 531 U.S. 457, 121 S. Ct. 903 (2001) (rejecting the argument that § 109(b)(1) of the Act allows the consideration of cost by use of the terms "adequate margin of safety" or "requisite to protect.").

⁸American Petroleum Inst. v. Costle, 665 F.2d 1176, 1186, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20916, 20920 (D.C. Cir. 1981).

⁹40 C.F.R. §§ 50.4, 50.5. After lengthy review, the Agency decided to retain the secondary standard for sulfur dioxide in April 1993. 58 Fed. Reg. 21352 (1993). This final decision is a part of a sulfur dioxide standard review process proposed by EPA in April 1988. See 53 Fed. Reg. 14926 (1988). EPA is also concerned that asthmatic individuals can be injured when exposed to high sulfur dioxide concentrations for five minutes. While there is a low probability that many such occurrences take place nationwide, the problem is real for a few, targeted sources. EPA solicited comments on alternative strategies and focused on the individual sources involved. It promised to review a strategy that involves a NAAQS revision. 60 Fed. Reg. 12492 (Mar. 7, 1995). On May 22, 1996, EPA announced its decision not to revise the SO₂ NAAQS despite convincing evidence that high, short-term levels of the chemical in the atmosphere can cause health effects—in the form of bronchoconstriction—in exercising asthmatics. 61 Fed. Reg. 25566, 25569 (May 22, 1996). EPA cited the "localized, infrequent and site-specific nature of the risk involved" to find that these short-term peaks in SO₂ concentrations "do not constitute the type of ubiquitous public health problems for which establishing in NAAQS would be appropriate." 61 Fed. Reg. 25566, 25575 (May 22, 1996). EPA announced it would repropose rules to protect such individuals through increased surveillance and targeted SIP revisions.

¹⁰40 C.F.R. § 50.11.

¹¹In the Code of Federal Regulations, the standards take up just over three pages, while the "reference methods" that describe how to measure compliance with the standards take up over seventy pages. See 40 C.F.R. Part 50. Changes in the reference methods are subject to the procedures governing informal rulemaking, not the more exacting procedures prescribed by § 307(d) of the Act, 42 U.S.C.A. § 7607(d), for changes in the NAAQS. PPG Indus., Inc. v. Costle, 659 F.2d 1239, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20858 (D.C. Cir. 1981). While EPA may, without notice and comment rulemaking, allow states to utilize various methods for measuring compliance with the NAAQS, it may not require them to do so without such rulemaking. Natural Res. Def. Council v. Thomas, 845 F.2d 1088, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20955 (D.C. Cir. 1988).

§ 12:5 Establishing air quality standards—The standard-setting procedure

The NAAQS are set (or revised)¹ by the EPA Administrator through a complex process that relies on a variety of scientific and other input.² The complexity of the

[Section 12:5]

¹The statute requires the same procedure for new standards and revisions. Clean Air Act § 109(b)(1), (2), 42 U.S.C.A. § 7409(b)(1), (2).

²The process is well described in *American Petroleum Institute v. Costle*, 665 F.2d 1176, 1182–83, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20916, 20917–18 (D.C. Cir. 1981):

EPA promulgated primary and secondary standards for photochemical oxidants (i.e., ozone) in 1971. Both standards were established at an 0.08 ppm hourly average not to be exceeded more than once a year. 36 Fed. Reg. 8187 (1971). The method used to determine compliance with the 1971 standards measured only ozone. 43 Fed. Reg. 26967 (1978). In 1976 EPA began to revise the 1971 standards and in April 1977 requested data and information relevant to the revision. 42 Fed. Reg. 20493 (1977).

As part of the revision, EPA established a working group within the Criteria and Special Studies Office of its Office of Research and Development to develop a “criteria document.” A criteria document “accurately reflect[s] the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on public health or welfare which may be expected from the presence of such pollutant in the ambient air, in varying quantities. 42 U.S.C.A. § 7408(a)(2); see 42 U.S.C.A. § 7409(a). In the early stages of preparing the ozone criteria document EPA retained a panel of expert environmental consultants (the Shy Panel) and sought their opinions on the ozone concentration levels at which adverse health effects might be experienced. The Shy Panel concluded that “short term exposures to ozone in the range of 0.15 to 0.25 ppm may impair mechanical function of the lung, and may induce respiratory and related symptoms in sensitive segments of the population.” . . . The panel recommended that the primary standard remain at 0.08 ppm The panel’s recommendations and conclusions were included in the draft criteria document.

In 1974 the Administrator of the EPA established a Science Advisory Board (SAB) to assist in establishing NAAQS, among other functions During the revision of the ozone standard, the SAB reviewed two full drafts and a third draft of the summary chapter of the ozone criteria document and offered comments on its content. After examining the summary of the third draft, six of the eleven SAB members voted to approve the criteria document, with reservations and recommended changes. Two members rejected the document, and three members offered no judgment

As a further aid to the Administrator in establishing the ozone standards, EPA conducted a “risk assessment study.” This study combined medical opinions as to the necessary ozone levels for creation of certain adverse health effects (e.g., aggravation of emphysema) with predictions as to peak ozone levels in a five-year period. . . . The study attempted to predict the probability of creating certain health problems under various possible standards. The Shy Panel relied on the results of this study in recommending that the primary standard remain at 0.08 ppm. Although the risk assessment study results were summarized in the preamble to the final regulations, 44 Fed. Reg. 8216 (1979), the Administrator acknowledged that the method used in arriving at the results was not completely reliable. 44 Fed. Reg. 8210-11 (1979). The parties dispute whether the results of the risk assessment study played a significant role in the establishment of the ozone standards.

On June 22, 1978, EPA published the proposed primary and secondary standards for ozone. 43 Fed. Reg. 26962 (1978). The proposed primary standard was raised to 0.10 ppm, while the proposed secondary standard remained at 0.08 ppm. EPA also proposed a revision in the measuring standard (the one-exceedance-per-year attainment measure) by substitution of a new standard. Under the old standard, as long as the 0.08 ppm standard was not exceeded more than once a year, the standard was met. The new measuring standard is met when “the expected number of hour[s] per calendar year with concentrations above 0.10 ppm is less than or equal to one [over a three year period].” 43 Fed. Reg. 26968 (1978). In setting the proposed primary standard at 0.10 ppm the Administrator relied on studies showing adverse health effects at ozone concentrations of 0.15 to 0.35 ppm. 43 Fed. Reg. 26966 (1978). He also relied on medical opinions and some of the conclusions of the risk assessment study. *Id.* at 26966-67. The proposed secondary standard was based on predictions as to the effects of certain ozone concentrations on crop yields due to leaf damage. 43 Fed. Reg. 26969 (1978).

After publication of the proposed standards, EPA conducted four public hearings on the standards and received numerous comments

In February 1979 EPA published final primary and secondary standards for ozone, raising both to 0.12 ppm. 44 Fed. Reg. 8202. The Administrator determined that “the most probable level for adverse health effects in sensitive persons, as well as in healthier (less sensitive) persons who are exercising vigorously, fall in the range of 0.15 to 0.25 ppm.” 44 Fed. Reg. 8216 (1979). He based his conclusion on the criteria document, the comments submitted on the proposed standards, the report of the Shy Panel, and medical opinions collected during the risk assessment study. 44 Fed. Reg. 8215-16 (1979). The Administrator also concluded that the 0.12 ppm standard provides an adequate margin of safety. 44 Fed. Reg. 8216-17 (1979). He raised the proposed secondary standard based on a determination that average daily maximum ozone concentrations of 0.12 ppm would not harm crop yields. 44 Fed. Reg. 8217-18 (1979). Finally, in addition to establishing ozone standards, EPA published four models for determining the amount of hydrocarbon reduction necessary to meet the standards. 44 Fed. Reg. 8234 (1979). No petitions for reconsideration of the standards were filed with EPA. Petitions for

process invites challenge, but the Act immunizes decisions from reversal for procedural irregularity unless the error is serious and material.³ EPA staff reviews the scientific literature to identify the lowest levels of pollution in the ambient air that have been shown to cause or contribute to adverse health effects for sensitive populations. Relevant data from these studies are included in draft criteria documents. The studies may identify ranges of exposures that may be harmful, rather than single levels, and their results generally carry a degree of uncertainty. The EPA Science Advisory Board and outside interests scrutinize the draft criteria documents to ensure that the criteria are scientifically valid, and the documents may be revised on the basis of the comments.⁴ Reviewing courts are reluctant to assess the validity of the individual studies included in the database selected by the Administrator, looking instead at whether the decision was reasonable.⁵ Once the data base is established, the Administrator still must decide what is an adequate margin of safety. The Administrator may “err on the side of overprotection”; courts will uphold the margin of safety decisions so long as the decisions are supported by the record and “not based on sheer guesswork.”⁶

Fierce debate over the role of the costs of compliance in promulgation of NAAQS marked the 1997 promulgation of new and revised particulate matter and ozone standards.⁷ EPA received a widely disparate set of rulemaking comments, and there were intense differences of opinion within the Clinton Administration. Some suggested that the uniform findings of previous cases are wrong and that consideration of cost should always play a role in the standard-setting process. Others pointed to the extremely controversial scientific underpinnings of the new particulate standards and argued that in such circumstances cost should be a factor heavily weighed. Still others pointed to the government’s own studies showing that the cost of the new ozone standards outweigh their benefits to public health and the environment and argued that the standards should not be promulgated at all.⁸

EPA promulgated the 1997 particulate and ozone standards in the face of this

review pursuant to 42 U.S.C.A. § 7607(b)(1) followed.

The lengthy process for review of the national ambient air quality standards remains the focus of criticism and study within and outside the Agency. *See, e.g.*, IV Clean Air Rep., Inside EPA, Mar. 11, 1993, at 4.

³Clean Air Act § 307(d)(9)(D), 42 U.S.C.A. § 7607(d)(9)(D). Courts have upheld the EPA NAAQS process, even when flawed. *Am. Petroleum Inst. v. Costle*, 665 F.2d 1176, 1187, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20916, 20920 (D.C. Cir. 1981).

⁴*See, e.g.*, *Lead Indus. Ass’n v. EPA*, 647 F.2d 1130, 1139–41, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20643, 20646–47 (D.C. Cir. 1980) (development of the criteria document for lead).

⁵*American Petroleum Inst. v. Costle*, 665 F.2d 1176, 1185, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20916, 20919 (D.C. Cir. 1981); *Am. Trucking Ass’n, Inc. v. EPA*, 283 F.3d 355 (D.C. Cir. 2002).

⁶*American Petroleum Inst. v. Costle*, 665 F.2d 1176, 1187, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20916, 20910 (D.C. Cir. 1981). *See also* *Lead Indus. Ass’n v. EPA*, 647 F.2d 1130, 1146–47, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20643, 20650 (D.C. Cir. 1980). EPA describes its approach to the meaning of a “margin of safety” for NAAQS development in the preambles to the 1997 rulemakings adopting particulate matter (PM) and ozone NAAQS. 62 Fed. Reg. 38651, 38688–89 (July 18, 1997) (particulate matter); 62 Fed. Reg. 38855, 38883 (July 18, 1997) (ozone). The Agency rejects mandatory use of a two-step approach in which the Administrator first picks a “safe” level for the NAAQS and then chooses a specific margin of safety considering cost and other social impacts. EPA prefers a more ambiguous process, performed on a case-by-case basis for the pollutant involved, in which the Administrator articulates the judgmental factors she has taken into account to pick a margin of safety, but is not held to any particular decisional approach. *See also* *Am. Trucking Ass’n, Inc. v. EPA*, 283 F.3d 355 (D.C. Cir. 2002) (employing “highly deferential” standard in reviewing EPA margin of safety; particulate and ozone levels chosen were rational in light of the scientific evidence).

⁷*See, e.g.*, Minority Laments GOP Focus On Cost in Senate PM/Ozone Hearing, Inside EPA’s Clean Air Rep., Feb. 6, 1997, at 4; Governors Debate Use of Cost-Benefit Analysis in PM/Ozone Regs, Inside EPA’s Clean Air Rep., Jan. 23, 1997, at 12.

⁸The positions of commenters are described in EPA’s preamble discussions, 62 Fed. Reg. at

cost-benefit controversy, but only following the issuance of a favorable Presidential decision and memorandum.⁹ The Agency stood by the traditional approach to NAAQS standard-setting. In a substantial discussion in the preambles to both new rules, EPA cited the legislative history of the 1970 Clean Air Act and fundamental cases in the area to confirm its interpretation that cost considerations play no role in the setting of the NAAQS.¹⁰ It distinguished an *en banc* decision of the United States Court of Appeals for the District of Columbia holding that costs of compliance must be considered when setting (now superseded) National Emissions Standards for Hazardous Air Pollutants (NESHAPs).¹¹ Furthermore, the Supreme Court found the text of Clean Air Act § 109(b) to be clear in prohibiting EPA from considering implementation costs when it establishes NAAQS.¹² Finally, EPA argued that procedural statutes passed by a Congress very interested in regulatory reform and the use of cost-benefit investigations do not apply to promulgation of the NAAQS.¹³ The U.S. Supreme Court has confirmed trial cost considerations could not play a role in setting the new and revised particulate and ozone standards, even in the margin of safety context.¹⁴

§ 12:6 The status of the NAAQS

There are NAAQS in effect for six pollutants: particulate matter, sulfur oxides, ozone, nitrogen dioxide, carbon monoxide, and lead.¹ The 1970 Amendments required EPA to promulgate standards for six pollutants.² Since that time EPA deleted hydrocarbons from the list³ and added lead,⁴ the latter action coming in response to a court decision that EPA has a nondiscretionary duty to list pollutants if it has decided that they are widespread, emitted by numerous sources, and harmful to human health.⁵ Whether because of bureaucratic conservatism and the difficulty of proving that EPA had made the requisite finding for other pollutants, or the soundness of the original listing, the Agency has not been required to list any other

38683-88 (particulate NAAQS); 62 Fed. Reg. at 38878-83 (ozone NAAQS).

⁹Memorandum from President Clinton for the Administrator of the Environmental Protection Agency, Implementation of Revised Air Quality Standards for Ozone and Particulate Matter (July 16, 1997). The memorandum is accompanied by a detailed attachment titled *Implementation Plan for Revised Air Quality Standards*.

¹⁰62 Fed. Reg. at 38683-88 (particulate matter); 62 Fed. Reg. at 38878-83 (ozone).

¹¹NRDC v. EPA, 824 F.2d 1146, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 21032 (D.C. Cir. 1987) (en banc).

¹²Whitman v. Am. Trucking Ass'n, 121 S. Ct. 903 (2001) (The Court also determined that other CAA provisions requiring cost considerations have no impact on the issue of whether EPA may take into account costs when it sets NAAQS.).

¹³The statutes involved are the Unfunded Mandate Reform Act of 1995, 2 U.S.C.A. §§ 1501 to 1517, and the Small Business Regulatory Enforcement Fairness Act of 1996, Pub. L. No. 104-121, 110 Stat. 857 (amending the Regulatory Flexibility Act, 5 U.S.C.A. §§ 601 to 808).

¹⁴Whitman v. Am. Trucking Ass'ns, 531 U.S. 457, 121 S. Ct. 903 (2001).

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¹40 C.F.R. part 50.

²EPA initially promulgated air quality standards for six pollutants for which criteria had been published: sulfur dioxide, particulates, carbon monoxide, photochemical oxidants (ozone), hydrocarbons, and nitrogen dioxide. 36 Fed. Reg. 22384 (1971).

³EPA rescinded the hydrocarbon standard in 1983, 48 Fed. Reg. 628 (1983), because it concluded that the pollutant does not directly affect human health and that its contribution to smog is fully regulated by the ozone NAAQS.

⁴EPA promulgated lead standards in 1978. 43 Fed. Reg. 46246 (1978), as amended at 73 Fed. Reg. 66964 (2008).

⁵NRDC v. Train, 411 F. Supp. 684, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20366 (S.D. N.Y.), aff'd, 545 F.2d 320, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20004 (2d Cir. 1976).

pollutants.⁶ Courts have upheld EPA's decision not to set NAAQS for pollutants known to be harmful and widespread where the pollutants were not well understood and the Agency planned to study them.⁷

On December 2, 2009, the Center for Biological Diversity (along with 350.org) filed a petition with EPA requesting EPA to declare CO₂ a criteria pollutant and to set an AAQS that would establish a science-based limit for CO₂ emissions no greater than 350 parts per million. Such a limit would in turn require states to reduce ambient concentrations of CO₂. The petition also requests EPA to similarly address other GHGs. As of December 15, 2009, EPA has not officially acted on the petition but has indicated that it does not agree with an approach that would set CO₂ AAQS under Section 108.⁸

§ 12:7 Revising the standards

The NAAQS are not static targets. Several of the original NAAQS were changed relatively early¹ and, as amended in 1977, the Act directs EPA to review the standards periodically and to revise them if it deems necessary.² The revision process can be controversial and slow.³ So long as its review proceeds in accord with the deadlines, EPA probably cannot be hastened.⁴ Earlier changes in the standards generally allowed more pollution.⁵

Particulate Matter

⁶The legislative history of the Act suggests that Congress expected EPA to greatly expand the list of criteria pollutants rather quickly. One commentator argues that EPA failed to live up to that expectation because of concern over its ability to carry out the mandate of the Act for the six pollutants for which listing was mandatory. Schoenbrod, *Goals Statutes or Rules Statutes: The Case of the Clean Air Act*, 30 UCLA L. Rev. 740, 396 (1983).

⁷*Am. Petroleum Inst. v. Costle*, 665 F.2d 1176, 1186, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20916, 20920 (D.C. Cir. 1981) (decision to recast photochemical oxidant standard as ozone standard, thereby not regulating other harmful photochemical oxidants, upheld because EPA argued further study needed).

⁸For a copy of the petition, see http://www.eenews.net/public/25/13388/features/documents/2009/12/02/document_gw_01.pdf.

[Section 12:7]

¹See § 12:7 note 5.

²Clean Air Act § 109(d), 42 U.S.C.A. § 7409(d). See *Env'tl. Def. Fund, Inc. v. Thomas*, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21394 (S.D. N.Y. 1988) (EPA must review the NAAQS, but whether to revise them is left to the Agency's discretion), *rev'd*, 870 F.2d 892 (2d Cir. 1989) (Administrator does not have nondiscretionary duty to revise NAAQS, but must complete review and issue final decision to revise or not revise.). See also 55 Fed. Reg. 14858 (1990) (EPA releases draft revised criteria document for carbon monoxide as prelude to possible modification of NAAQS.). See 59 Fed. Reg. 38906 (Aug. 1, 1994) (announcing NAAQS revision for CO not appropriate at the time).

³See Comment, *Marking Time: The Clean Air Act Between Deadlines*, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 10022 (1985) (discussion of the fits and starts of efforts to revise the standards). See §§ 12:4, 12:5.

⁴*Consolidation Coal Co. v. Costle*, 483 F. Supp. 1003, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20296 (S.D. Ohio 1979) (Administrator did not abuse discretion by not expediting review of secondary sulfur dioxide standard, which plaintiff alleged was revealed by recent studies to be more stringent than necessary).

⁵The 1979 revision of the photochemical oxidant standard raised the standard by 50 percent. See § 12:5. The original NAAQS for sulfur dioxide included an annual standard of sixty micrograms per cubic meter and a twenty-four-hour standard of 260 micrograms per cubic meter. The D.C. Circuit remanded the standard, accepting Kennecott Copper's contention that the record included no justification for the standard. *Kennecott Copper Corp. v. EPA*, 462 F.2d 846, 2 Env'tl. L. Rep. (Env'tl. L. Inst.) 20116 (D.C. Cir. 1972). In 1973, EPA reissued the standards with only a short-term secondary standard of 1300 micrograms per cubic meter. According to one commentator, the change opened the door to use of tall stacks and intermittent controls to achieve the primary standards. Jorling, *The Federal Law of Air Pollution Control*, in F. Anderson, *Federal Environmental Law* 1058, 1085 (1974). On April 26,

On July 1, 1987, EPA promulgated regulations replacing the particulate matter standard measured in terms of total suspended particulates with a standard that addresses only those particles small enough to be breathed into the lungs, (*i.e.* 10 microns in diameter or less).⁶ The new standard, long in the works, required a wholesale revision of the entire regulatory scheme for particulate control.⁷ On April

1988, after completing its required review of the sulfur dioxide standard, EPA proposed to leave the standard unchanged. 53 Fed. Reg. 14926 (1988). In its ongoing reassessment of the ozone standard, EPA has considered tightening the twenty-four-hour standard from 0.12 parts per million to 0.08 or 0.10 parts per million. The Agency reportedly decided to put off the question pending resolution of the controversy over how to deal with the air quality control regions in nonattainment for ozone after the 1987 attainment deadline. EPA Reportedly To Reaffirm 0.12 Ozone Standard, Add 8-Hour Based on Health, Inside EPA's Clean Air Rep., May 8, 1987, at 1. On August 10, 1992, EPA announced its decision not to tighten the ozone standard. 57 Fed. Reg. 35542 (1992).

After a review of the ozone NAAQS, which was forced by a lawsuit, EPA decided to retain the standard in its previous form. 57 Fed. Reg. 8429 (Mar. 10, 1992) (comments sought on consent decree); 58 Fed. Reg. 13008 (Mar. 9, 1993). The Agency promised to revisit the standard over a period of years in light of new scientific studies, but again was sued by the original petitioners in an effort to speed the Agency's review of the new data. 58 Fed. Reg. at 13011-12, 13016; Inside EPA's Clean Air Rep., July 15, 1993, at 19. In a published notice, EPA described an accelerated review schedule for the ozone NAAQS. 59 Fed. Reg. 5164 (Feb. 3, 1994). In 1996, EPA announced that it would likely eliminate the primary one-hour ozone standard and promulgate a tighter, eight-hour primary ozone standard and a secondary one-hour standard designed to protect vegetation. 61 Fed. Reg. 29719, 29721-22 (June 12, 1996). Section 12:5 describes how EPA adopted this approach in July 1997. 62 Fed. Reg. 38855 (July 18, 1997).

The one-hour standard is 0.12 ppm; the eight-hour standard is 0.08 ppm. 40 C.F.R. §§ 50.9, 50.10. However, the one-hour standard will cease to apply within one year after designation of an area for the eight-hour standard. As of June 15, 2005, the eight-hour ozone standard completely replaced the previous one-hour standard. The implementation plan for the new eight-hour standard was published in two phases. Phase 1 set forth the classification scheme for non-attainment areas; Phase 2 sets out the rest of the plan. Proposed Rule to Implement the 8-Hour Ozone National Ambient Air Quality Standard, 68 Fed. Reg. 32802 (June 2, 2003); finalized at 69 Fed. Reg. 23951 (Apr. 30, 2004). The final rule had petitions for reconsideration filed against it, and EPA granted reconsideration on several issues. In 70 Fed. Reg. 5593 (Feb. 3, 2005) and in 70 Fed. Reg. 17018 (Apr. 4, 2005), EPA proposed a notice of public hearing on implementing the eight-hour ozone NAAQS Phase 1 and took final action on the reconsideration in 70 Fed. Reg. 39413 (July 8, 2005), reaffirming the April 30, 2004 final rule. The final Phase 1 rules were published on Aug. 3, 2005 at 70 Fed. Reg. 44470.

On November 9, 2005, EPA issued the second major rule to implement the eight-hour ozone standard, the so-called Phase 2 regulation. This regulation establishes timetables for states to implement control requirements for stationary and mobile pollution sources. Significantly, the Phase 2 regulations allow the 28 states covered by the Clean Air Interstate Rule (CAIR), which uses emissions trading to cut nitrogen oxide emissions from power plants, to exempt electric power plants from being required to install reasonably available control technology (RACT). *See* § 12:37 for a discussion of the CAIR rule and § 12:8 for a discussion of RACT. EPA believes that emissions trading under CAIR will be more effective than RACT controls in reducing ozone levels.

The Agency announced in a final decision that it would not revise the carbon monoxide primary or secondary NAAQS. 59 Fed. Reg. 38906, 38914 (Aug. 1, 1994). This announcement followed EPA's review of the health effects of carbon monoxide over a five-year period ending in 1992. 59 Fed. Reg. 38906, 38912 (Aug. 1, 1994).

EPA withdrew from a review of the lead NAAQS on October 13, 1993, concluding that airborne lead no longer creates a serious public health threat. Inside EPA's Clean Air Rep., Nov. 18, 1993, at T1. Lead emissions dropped 98 percent between 1970 and 1991. EPA, Report of the Office of Air and Radiation to the Administrator 27 (Nov. 12, 1992), *reprinted in* American Bar Association, Update: Implementing the 1990 Clean Air Act/EPA Speaks 29 (Feb. 11, 1993).

EPA announced its decision not to revise the NAAQS for NO₂ in late 1995. 60 Fed. Reg. 52874 (Oct. 11, 1995). The Administrator's decision was based on a new 1995 criteria document.

⁶EPA characterized the new standard as "a new indicator that includes only those particles with an aerodynamic diameter less than or equal to a nominal 10 micrometers . . . replacing the 24-hour primary TSP standard with a 24-hour PM₁₀ standard of 150 ug/m³ with no more than one exceedance per year." 52 Fed. Reg. 24634 (1987).

⁷The PM₁₀ standard was proposed in 1984, 49 Fed. Reg. 10408 (1984). The new NAAQS had to be

27, 1990, the new particulate matter NAAQS were upheld in most respects.⁸

EPA broke new ground with its promulgation of a revised suite of NAAQS for particulate matter in 1997. These standards introduced new limits on ambient concentrations of particles of aerodynamic diameter of 2.5 microns or less, while continuing to regulate particles between 10 microns and 2.5 microns in diameter.⁹

All previous NAAQS had been based on one or more specifically targeted, biologically described health effects, such as a decrease in lung function¹⁰ or the inability of blood to carry oxygen as well as it should.¹¹ The 1997 standards for particles of 2.5 microns differ significantly because they are grounded on the results of epidemiologi-

accompanied by a new reference method for measuring particulates in the air, 52 Fed. Reg. 24724 (1987), new monitoring and reporting rules, 52 Fed. Reg. 24724, 24736 (1987), new SIP rules, 52 Fed. Reg. 24724, 24672 (1987), a new fugitive dust policy, 52 Fed. Reg. 24724, 24716 (1987) (proposal), and other regulatory revisions, 52 Fed. Reg. 24724, 24634 (1987). Later, EPA announced plans to approve a method for determining attainment of the PM₁₀ standard, and to authorize states to use this method in their PM₁₀ SIPs. 53 Fed. Reg. 11688 (1988). The magnitude of the job required to revise this standard illustrates why EPA cannot lightly initiate major changes in the NAAQS.

EPA has replaced prevention of significant deterioration (PSD) increments, expressed as total suspended particulate matter, with increments expressed as PM₁₀, in an effort to make NAAQS and PSD increment measurements parallel. 58 Fed. Reg. 31622, 31623 (1993).

In mid-1996 EPA announced the likelihood that more stringent fine and coarse particulate primary NAAQS would be adopted. This announcement was based on new—and controversial—evidence of increased mortality and morbidity resulting from levels of particulate matter in urban areas that meet the existing NAAQS. 61 Fed. Reg. 29719, 29723 (June 12, 1996) (advanced notice of proposed rulemaking). As described in the text, EPA adopted the controversial NAAQS for particulate matter of small aerodynamic diameter in 1997. 62 Fed. Reg. 38651 (July 18, 1997).

⁸NRDC, Inc. v. EPA, 902 F.2d 962, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20891 (D.C. Cir. 1990), cert. denied, 498 U.S. 1082 (1991). The court rejected a variety of industry and environmental group challenges to the standards, including the claim that EPA was arbitrary and capricious because it failed to consider the adverse health effects that would result from unemployment allegedly to be caused by the new rules. The court did hold that EPA's indefinite postponement of a decision on whether to set a secondary standard to control acid deposition constituted final agency action and remanded the matter to EPA for an explanation of that action.

⁹The new suite of standards was promulgated on July 18, 1997, at 62 Fed. Reg. 38651 (July 18, 1997). They are collected at 40 C.F.R. §§ 50.6 and 50.7. EPA also has introduced new and complicated statistical methods of measuring compliance. EPA is currently reviewing both the 1997 PM_{2.5} standard and the 1987 PM₁₀ standard; the OAQPS staff paper reflects a good summary of that review process. The 1997 PM_{2.5} standards set an annual standard of 15 ug/m³, based on the three-year average of the annual arithmetic mean and a 24-hour standard of 65 ug/m³, based on the three-year average of the 98th percentile of 24-hour values. The revised PM standards were challenged by several parties. In May 1998, the D.C. Circuit Court upheld EPA's decision to establish a fine-particulate standard (PM_{2.5}) and found "ample support" for EPA's decision to regulate coarse particulates (PM₁₀), but vacated the 1997 PM₁₀ standards and remanded them to EPA because the PM₁₀ standard included both the finer PM_{2.5} particles and the particles less than 10 microns in diameter. *American Trucking Ass'n v. EPA*, 175 F.3d 1027, 1055-56 (D.C. Cir. 1999), *aff'd in part, rev'd in part*, *Whitman v. American Trucking Ass'n*, 531 U.S. 457, 121 S. Ct. 903 (2001). Thus, the 1987 PM₁₀ remained in place. The D.C. Circuit's decision on remand rejected all remaining challenges to the PM_{2.5} and ozone standards of 1997. *American Trucking Ass'n v. EPA*, 283 F.3d 355, 369 (D.C. Cir. 2002). EPA issued a proposed rule implementing the 1997 PM_{2.5} standards on Sept. 8, 2005.

¹⁰The 1997 ozone standards are based in substantial part on acute, transient decreases in lung function, experienced by active children, outdoor workers, and individuals with respiratory disease, when ozone levels are exceeded. 62 Fed. Reg. 38855, 38859 (July 18, 1997). These standards, after several challenges, were ultimately upheld in 2002. *American Trucking Ass'n v. EPA*, 175 F.3d 1027 (D.C. Cir. 1999), *reh'g granted in part and denied in part*, 195 F.3d 4 (D.C. Cir. 1999), *aff'd in part and rev'd in part*, *Whitman v. American Trucking Ass'n*, 531 U.S. 457, 121 S. Ct. 903 (2001), on remand to, *American Trucking Ass'n v. EPA*, 283 F.3d 355 (D.C. Cir. 2002).

¹¹A decrease in the ability of hemoglobin in the blood to transport oxygen is the health effect underlying the promulgation of the lead NAAQS. 43 Fed. Reg. 46246 (Oct. 5, 1978).

cal studies.¹² These types of studies use statistical methods to tie greater pollution from particulate matter to an increased incidence of hospital and emergency room admissions, school absences, work-loss days, and restricted-activity days.¹³ EPA was unable to identify a specific biological mechanism causing the problems it is trying to correct with these standards,¹⁴ yet the PM_{2.5} standard was upheld nonetheless. (See *supra* this section.)

In 2006, EPA once again revised the PM₁₀ and PM_{2.5} standards. Annual PM_{2.5} remained at 15 micrograms per cubic meter (ug/m³).¹⁵ EPA revised the 24-hour PM_{2.5} standard to 35 ug/m³. EPA also retained the 24-hour PM₁₀ standard but revoked the annual PM standard.

In 2009, the D.C. Circuit Court of Appeals remanded parts of the 2006 revised standards to EPA for reconsideration, because the agency had not adequately explained why the primary annual PM_{2.5} level (15 ug/m³) is sufficient to protect public health while providing an adequate margin of safety, as required by CAA § 109(b)(1). The Court also remanded the secondary standard for PM_{2.5}, holding that the agency had “unreasonably concluded that the NAAQS are adequate to protect the public welfare from adverse effects on visibility.”¹⁶ The Court denied petitions to review the primary daily PM₁₀ standard and EPA’s revocation of the primary annual PM₁₀ standard.

Ozone

In 2008, EPA tightened the ozone NAAQS, revising the primary 8-hour standard to 0.075 parts per million (from 0.08).¹⁷ EPA made the secondary standard identical to the primary standard. The revised standards require that the three-year average of the annual fourth-highest daily maximum 8-hour average at every ozone monitor is less than or equal to the level of the standard. EPA also made conforming changes to the Air Quality Index. In September 2009, EPA announced it would reconsider the 2008 ozone standard to determine whether a lower standard may be appropriate.

Lead

In October 2008, EPA significantly strengthened the lead NAAQS, revising the primary standard from 1.5 ug/m³ to 0.15 ug/m³, measured as total suspended particles (TSP).¹⁸ EPA set the secondary standard at the same level. EPA also strengthened the lead monitoring network by requiring monitor placement in areas with sources such as industrial facilities that emit one ton or more per year of lead and in urban areas with more than 500,000 people. Finally, EPA changed the calculation method for the averaging time from the current calendar-quarter system to a rolling three—month period with maximum form, evaluated over a three—year period.

Nitrogen Dioxide

In July 2009, EPA proposed revisions to the NO₂ NAAQS that would supplement

¹²62 Fed. Reg. at 38656–57.

¹³62 Fed. Reg. at 38853, 38656 (July 18, 1997).

¹⁴62 Fed. Reg. at 38853, 38657 (July 18, 1997). The Agency calls the “lack of demonstrated mechanisms” to support epidemiological findings an “important caution.” EPA has issued the Office of Air Quality Planning and Standard’s assessment of the policy implications of the latest scientific and technical information on particulate matter on June 30, 2005. “Review of the National Ambient Air Quality Standard for Particulate Matter: Policy Assessment of Scientific and Technical Information.”

¹⁵71 Fed. Reg. 61144 (Oct. 17, 2006).

¹⁶*Am. Farm Bureau Federation v. EPA*, 559 F.3d 512, 519 (D.C. Cir. 2009).

¹⁷73 Fed. Reg. 16436 (March 27, 2008).

¹⁸73 Fed. Reg. 66964 (Nov. 12, 2008).

the existing annual standard by establishing a short-term NO₂ standard of 1-hour daily maximum concentrations.¹⁹

Sulfur Dioxide

In November 2009, EPA proposed to strengthen the SO₂ NAAQS by revising the primary SO₂ standard to a level between 50 and 100 ppb, measured over 1-hour. EPA intends to consider changes to the secondary standard in a separate rulemaking.²⁰

Carbon Monoxide

EPA is currently reviewing the NAAQS for carbon monoxide.

The NAAQS are not goals, they are commands. They are the engine that directly drives much of the complex regulatory machinery established by the 1970 Amendments. As a result, every action concerning them is the focus of intense interest from states, the regulated community, and environmental and public health interests.

II. STATE IMPLEMENTATION PLANS*

§ 12:8 In general

The Clean Air Act provides two basic mechanisms for attaining and maintaining the air quality standards. One is uniform national emission limitations, based on advanced pollution control technologies, for new stationary and mobile sources of criteria pollutants. Every time an old car is junked and a new one leaves the showroom, and every time an old factory is torn down and a new one is built over the rubble, there will be less pollution emitted and in the air. The engine of economic growth is hitched to the pollution control program by new source standards and statutorily mandated review of proposed new sources, which are discussed in other sections of this chapter.¹ The second mechanism for achieving the air quality standards is the state implementation plan or SIP. The SIP is an elaborate analytical and legal construct whose primary function is to prescribe emission standards for pre-1970 stationary sources and controls on the use of cars and trucks that are necessary to attain and maintain the NAAQS. The SIPs take into account applicable new source standards and incorporate new source review programs required by the Act, but their stationary source and transportation control requirements are their key elements, because cutting pollution from older factories and modifying the traffic patterns that produce heavy smog in most American cities has proven critical to achieving the air quality standards.

State implementation plans are devised in an analytically and institutionally complex process. The country is divided into air quality control regions,² and each region must have a plan for each criteria pollutant.³ The Act prescribes different criteria for each region or portion of a region, depending on whether or not the air quality standards have been attained and the extent of the pollution in each nonat-

¹⁹74 Fed. Reg. 34404 (July 15, 2009).

²⁰74 Fed. Reg. 64810 (Dec. 8, 2009).

*By **Phillip D. Reed**, updated by **Alan J. Gilbert**

[Section 12:8]

¹See § 12:59 and § 12:86.

²See § 12:9 notes 1-4 and accompanying text.

³See § 12:11 note 1 and accompanying text.

tainment area.⁴ For example, in areas not in attainment of the NAAQS for a pollutant, the Act requires the plan to impose “reasonably available control technology (“RACT”)⁵ on “existing” sources of the pollutant, while in attainment areas, the plan need not require any controls on pre-1970 sources.⁶ In ozone nonattainment areas that exceed the NAAQS by less than 15 percent (Marginal Areas), RACT must be applied to only some of the categories of existing sources for which EPA has established control technique guidelines; in areas in which ozone levels exceed the NAAQS by 15 to 33 percent (Moderate Areas), RACT must be applied to any category for which EPA has established guidance and any major source not in such a category. It falls to the states to devise the plans, as the name indicates, but they must follow statutory and EPA criteria, which have become more extensive and precise over the years, and states must have their work approved by EPA.⁷ Once approved, the SIP is enforceable by EPA, and if the state does not produce an adequate plan, EPA is supposed to step in and write a plan itself.⁸ In all, the state implementation plan is as complex a regulatory mechanism as the human mind can devise.

The SIP requirements of the Clean Air Act have reached their present state in four stages. The 1967 Air Quality Act⁹ established the concept of implementation plans for heavily polluted “air quality control regions” (AQCRs), but left the job entirely to the states. In 1970 Congress amended the Clean Air Act¹⁰ to make state participation as close to mandatory as it could be in our federal system and to incorporate engineering and legal principles into the process so that SIPs would have quantified and enforceable emission standards for individual sources. The SIPs were to attain the NAAQS by no later than 1977. They failed. The 1977 Clean Air Act Amendments¹¹ took the SIP several steps further, extending the attainment deadlines to 1982 or 1987, mandating special SIP revisions for nonattainment areas, and tightening the screws on states unwilling to carry the load. The 1970 provisions governing SIPs stayed in force, and the new provisions were simply woven into the existing legal tapestry, sometimes without attention to the smooth meshing of old and new. Although there was significant progress, many SIPs again failed to meet Congress’ deadlines. In the 1990 Amendments, Congress again gave the states more time, but at the price of more stringent control requirements that appear to deprive the states of most of their remaining discretion regarding regulation of existing sources and require especially tough new source review and mobile source controls. The following pages trace the four stages of evolution of the state implementation plan.

§ 12:9 The 1967 Air Quality Act: The first small step toward federalization

In 1967 Congress tried to persuade the states to adopt programs to clean up their heavily polluted cities and industrial centers. The 1967 Air Quality Act first directed the federal government to designate air quality control regions (AQCRs) “based on

⁴See § 12:12 notes 1-7 and accompanying text, § 12:24 notes 1-11 and accompanying text.

⁵See § 12:24 note 7 and accompanying text.

⁶See § 12:14 note 11 and accompanying text.

⁷See § 12:17.

⁸See § 12:17 note 5 and accompanying text.

⁹Pub. L. No. 90-148, 81 Stat. 485 (1967), *reprinted in* United States Code Congressional and Administrative News p 515.

¹⁰Pub. L. No. 91-604, 84 Stat. 1713 (1970), *reprinted in* United States Code Congressional and Administrative News p 1954.

¹¹Pub. L. No. 95-95, 91 Stat. 686 (1977), *reprinted in* United States Code Congressional and Administrative News p 685.

jurisdictional boundaries, urban-industrial concentrations, and other factors including atmospheric areas necessary to provide adequate implementation of air quality standards.”¹ The Act expressly provided for the revision of AQCR designations where “necessary to protect the public health and welfare and after consultation with appropriate state and local authorities.”² Congress anticipated that the regions would generally be congruent with the major metropolitan areas of the country.³ The air quality control regions were to be the sole targets of federal pollution control efforts. The state government was to set a region-specific air quality standard for each area⁴ and then design and implement programs to attain the standards.

The federal government had an advisory role in this system. It issued air quality criteria, which identify known health effects of major pollutants at various concentrations, and developed guidance on what technologies were available to control various types of sources of the same pollutants.⁵ The states were to refer to this information in setting air quality standards for their AQCRs, but those standards were to balance health effects with the cost and feasibility of controlling the particular sources in those regions.⁶ Enforcement was through administrative or court actions against individual polluters, which proved very difficult to resolve. So many sources contributed to urban pollution that it was difficult to determine how much control to require of any individual source.⁷ The federal government could only enter the picture if states failed to promulgate air quality standards, there were interstate pollution problems jeopardizing public health, or a state’s governor requested federal intervention.⁸ To enforce the law, the federal government could invoke cumbersome conference proceedings or sue.⁹ The system proved ineffectual.

The main contribution of the 1967 Act was the establishment of AQCRs. The starting point for cleaning up air pollution (or any other kind for that matter) is figuring out where the pollution originates. This may not be an easy task, because the air pollution monitored at any point on any day may come from many sources, large and small, located at various distances from the monitor. Moreover, the sources responsible for the smog or smudge will change from day to day, depending on the weather and the prevailing winds. Despite these complications, it is possible to map out regions including both heavily polluted air and most of the sources typically causing it. When Congress first became serious about air pollution control in 1970 it

[Section 12:9]

¹1967 Air Quality Act § 107(a)(2), *reprinted in* United States Code Congressional and Administrative News p 522.

²1967 Air Quality Act § 107(a)(2), *reprinted in* United States Code Congressional and Administrative News p 522.

³See O’Fallon, Deficiencies in the Air Quality Act of 1967, 33 Law & Contemp. Probs. 275, 284 (1968).

⁴1967 Air Quality Act § 108, *reprinted in* United States Code Congressional and Administrative News p 523.

⁵1967 Air Quality Act § 107(b)(c), *reprinted in* United States Code Congressional and Administrative News p 522.

⁶1967 Air Quality Act § 108(c), *reprinted in* United States Code Congressional and Administrative News p 523.

⁷See Jorling, The Federal Law of Air Pollution Control, in Federal Environmental Law 1058, 1061-62 (1974); O’Fallon, Deficiencies in the Air Quality Act of 1967, 33 Law & Contemp. Probs. 275, 284 (1968).

⁸1967 Air Quality Act § 108(c)(4), *reprinted in* United States Code Congressional and Administrative News p 525.

⁹1967 Air Quality Act § 108(c)(4). See Jorling, The Federal Law of Air Pollution Control, in Federal Environmental Law 1058, 1061-62 (1974); O’Fallon, Deficiencies in the Air Quality Act of 1967, 33 Law & Contemp. Probs. 275, 284 (1968).

mandated the identification of AQCRs, areas combining heavy pollution and concentrations of the sources of that pollution, as the focal points of abatement efforts. That exercise in geography had begun with the 1967 Act and the resulting state and federal efforts to define the areas within which pollution made the air unhealthy to breathe or otherwise harmful to the public welfare.

§ 12:10 The 1970 Clean Air Act Amendments

The foundation of the 1970 Clean Air Act's new approach to air pollution control was built of three principles: nationalization, quantification, and accountability. The amendments nationalized the institutional machinery for regulating air pollution to make certain the national air quality goals would be met across the country despite regional differences in industry, meteorology, topography, automobile use, and economics. The new system is often referred to as a federal-state "partnership." If that is what it is, the federal government clearly is the senior partner, with control over the agenda and the purse strings. The 1970 Act also quantified the regulatory scheme in terms of air quality objectives, allowable emissions from individual polluters, and the time for compliance with both. The existence of quantified goals for individual and collective pollution control and finite deadlines for attaining them meant that the key players in the system, EPA, the states, and industry, could be held accountable. Accountable they were, with each subject to potentially severe sanctions for failure to comply. While any rational observer can see in the Act clear evidence that Congress did not expect nationalization, quantification, and accountability to be carried to their logical extremes, it is also clear that Congress expected these three principles to be applied rigorously.

The SIP provisions of the Clean Air Act play two critical roles. First, they bridge a gap between air quality standards and enforcement. Clean air became not just a goal, but an enforceable mandate. Second, the SIP process created new state-federal institutional machinery; the cumbersome, but powerful "partnership," held together with shared responsibilities and resources, and motivated by statutory deadlines and public accountability. The federal partner had the leverage to ensure the job was done and in accord with national priorities; the state partners had the resources and political sensitivity to get the job done at the local level.

The SIP was the missing link in air quality enforcement. Prior to 1970 the standard approach in federal pollution control law was to directly enforce environmental quality standards. That approach failed because enforcement must be source-specific, but environmental quality standards register aggregate pollution. Wherever more than one source contributes to pollution of a river or air basin, it is difficult to translate environmental quality goals into control requirements for individual sources through enforcement. Where tens, or hundreds, or thousands of sources contribute, it becomes impossible. The 1970 Clean Air Act took the specification of standards for individual polluters out of the enforcement process and put it into a new state planning process.

After EPA promulgates or revises a NAAQS, each state has a limited time in which to prepare a SIP or revisions to the existing plan, which explains how the state will go about attaining the standard and maintaining it thereafter.¹ There must be a separate plan for each criteria pollutant, and a separate plan for attainment and maintenance in each AQCR. The states may factor into their calculations the emission reductions that are likely to result from implementation of federal

[Section 12:10]

¹Clean Air Act § 110(a)(2), 42 U.S.C.A. § 7410(a)(2).

standards of performance for new “stationary” sources² (e.g., factories) and emission control requirements for new motor vehicles,³ but must add any necessary emission controls for stationary sources already in operation, preconstruction review for new factories, and limits on automobile use. This system was to take the guesswork out of pollution control decision making and enforcement. Quantitative air quality standards would be translated into quantitative emission limitations for individual sources.

The SIP requirements of the 1970 Amendments not only filled a gap in the enforcement process, they created a new institutional model, locking the states and federal government into a partnership that would get the clean air job done and with a degree of consistency across the land. Every step in the SIP process was governed by a deadline, culminating in deadlines for attainment of the NAAQS. To make sure the state programs lived up to these exacting standards, the Act required EPA oversight and approval of all key activities. To make the states jump through all these hoops, Congress provided program money and threatened federal takeover of air pollution control planning and enforcement. The 1970 Amendments were intended to force the states to control air pollution. The Supreme Court described the program as Congress “taking a stick to the states.”⁴ Federal control had replaced federal assistance. With regard to both enforcement and institutional issues, the SIP component of the Clean Air Act was a bold experiment and, interestingly, one Congress was not to repeat in subsequent federal pollution control laws.⁵ Indeed, in the 1990 Amendments, Congress signalled its serious disenchantment with the planning approach to air-quality control, building into the Clean Air Act the basic elements of the Clean Water Act’s regulatory scheme: federal emission control standards for existing sources as well as new ones, and federally enforceable operating permits. The SIPs will continue to play a major role in the Act’s implementation, but they may have been pushed off center stage.

§ 12:11 The 1970 Clean Air Act Amendments—Air quality control regions

The 1970 Clean Air Act Amendments kept the 1967 Act’s AQCR scheme, but revised its role and focus. The Amendments made three changes. First, they required that the rural areas not included in 1967 regions be designated as AQCRs as well.¹ The new Clean Air Act machinery had to be in place in all regions of the country if it were to see to the attainment and maintenance of the new NAAQS.² Second, the Amendments eliminated a provision for modifying AQCR boundaries, because cleanup efforts had been diverted by political efforts to gerrymander the boundaries

²Clean Air Act § 111, 42 U.S.C.A. § 7411.

³Clean Air Act § 202, 42 U.S.C.A. § 7521.

⁴*Train v. Natural Resources Defense Council, Inc.*, 421 U.S. 60, 64-65, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20264, 20265 (1975).

⁵For example, the Federal Water Pollution Control Act Amendments of 1971, Pub. L. No. 92-500, 86 Stat. 816 (1972), *codified at* 33 U.S.C.A. §§ 1251 to 1376, places primary emphasis on a system of federal effluent standards and permits, giving water quality planning a secondary role. *See* § 13:31. *See also* Pedersen, *Why the Clean Air Act Works Badly*, 129 U. Pa. L. Rev. 1059 (1981) (a penetrating analysis of the significance of this distinction for the implementation of the two acts). *See also* Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 *Yale L.J.* 1196 (1977) (insightful discussion of the problems of making the new institutional systems work).

[Section 12:11]

¹Clean Air Act § 107(b), 42 U.S.C.A. § 7407(b). States were allowed to continue the existing regions, but all other areas had to be divided into AQCRs as well.

²*See* § 12:1.

of AQCRs to spare specific sources.³ Third, the Amendments directed EPA to designate such interstate and major intrastate AQCRs as it deemed necessary or appropriate for attainment and maintenance of air quality standards, thus giving the federal government its first authority directly to define AQCRs.⁴ The AQCRs were important for functional reasons: They were to be the focus of SIPs.⁵ Where the boundaries were located would determine where the tough state programs needed to clean up NAAQS violations would take effect. The Act itself, however, did not prescribe any special programs for nonattainment AQCRs.

§ 12:12 The 1970 Clean Air Act Amendments—The scope and substance of a SIP

Under the 1970 Act, SIPs were required for all areas. EPA initially focused its attention on areas violating the NAAQS, but was forced to provide detailed guidance for clean areas as well. The thrust of § 110,¹ the basic SIP provision, was on cleaning up areas with more pollution than allowed by the primary NAAQS. All the SIPs had to do for clean areas, EPA concluded, was keep air quality from dropping below the secondary standards.² Environmentalists sued, and the Supreme Court eventually allowed to stand a district court ruling that the Act's purpose "to protect and enhance" air quality obligated EPA to do more in attainment areas, even though all the substantive provisions of the Act were directed toward enhancement.³ In response, EPA promulgated prevention of significant deterioration (PSD) rules limiting new sources and major modifications of existing sources,⁴ which formed the basis of a more complex PSD program established in the 1977 Amendments⁵ and, subsequently, a new set of PSD rules.⁶ The PSD program is covered in § 11.05 of this treatise. The attention on attainment areas also resulted in an expanded EPA requirement for air quality maintenance projections and programs for attainment

³The House Committee report on the 1977 Amendments noted that the 1970 Amendments had eliminated a provision in the 1967 Act allowing revision of regional boundaries. This was attributed to a tendency for haggling over the boundaries of AQCRs, which took more time and effort than deciding what to do about the pollution itself. H.R. Rep. No. 294, 95th Cong., 1st Sess. 312 (1977) [hereinafter cited as 1977 House Committee Report], *reprinted in* 3 Cong. Research Serv., 95th Cong., 2d Sess., A Legislative History of the Clean Air Act Amendments of 1977 2779 (Comm. Print 1978) [hereinafter cited as 1977 Legislative History].

⁴Clean Air Act § 107(c), 42 U.S.C.A. § 7407(c).

⁵The 1970 Amendments required states to establish a plan for each AQCR. Clean Air Act § 107(c), 42 U.S.C.A. § 7407(c). Clean Air Act § 110(a)(1).

[Section 12:12]

¹42 U.S.C.A. § 7410.

²40 C.F.R. § 51.12(b)(1970) ("In any region where measured or estimated ambient levels of a pollutant are below the levels specified by an applicable secondary standard, the State implementation plan shall set forth a control strategy which shall be adequate to prevent such ambient pollution levels from exceeding such secondary standard.").

³*Sierra Club v. Ruckelshaus*, 344 F. Supp. 253, 2 Env'tl. L. Rep. (Env'tl. L. Inst.) 20262 (D.D.C. 1972), *aff'd per curiam*, 2 Env'tl. L. Rep. (Env'tl. L. Inst.) 20656 (D.C. Cir. 1972), *aff'd* by an evenly divided Court *sub nom. Fri v. Sierra Club*, 412 U.S. 541, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20684 (1973).

⁴39 Fed. Reg. 42510 (1974).

⁵Clean Air Act §§ 160 to 169, 42 U.S.C.A. §§ 7470 to 7479. *See* § 12:89. This program addresses both new sources and major modifications of existing sources if they will emit pollution above certain thresholds.

⁶The new EPA rules, 40 C.F.R. § 52.21, were upheld in *Alabama Power Co. v. Costle*, 606 F.2d 1068, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20400 (D.C. Cir. 1979), modified, 636 F.2d 323, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 10001 (D.C. Cir. 1979).

areas.⁷ Despite these considerations, most SIP attention focused on nonattainment areas. As such, the programs were like those envisioned by the 1967 Air Quality Act, focusing state regulatory attention on the heavily-polluted AQCRs, but with much stronger pressure on the states to actually develop plans.⁸

Section 110 sets out a list of substantive and procedural requirements for SIPs.⁹ As enacted in 1970, the Act envisioned that states would rely on emission limitations for stationary sources, transportation control plans to cut pollution from cars and trucks, and land use control plans to ensure that the siting of new facilities did not jeopardize attainment.¹⁰ The Act gave the states some flexibility, allowing “other measures” as necessary. EPA interpreted this language to allow a number of alternatives, including economic incentives.¹¹ The SIP must also provide for necessary source and ambient monitoring, enforcement, and staffing. Under the 1970 Amendments, putting these pieces together for a SIP was a three-step process.

§ 12:13 The 1970 Clean Air Act Amendments—The scope and substance of a SIP—Defining the problem

The first step, defining the air quality problem, was begun by determining how much more pollution was in the air than the standards allow. The state also had to project growth over the next ten years and identify areas expected to exceed the NAAQS in the future as a result.¹ This exercise, performed by checking air quality monitoring data or using models to estimate air quality, told the state how big a job awaited.

The state next had to figure out where the excessive pollution came from. To do so, it made an “inventory” of sources by counting the big ones, such as power plants or smelters, and counting or estimating the number of little ones, like boilers in apartment buildings.² Next, the state estimated the amount of emissions from all

⁷The 1990 Amendments place even more emphasis on maintenance of the NAAQS, especially in areas redesignated from nonattainment to attainment. Clean Air Act § 175A, 42 U.S.C.A. § 7505a.

⁸The Act imposed deadlines by which state plans had to be approved and threatened EPA promulgation if states were not responsive. *See* § 12:17 notes 1–5 and accompanying text.

⁹The provision as originally enacted is reprinted in United States Code Congressional and Administrative News p 1959.

¹⁰Pub. L. No. 91-604, § 4, 84 Stat. 1676 (1970) (new Clean Air Act § 110(a)(2)(B)), *reprinted in* United States Code Congressional and Administrative News p 1960 (SIPs had to include “emission limitations . . . and such other measures as may be necessary . . . including, but not limited to, land-use and transportation controls.”).

¹¹40 C.F.R. § 51.1(n) (1977) (“Control strategy means . . . measures . . . including, but not limited to . . . Federal or State emission charges or taxes or other economic incentives of disincentives.”). The same language is included in the current rules. 40 C.F.R. § 51.1(n)(2). Despite this authorization, states have never sought to use these measures and EPA has not encouraged them to do so. These provisions have been moved to 40 C.F.R. § 51.100(n).

[Section 12:13]

¹40 C.F.R. § 51.12(e) (1977). The requirement is still in force. 40 C.F.R. § 51.12(e).

²40 C.F.R. § 51.13(f) (1977). In 1977, Appendixes D, E, and F provided example lists of the information to be included in emission inventories. Emission inventories were only required for example regions, areas with relatively severe problems chosen to demonstrate the efficacy of the state’s control strategies. *See also* 40 C.F.R. § 51.13(f) (1985). Thus, the EPA rules allowed the states to limit the most difficult analytical tasks to a subset of the regions covered by the SIP. The current regulations still require SIPs to contain a detailed inventory of emissions from point and area sources. 40 C.F.R. § 51.114. Appendix A to Subpart A contains tables of the data that must be reported for various types of sources and contains minimum point source reporting thresholds.

The importance of emission inventories as a basis for reasoned air quality planning is emphasized to a greater degree in the 1990 Amendments. *See, e.g.*, Clean Air Act § 182(a)(1), 42 U.S.C.A. § 7511a(a)(1) (requiring submission of “a comprehensive, accurate, current inventory of actual

these sources, using any monitoring data that might be available³ and estimating the rest with various engineering calculations and rules of thumb.⁴

§ 12:14 The 1970 Clean Air Act Amendments—The scope and substance of a SIP—Emission limitations

Once the pollutants and sources of concern were identified, the states next were to develop control strategies. As noted above, control strategies fall into three categories: emission limits for stationary sources, transportation control plans for motor vehicles, and new source review. The last two types of strategies are discussed at length elsewhere in this treatise.¹ The remainder of this section focuses principally on control strategies for existing stationary sources.

Although states are not limited to this strategy, emission limitations were the basic building block of stationary source control strategies in the first twenty years of implementation. Emission limits typically are set for broad categories of sources. In theory, a state regulatory agency could tailor a package of emission limits for each criteria pollutant and each AQCR, designing the rules to just attain the NAAQS at the lowest aggregate cost.² The agency would have to have reams of data on the cost and feasibility of control at each of the hundreds or thousands of individual sources, however, and that data is not readily available.³ The search for an administratively feasible method of setting emission limits usually led to uniform standards for broad categories of sources, based on general notions of what is technologically feasible for those sources and not too costly. The broader the category, the easier the process, which could follow either of two tracks.

The state might take an aggressive approach, setting the categorical standard at a level associated with highly efficient controls. Flexibility could be built into such a system by allowing the regulated community to make a case for lower standards for subcategories with special technological or economic difficulties during the standard-setting process or by allowing variances for hard-hit individual sources.

An alternative to the aggressive SIP approach was to set the categorical standard at the level of the least common denominator to ensure that it was “reasonable” across the board. So long as the emission reductions resulting from imposition of the standard would produce attainment of the NAAQS, the Act did not dictate either

emissions from all sources” in marginal ozone nonattainment areas). Emissions inventories have proven more difficult to complete than originally contemplated by the states. *See* Inside EPA’s Clean Air Rep., July 28, 1994, at 3.

³40 C.F.R. part § 51 (1977), Apps. D, E, F.

⁴EPA used to publish air pollution guidelines for estimating emissions from various categories of small point sources and area sources in the appendices of Part 51. 40 C.F.R. part § 51 (1977), Apps. D, E, F. Guidance for estimating emissions in the SIP can now be found online at the website for EPA’s Emission Inventory Program, at <http://www.epa.gov/ttn/chief/eiip/>.

[Section 12:14]

¹*See* §§ 12:86, 12:143.

²This possibility has been noted by environmental economists. *See, e.g.*, A. Kneese & C. Schultze, *Pollution, Prices, and Public Policy* 88 (1975).

³To do the job right, the agency would have to know the current emissions and contribution to air pollution and the costs of achieving various levels of pollution reduction at each significant source in a region. With the help of a mathematical model of the entire system, the planners could come up with a least-aggregate-cost control strategy. The job could be simplified somewhat by looking at categories of sources with similar control costs instead of at individual sources, but it takes a significant amount of information to know what sources to put in what category. The SIP process requires the same kinds of information, but can focus the analysis on much smaller subsets of sources, for example, those in the example regions. *See* § 12:13.

approach.⁴ The SIP also could vary the categorical standards from one AQCR to the next, imposing tighter standards where pollution is heaviest.⁵

The 1970 Act could have been interpreted to allow individual source variances from categorical SIP standards only under the exacting standards of § 110(f).⁶ EPA, however, read § 110(a)(3) as requiring it to approve any SIP revision, whether for an individual source or an entire category, so long as the change would not cause a violation of the NAAQS.⁷ Section 110(f) was, in EPA's view, limited to variances extending beyond the attainment deadline. In one of the pivotal early Clean Air Act cases, the Supreme Court agreed with EPA.⁸ The result is a fundamental distinction between the Clean Air Act and the Federal Water Pollution Control Act.⁹

The 1970 Act has been referred to as "technology-forcing."¹⁰ As to existing stationary sources, however, whether and how much force to apply was left largely up to

⁴The Act requires only that the SIP demonstrate attainment and maintenance and satisfy certain other procedural and substantive criteria. Within those general constraints, the states may decide how to allocate the burdens of achieving the Act's goals. *Union Elec. Co. v. EPA*, 427 U.S. 246, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20570 (1976).

⁵The SIP regulations required states to identify priority air quality control regions, those with the most severe pollution, and to devote the largest share of planning resources to those regions. 40 C.F.R. § 51.3 (1977). States also imposed more stringent standards on sources located in priority regions. *See, e.g.*, COMAR 26.11.06.02, Maryland's SIP (imposing a zero visible emission standard in certain regions of Maryland).

⁶As enacted in 1970, § 110(f) provided that a governor could request EPA to extend the compliance deadline for a stationary source or class of mobile sources beyond the attainment deadline for up to a year upon a showing of (1) good faith efforts to comply, (2) the unavailability of necessary control technology, (3) the application of interim controls that would reduce the impact on public health, and (4) the public interest in continued operation of the source or class of source. *See* United States Code Congressional and Administrative News p 1962.

⁷That section, 42 U.S.C.A. § 7410(a)(3), required EPA to approve SIP revisions that satisfied the requirements of § 110(a)(2) for new SIPs. EPA initially concluded that it had to approve any SIP relaxation that did not jeopardize timely attainment and that § 110(f) was limited to cases where the extension would delay attainment. 40 C.F.R. § 51.32(f) (1973), *Train v. Natural Res. Def. Council, Inc.*, 421 U.S. 60, 71, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20264, 20266 (1976). Environmentalists sued when EPA approved a provision of the Georgia SIP adopting the EPA reading of § 110(a)(3) and allowing categorical individual source revisions so long as they did not interfere with attainment. The Fifth Circuit invalidated the SIP approval, ruling that § 101(a)(3) only applied to revisions of categorical standards; changes in individual source limits could only be approved under § 110(f). *Natural Res. Def. Council, Inc. v. EPA*, 489 F.2d 390, 4 Env'tl. L. Rep. (Env'tl. L. Inst.) 20204 (5th Cir. 1973), *rev'd sub nom.* *Train v. Natural Res. Def. Council, Inc.*, 421 U.S. 60, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20264 (1976).

⁸*Train v. Natural Res. Def. Council, Inc.*, 421 U.S. 60, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20264 (1976). The Court analyzed the relevant provisions of § 110 and concluded that EPA had correctly perceived a fundamental division of labor between the federal agency and the states intended by Congress. It reasoned that Congress gave EPA primary responsibility for setting and ensuring the attainment of the NAAQS to EPA but left it to the states to decide how to shape their SIPs to achieve that end. Thus, any revision of a SIP, whether for an individual source or a category of sources, must be approved by EPA under § 110(a)(3) if the revision does not impair attainment and maintenance of the NAAQS. Section 110(f) is intended, not for all individual source variances, but only for those that will affect attainment. So long as the SIP continued to demonstrate attainment and maintenance, the state is free to modify its SIP as it chooses, within the procedural and substantive constraints of § 110, and EPA is powerless to object.

⁹The FWPCA utilizes the variance approach rejected in *Train v. Natural Resources Defense Council, Inc.* Once a categorical standard is in place, individual sources must comply with it unless they can qualify for one of several narrowly circumscribed variances. A state is powerless to relax a categorical standard for an individual source just because compliance with that standard is not necessary to achieve the applicable water quality standard. *See, e.g.*, *Consolidation Coal Co. v. Costle*, 604 F.2d 239, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20511 (4th Cir. 1979); *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20284 (D.C. Cir. 1978) (categorical effluent limitations promulgated by EPA properly preclude variances based on ability of receiving waters to handle added pollution without violating water quality standards).

¹⁰*See, e.g.*, *Train v. Natural Res. Def. Council, Inc.*, 421 U.S. 60, 87–88, 5 Env'tl. L. Rep. (Env'tl. L.

the states.¹¹ EPA invited a degree of consistency by publishing information on “reasonably available” control technologies for criteria pollutants,¹² but states were free to use other standards. The result of the process was development of a bewildering variety of stationary source SIP provisions.¹³

Inherent in the concept of an emission limitation is the notion that the amount of pollutants emitted will be limited. Large emission sources cannot avoid violations of the air quality standards by cutting emissions only when meteorological conditions likely will direct the pollution toward air quality monitors or concentrate it under a temperature inversion. Nor may such sources rely on tall smokestacks to disperse pollution.¹⁴

EPA came to this interpretation slowly. Initially, it deemed tall stacks and intermittent control strategies (ICS) acceptable as emission limitations.¹⁵ While that interpretation was in force (and in the years leading up to the 1970 Amendments), hundreds of powerplants and smelters were equipped with very tall smokestacks to avoid the high cost of removing sulfur from their flue gas.¹⁶ After having its policy rejected by the courts in 1974,¹⁷ EPA adopted the principle that sources with post-1970 stacks taller than “good engineering practice” would normally dictate must be regulated as though they had shorter stacks, unless tall stacks were the best available technology or where alternative controls (*i.e.*, scrubbers) were “economically unreasonable or technologically unsound.”¹⁸ In 1977 Congress tightened the ban on tall stacks further, but the stack height issue was not put to rest.¹⁹

Inst.) 20264, 20271 (1976).

¹¹*Train v. Natural Res. Def. Council, Inc.*, 421 U.S. 60, 91, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20264, 20271 (1976) (“so long as the national standards are being attained and maintained, there is no basis in the present Clean Air Act for forcing further technological developments”).

¹²*See, e.g.*, 40 C.F.R. part 51 App. B (1977) (“Examples of Emission Limitations Attainable with Reasonably Available Technology” promulgated in 1971 at 36 Fed. Reg. 23398, 25233.).

¹³For example, for manufacturing sources located in the urban/industrial AQCRs of the state, the Maryland SIP set a particulate standard of 0.05 grains per standard cubic foot of dry exhaust gas (gscf) for confined sources built after 1972. For such sources built before 1972, the standard was a sliding scale in which allowable emissions varied with the size of the manufacturing process, COMAR 22.11.06.03, with separate standards for glass manufacturing and iron and steel production plants. COMAR 22.11.10.04; 26.11.25. In contrast, New Jersey required all manufacturing sources, except glass manufacturers, to achieve either 99 per cent removal of particulates or a 0.02 gscf standard. N.J. Admin. Code § 7:27-6.2.

¹⁴Clean Air Act § 123, 42 U.S.C.A. § 7423.

¹⁵*See Sierra Club v. EPA*, 719 F.2d 436, 439, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21001, 21001, 21002 (D.C. Cir. 1983), cert. denied sub nom. *Ala. Power Co. v. Sierra Club*, 467 U.S. 1248 (1984).

¹⁶*Natural Res. Def. Council, Inc. v. EPA*, 489 F.2d 390, 394–396, 4 Env'tl. L. Rep. (Env'tl. L. Inst.) 20204, 20210–20211 (5th Cir. 1974), rev'd on other grounds sub nom. *Train v. Natural Res. Def. Council, Inc.*, 421 U.S. 60, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20532 (1975) (EPA properly rejected Kentucky SIP that allowed tall stacks and ICS to attain the NAAQS). EPA's 1976 guidance barred tall stacks unless practicable alternative technologies were not available or were too expensive. In 1977, Congress amended the Act to flatly prohibit use of tall stacks. Clean Air Act § 123, 42 U.S.C.A. § 7423. EPA's rules implementing the new provision have been controversial. *See Sierra Club v. EPA*, 719 F.2d 436, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21001 (D.C. Cir. 1983), cert. denied sub nom. *Ala. Power Co. v. Sierra Club*, 467 U.S. 1248 (1984) (overturning EPA's tall stacks rules as too lenient). EPA's modified rules also were generally upheld, but were remanded in part. *Natural Res. Def. Council, Inc. v. Thomas*, 838 F.2d 1224, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20519 (D.C. Cir. 1988), cert. denied, 488 U.S. 901 (1988).

¹⁷*Natural Res. Def. Council, Inc. v. EPA*, 489 F.2d 390, 394–96 (5th Cir. 1974), rev'd on other grounds sub. nom., *Train v. Natural Res. Def. Council, Inc.*, 421 U.S. 60, 95 S.Ct. 1470 (1975).

¹⁸*See* 40 C.F.R. § 51.118.

¹⁹*See, e.g.*, 54 Fed. Reg. 40001 (1989) (postponing a decision on whether SIP provisions for 15 Georgia powerplants had to be revised to remove credits for tall stacks, because applicable provisions

§ 12:15 The 1970 Clean Air Act Amendments—The scope and substance of a SIP—Modeling

The last step in the SIP process is to use air quality models to demonstrate that the emission reduction produced by the control strategies will attain and maintain the air quality standards in each AQCR. The analysis also must demonstrate that projected growth will not cause the region to slip out of attainment.¹ There are two levels of models in terms of their sophistication. The first level consists of relatively simple techniques to estimate air quality impact from a specific source or catalogs of sources. These are called screening models. These techniques can eliminate more detailed modeling for sources that clearly will not cause or contribute to ambient air concentrations in excess of either a NAAQS or allowable PDS increment. The second level is more sophisticated and includes more detailed analysis of chemical and physical atmospheric processes; these are called refined models. EPA's guidance sets out its preferred modeling techniques in 40 C.F.R. Part 51, Appendix W, but this guidance also contains minimum requirements for all air quality models. Use of alternative models is acceptable if they meet the minimum requirements.² Some of the models utilized are Simple-Terrain Stationary Source Models, which have both screening techniques and refined modeling techniques. Models used in complex terrains likewise contain both screening and refined techniques. Specific models have been developed to address ozone, PM_{2.5}, PM₁₀, CO, NO₂, lead, and visibility with particular focus on complex issues like regional transport.³ These complicated computerized mathematical models can take into account the relative locations of air quality monitors and major sources, as well as prevailing weather conditions, to provide more precise estimates of the air quality impacts of the control strategies.⁴

If emission limitations, transportation controls, and new source review are SIP building blocks, then air quality modeling is the engineering science that explains how to put them together into a viable structure. Some might argue, however, that modeling is more sorcery than science. Computer modeling is an extremely complex and imprecise tool, and its accuracy diminishes with the number of sources, the distance between source and monitor, and the variation in the terrain.⁵ The use of modeling in designing and evaluating SIPs is an inviting target for criticism because of its unavoidable imprecision, but the courts generally have recognized that modeling is the only tool EPA and the states have to carry out the air quality analyses required by the Act and have deferred to the agencies' technical expertise on these

of EPA rules had been remanded). Intermittent control strategies live on, though in limited circumstances. *See* 40 C.F.R. § 69.12 (fuel switching utilized as a sulfur dioxide control at the Cabras and Piti power plants on Guam).

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¹The requirement to demonstrate the adequacy of the SIP to achieve timely attainment is currently at 40 C.F.R. § 51.112. 40 C.F.R. Part 51, Appendix W contains guidelines on air quality models. The SIP also had to show that factors like stack heights, topography, and spatial distribution of emissions would not preclude attainment. *See* 40 C.F.R. Part 51, Subpart G and Appendix W.

²40 C.F.R. Part 51, Appendix W.

³40 C.F.R. Part 51, Appendix W.

⁴The state was free to choose its own diffusion model, subject to EPA approval, and EPA identified two acceptable alternatives in the regulations. 40 C.F.R. § 51.13(c)(3) (1977). The diffusion models can predict air quality impacts at multiple locations and therefore are not tied to the worst location, as are rollback models.

⁵*See* Cleveland Elec. Illuminating Co. v. EPA, 572 F.2d 1150, 1162-63, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20312 (digest) (6th Cir. 1978), cert. denied, 439 U.S. 910 (1978) (description of the RAM model used by EPA for estimating the air quality effects of sulfur dioxide emitting sources in a region). *See also* 40 C.F.R. Part 51, Appendix W (providing guidelines for complex terrain models).

issues.⁶

The “scientific” approach for translating a general air quality standard into enforceable, source-specific emission limitations is riddled with imprecision. Each calculation requires major assumptions and can be well off the mark. Errors at different stages might cancel each other out, but also could be additive. Moreover, the system is so complex that it is easy to manipulate pieces of it to come up with any desired result. To make it work, EPA had to develop detailed planning and modeling guidance, whose own complexity is a bar to understanding the process and a barrier to innovation.⁷

§ 12:16 The 1970 Clean Air Act Amendments—The scope and substance of a SIP—Enforcement

In addition to the control strategies and attainment demonstrations themselves, SIPs had to identify legal mechanisms to impose the emission limits on individual sources. These might be regulations, permits, orders, or some combination of these measures.¹

§ 12:17 The 1970 Clean Air Act Amendments—The SIP process: The federal/state partnership at work

The SIP development process is quite an undertaking for the states, but the

⁶Cleveland Elec. Illuminating Co. v. EPA, 572 F.2d 1150, 1162-63, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20312 (digest) (6th Cir. 1978), cert. denied, 439 U.S. 910 (1978). *See also* Hawaiian Elec. Co. v. EPA, 723 F.2d 1440, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20328 (9th Cir. 1984); Republic Steel Corp. v. Costle, 621 F.2d 797, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20287 (6th Cir. 1980). *But see* Chemical Mfrs. Ass'n v. EPA, 28 F.3d 1259, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21210 (D.C. Cir. 1994) (designation as a “high risk” chemical overturned under the hazardous air pollutant program because the model used by EPA bears no rational relationship to the behavior of the chemical).

⁷*See, e.g.*, Schoenbrod, Goals Statutes or Rules Statutes: The Case of the Clean Air Act, 30 UCLA L. Rev. 740, 778 (1983) (available data indicates that between 1973 and 1978, ambient concentrations of sulfur dioxide declined by 20 percent, but emissions declined much less. One possible explanation is manipulation of monitoring information achieved by relocating monitors); 58 Fed. Reg. 38815 (1993) (air quality modeling guidelines incorporated as Appendix W to 40 C.F.R. part 51).

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¹Clean Air Act § 110(a)(2)(C), (D), 42 U.S.C.A. § 7410(a)(2)(C), (D). The 1970 Act did not specify how the emission limitations were to be imposed. The process posed a serious administrative challenge for many states. A permit system might be the logical option, but for those states that followed EPA's recommendation and made SIPs effective immediately, *see* Train v. Natural Resources Defense Council, Inc., 421 U.S. 60, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20264 (1976), hundreds or even thousands of permits would have to be issued very quickly. Some states dealt with this problem by requiring all sources to be registered and establishing permit programs only for construction or modification of (including installation of controls on) sources over a given size (*e.g.*, New Jersey). Environmental Law Institute, The Response to State and Local Regulations on Emissions to the Atmosphere 29-31 (1979) (unpublished manuscript available at Environmental Law Institute). By treating installation of control equipment as a modification, states in the latter category could bring every source requiring installation of controls, *i.e.*, most sources with significant air pollution problems, into the permit system, but on a staggered schedule. Sources were not considered in violation of the SIP until the state had determined that their emissions exceeded the applicable limits. The air pollution control agencies would then issue orders to define the control systems needed to satisfy the SIP emission limits. Thus, although, in theory, the SIP was effective immediately, in practice, the emission limits did not become effective with regard to an individual facility until the state enforcement staff got around to determining what controls, if any, were required, and issuing an order. Sources not large enough to require permits could still be regulated through the enforcement process if they proved to be problems. The administrative job was trimmed down to manageable proportions, particularly if the SIP was designed only to require the largest sources to install controls. For example, when Connecticut began implementing the Clean Air Act, over 10,000 sources were registered, but less than 400 were in violation of the SIP. Connecticut Enforcement Project, Economic Law Enforcement, Volume II: Air Pollution, II-7 (1975).

Clean Air Act does not require them to do it alone. Indeed, the Act puts EPA in full charge of the SIP process. It creates an administrative system for implementing the state-federal partnership that recognizes state sovereignty, but gives EPA theoretical control of every key decision. The result is a system of double regulation, intrusive federal oversight, and heavy federal pressure to conform. This scheme is cumbersome, slow, and limited in effectiveness, but it did move air pollution control regulation far beyond the level it had reached under earlier federal laws. The 1990 Amendments revised various elements of the SIP process in response to some of the problems that EPA, the states and regulated industry experienced with the original version over the 20 years leading up to those Amendments. The discussion below addresses the SIP process as it existed prior to the 1990 Amendments, but identifies by use of the present tense, those aspects of the older system that still apply.

The states develop their SIPs under their own administrative procedures, though the Act requires that they give notice and hold public hearings before adopting final plans.¹ States must submit their SIPs to EPA for review and approval. EPA must approve the plans if they demonstrate attainment of the NAAQS within the statutorily prescribed deadline.² The 1970 Act gave EPA four months to approve or disapprove a SIP submittal.³ If EPA approves a SIP or revision, the federal agency promulgates it as a federal rule, making the SIP equally enforceable by EPA, the states, and private citizens.⁴ If it disapproved the rule, EPA's only recourse appeared to be to promulgate and enforce a substitute rule itself.⁵

The dual state-federal adoption of every SIP and every SIP revision is extremely cumbersome. Each must go through the full panoply of rulemaking. The SIP process has come to be known as a "double-key" system,⁶ and each key can take months or years to turn. The federal system is complex, but many state systems are even more complicated; for example, some states' rules require legislative approval.⁷ This procedural duplication, intended to safeguard the Act's national goals from too much federalist diversity, sometimes afflicted the SIP process with procedural rigidity bordering on rigor mortis.

The 1970 Act gave most of its attention to promulgation of SIPs, but also contemplated that SIPs would be revised from time to time. The SIPs themselves

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¹Clean Air Act § 110(a)(1), (2), 42 U.S.C.A. § 7410(a)(1), (2).

²Clean Air Act § 110(a)(2), 42 U.S.C.A. § 7410(a)(2).

³Clean Air Act § 110(a)(2), 42 U.S.C.A. § 7410(a)(2). It was not clear from the statute, but the four-month deadline generally was applied to SIP revisions as well as to original submittals. *See, e.g., City of Seabrook v. EPA*, 659 F.2d 1349, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 21058 (5th Cir. 1981). The Supreme Court held that the four-month deadline in old § 110(a)(2) did not apply to revisions. *Gen. Motors Corp. v. United States*, 496 U.S. 530, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20959 (1990). The decision on that point is moot, because the 1990 Amendments specify a twelve-month deadline for EPA action on SIP revisions. *See* § 12:34.

⁴Clean Air Act § 113, 42 U.S.C.A. § 7413, gives EPA the authority to enforce any "applicable implementation plan"; Clean Air Act § 304, 42 U.S.C.A. § 7604, authorizes "citizens" to do likewise. Old Clean Air Act § 110(d), 42 U.S.C.A. § 7410(d), defined "applicable implementation plan" as "the implementation plan, or most recent revision thereof, which has been approved under subsection (a) of this section or promulgated under subsection (c) of this section and which implements the requirements of this section."

⁵Prior to the 1990 Amendments, the Clean Air Act § 110(c), stated that "the Administrator shall" promulgate a substitute SIP or SIP provision on disapproving all or part of a state's submittal. *See* § 12:35 for a discussion of the role of the federal implementation plan under the 1990 Amendments.

⁶*See, e.g., Pedersen, Why the Clean Air Act Works Badly*, 129 U. Pa. L. Rev. 1059, 1060, 1078-93 (1981).

⁷Connecticut Enforcement Project, Economic Law Enforcement, Volume II: Air Pollution, IV-8 (1975) (SIP enforcement rules approved by Standing Legislative Regulations Review Committee.).

are to provide for revision when the NAAQS are changed, when new control measures become available, or when EPA notifies the state that the previously-approved SIP plan is inadequate to attain the NAAQS or otherwise violates the Act.⁸ States may revise SIPs for categories of sources or individual sources⁹ and any revision of the requirements of the plan, whether a minor procedural change, a tightening of emission limits for major source categories, or a variance for one plant, requires a formal SIP revision through the cumbersome double-key promulgation process. The SIP revision paperwork load can swamp EPA at times.¹⁰ It also may discourage innovation, since a source coming up with a better method for controlling its emissions would have to make it through the SIP revision swamp to get the change approved.¹¹ Bureaucratic ingenuity can eliminate some of this red tape,¹² but the Clean Air Act does not leave even the most creative bureaucrat much leeway.¹³

§ 12:18 The 1970 Clean Air Act Amendments—Implementing the 1970 amendments

In the early 1970s, the SIP process moved along reasonably well where it called for controls that were not too expensive or disruptive, but broke down whenever it came up against strong resistance. States were unwilling or unable to do what had to be done to clean up ailing basic industries or to wipe out big-city smog. EPA quickly found that the power Congress had given it in the Act was deficient in several respects. The Agency could not compel a state to adopt a SIP that EPA deemed adequate. Nor could EPA easily take over the SIP workload. Moreover, on several occasions Congress itself pulled the rug out from under the Agency when EPA did try to get tough.

The 1970 SIPs were a significant step forward. They were submitted to EPA in relatively timely fashion.¹ They imposed workable new emission control requirements on many source categories.² They began to forge the federal-state-local

⁸Clean Air Act § 110(a)(2)(H), 42 U.S.C.A. § 7410(a)(2)(H).

⁹*Train v. Natural Res. Def. Council, Inc.*, 421 U.S. 60, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20264 (1976).

¹⁰During the late 1970s and early 1980s, when EPA was reviewing nonattainment area SIP revisions for hundreds of areas across the country, hundreds of applications for emission trades or "bubbles," in addition to the normal flow of individual source and categorical revisions, SIP revisions could languish in EPA two years awaiting approval. Pedersen, *Why the Clean Air Act Works Badly*, 129 U. Pa. L. Rev. 1059, 1079 (1981).

¹¹*See, e.g.*, Schoenbrod, *Goals Statutes or Rules Statutes: The Case of the Clean Air Act*, 30 UCLA L. Rev. 740 (1983).

¹²EPA developed two mechanisms for speeding review of SIP revisions. "Parallel processing" allowed EPA to begin its review of the revision while the state process was still under way. *See* § 12:39 note 1. "Generic bubble rules" are state rules for approving all SIP modifications involving emission trades of a given type. *See* § 12:51 note 8 and accompanying text. Once EPA approves the state's generic rule, the state may allow trades under the rule without EPA approval, although EPA retains authority to audit the state's implementation of its generic rule. For areas that failed to meet 1982 or 1987 attainment deadlines, EPA curtailed use of generic bubble rules in 1988 and 1990 SIP calls. 53 Fed. Reg. 34500 (1980); 55 Fed. Reg. 30973 (1990). *See* § 12:31.

¹³For a thorough explanation of the statutory constraints on efficient implementation of the Clean Air Act, *see* Pedersen, *Why the Clean Air Act Works Badly*, 129 U. Pa. L. Rev. 1059, 1080-85 (1981).

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¹Pedersen, *Why the Clean Air Act Works Badly*, 129 U. Pa. L. Rev. 1059, 1073-74 (1981).

²Technologies that could effectively control the criteria pollutants or their precursors were in use in a number of industries by 1970. The 1970 SIPs caused the spread of such controls, both within industries in which they already were in use, and to other industries as well. Large coal and oil fueled powerplants were equipped with electrostatic precipitators to control particulates. Numerous medium-sized industrial point sources of particulates were controlled with "baghouses." Many utilities,

institutional framework necessary for effective national air pollution control regulation.³ All this did not add up to the giant step Congress had mandated, however.

§ 12:19 The 1970 Clean Air Act Amendments—Implementing the 1970 amendments—Transportation control plans

The SIP process broke down where the pollution problems addressed required major corrective action that would impinge heavily on economically fragile major industries or on the general public. The toughest nut for SIPs to crack was transportation control planning. Transportation control plans (TCPs) were needed to control smog—the criteria pollutant originally named “photochemical oxidants”—which is formed in the atmosphere as complex reactions cause hydrocarbons and nitrogen oxides to react in the presence of sunlight. Smog has many components, the principal one known to be harmful being the oxidant ozone. Regulating the problem is hampered by the fact that the reactions producing smog are not fully understood.¹ Cars and trucks, which are the principal means by which the life blood of most American cities flows, are major sources of hydrocarbon and nitrogen oxide emissions. In 1970 every major U.S. city had a significant smog problem. Many urban areas also had harmful concentrations of carbon monoxide from motor vehicle emissions.² The new car emission standards were expected to take much of the smog out of the air, but they were delayed, putting pressure on SIP transportation control plans to handle the entire problem.³ In some areas the problem was so severe that

particularly in the eastern states, which had burned high-sulfur fuels were required to shift to low-sulfur oil or coal. 5 Air Pollution 678 (A. Stern, ed. 1977).

³The Clean Air Act took an established, cooperative institutional network of local health agencies, state air pollution control agencies, and federal agencies and forced them to work together in an aggressive, highly technical regulatory program. The 1970 Clean Air Act was in part a product of the recognition by air pollution control professionals at all levels of government that none of them could tackle the problem effectively on its own. *See, e.g.*, 1 Congressional Research Service, A Legislative History of the Clean Air Act Amendments of 1970 1231-320 (1974) [hereinafter cited as *1970 Legislative History*] (reprinting testimony from federal officials about existing institutional capabilities and needs should there be a national regulatory program). In response, Congress forged a federal-state-local partnership that was a logical solution on paper, but which expected a good deal from each partner. Development of SIPs for areas with air pollution in excess of the NAAQS was a high-stakes, politically sensitive job for state and local agencies; a job that had to be performed with imperfect analytical tools, under the more or less watchful eye of “the feds” at EPA. The state and local agencies got federal program grants, but also were dependent on EPA for technical guidance on a host of issues. For its part, EPA had to climb a mountain of paperwork and swim an uncharted sea of technical questions, all while fighting dozens of lawsuits filed by industry and environmentalists. The learning curve for all concerned with the initial SIP process was steep indeed. Despite the problems, the partnership has, for the most part, held together. The institutional expertise and working relationships that were forged in the initial SIP process made possible the more ambitious pollution control efforts mandated by the 1977 and 1990 Amendments.

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¹Ozone is not emitted; it is cooked up in the atmosphere where “precursor” pollutants, volatile organic compounds (VOC) and oxides of nitrogen (NO_x), react in sunlight to produce a complex photochemical soup. The exact nature of the reactions and the likely effects of various reductions in VOC and NO_x emissions on the amount of ozone produced are not well understood. For a comprehensive collection of data on the formation and health and environmental impacts of ozone pollution, *see* Environmental Criteria and Assessment Office, EPA, Air Quality Criteria for Ozone and Other Photochemical Oxidants (Aug. 2005) (Second External Review Draft).

²In 1972, forty-two AQCRs had violations of the 8-hour primary air quality standard for carbon monoxide. Council on Environmental Quality, 1974 Annual Report 274 (1974).

³The 1970 Amendments directed EPA to set and enforce mobile source standards that by 1975 would achieve a 90 percent reduction in hydrocarbon and carbon monoxide emissions below the levels allowable in 1970 cars, but allowed EPA to extend the deadline for compliance for one year. Clean Air

even with new car controls, severe transportation controls were also needed.⁴

Concerned over the implications for TCPs of delays in new car standards, EPA initially allowed states to omit TCPs from their SIPs.⁵ A court decision required EPA to reverse this policy.⁶ When the Agency was forced to promulgate a TCP for Los Angeles, the proposal initially would have required gas rationing to cut motor vehicle use by 80 percent, but EPA later backed down.⁷ EPA also ran into bitter political opposition when it tried to require measures like parking surcharges and bridge tolls to cut commuter traffic into smog-laden cities. Congress curtailed EPA's authority to require such measures in 1974, but removed restrictions in 1990.⁸ In the 1970's, the Agency declined to step in under the authority of § 110(c) when many states failed to submit adequate TCPs,⁹ but pushed its authority to its logical limit by trying to use the enforcement authority of § 113¹⁰ to compel states to promulgate adequate plans.¹¹ Courts of appeals split on whether the Tenth Amendment precluded EPA from thus overriding state sovereignty; the Supreme Court took the case, but dropped it in a 4-4 deadlock.¹² EPA retreated from the constitutional confrontation and awaited new authority then in the works in Congress.¹³

§ 12:20 The 1970 Clean Air Act Amendments—Implementing the 1970 amendments—Steel and utilities

If smog and carbon monoxide are primarily associated with mobile source pollu-

Act Amendments of 1970, Pub. L. No. 91-604, § 6(a), 81 Stat. 499 (§ 202(a)). In 1973, EPA put off the 90 percent control requirement, substituting interim standards some three to four times higher. 38 Fed. Reg. 11355 (1973). Since the first plans had to demonstrate attainment by 1975, the delay in the new car standards forced the states to show greater reductions in their transportation control plans.

⁴Perhaps the most extreme example is the transportation plan promulgated by EPA for Los Angeles under court order. *City of Riverside v. Ruckelshaus*, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20043 (C.D. Cal. 1972). The proposed SIP required gas rationing and other measures designed to cut vehicle miles traveled in the area by 80 percent. 38 Fed. Reg. 2194 (1973).

⁵36 Fed. Reg. 15486 (1971); 37 Fed. Reg. 10842, 15080, 23085 (1972). See Schoenbrod, *Goals Statutes or Rules Statutes: The Case of the Clean Air Act*, 30 UCLA L. Rev. 740 (1983), for a discussion of the background of these rules.

⁶*Natural Res. Def. Council v. EPA*, 475 F.2d 968, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20155 (D.C. Cir. 1973).

⁷EPA announced its decision not to require gas rationing at 41 Fed. Reg. 45565 (1976).

⁸See Clean Air Act § 110(c)(2)(B), 42 U.S.C.A. § 7410(c)(2)(B) (precluding EPA from requiring parking surcharge provisions in SIPs and voiding any such requirements already included in SIPs); Clean Air Act § 110(c)(2)(C), 42 U.S.C.A. § 7410(c)(2)(C) (authorizing EPA to suspend parking supply management provisions in SIPs). These are the codified provisions of Pub. L. No. 93-319, 88 Stat. 256 (1974). The 1990 Amendments deleted those provisions. Clean Air Act § 110(a)(2), as amended by § 101(b) of the 1990 Clean Air Act Amendments.

⁹See Schoenbrod, *Goals Statutes or Rules Statutes: The Case of the Clean Air Act*, 30 UCLA L. Rev. 740, 770 (1983).

¹⁰42 U.S.C.A. § 7413.

¹¹EPA issued enforcement orders under § 113 to compel several states to adopt transportation control measures deemed essential to ensure attainment. See, e.g., *Maryland v. EPA*, 530 F.2d 215, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20651 (4th Cir. 1975), vacated sub nom. *EPA v. Brown*, 431 U.S. 99, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20375 (1977) (EPA lacks authority to use § 113 to compel states to enact SIP provisions.).

¹²*EPA v. Brown*, 431 U.S. 99, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20375 (1977) (since EPA concedes that its regulations concerning using § 113 to compel states to enact SIP provisions need revision, a decision is unnecessary; decisions below vacated and remanded).

¹³The 1977 Amendments adopted a different means of giving EPA leverage to persuade states to adopt SIP provisions deemed necessary by the federal agency: funding sanctions instead of enforcement sanctions to encourage states to enact acceptable SIPs. See Pub. L. No. 95-95, § 129(c), 91 Stat. 686 (1977), codified as a note to Clean Air Act § 172, 42 U.S.C.A. § 7502.

tion, then particulate matter and sulfur dioxide are primarily associated with heavy industry and energy generation from fossil fuels. In 1970, both were relatively well understood problems with established control strategies for most source categories. One exception was fugitive particulate emissions from industrial sources without smokestacks, such as steel mill coke ovens and blast furnace casthouses, because the emissions could not be collected for removal in precipitators, baghouses or scrubbers.¹ For sulfur dioxides, the problems were economic and political, as well as technical. In the early 1970s technologies to remove sulfur from combustion gases at power plants were unproven and extremely expensive.² Since all sulfur coming out the stack originated in the coal or oil burned, a technologically simple solution was to shift to low-sulfur fuels. However, states with large coal mining industries and an abundance of high sulfur coal balked at making the switch. While many eastern seaboard states shifted utilities from coal to low sulfur oil, midwestern states with high-sulfur-coal mining industries shifted to tall smokestacks to disperse the emissions.³

Major problems with particulate and sulfur dioxide SIPs were not as widespread as the TCP problems, and EPA responded differently. It tried out its § 110(c) authority with the 1972 Ohio SIP for SO₂ and part of the 1972 Idaho SIP.⁴ It took over three years to promulgate the federal provisions, however, and each was in court two years longer.⁵ The federal limitations for Ohio ended up being looser than the state limitations in important respects.⁶ EPA had little interest in § 110(c) thereafter.

§ 12:21 The 1970 Clean Air Act Amendments—Implementing the 1970 amendments—Deadlines

The SIP process takes place under intense pressure as a result of the planning and attainment deadlines. The statutory schedules for interim steps are linked to the attainment deadlines, which in theory is nearly absolute. The 1970 Amendments provided for an extension of up to two years in a state's attainment deadline for sources or categories, if the control technology necessary to attain the standard was unavailable and provided the state did what it could to control emissions from those sources in the interim.¹ One other emergency suspension also was available.²

Although the 1970 Act discussed getting into attainment on time in some detail, it did not address what was to happen to states that had not done so when the clock

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¹For a description of the technical problems associated with controlling emissions from coke ovens, *see* *Bethlehem Steel Corp. v. EPA*, 782 F.2d 645, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20268 (7th Cir. 1986).

²For an excellent review of the status of flue gas desulfurization technology in this country in the early 1970s and the gradual evolution of that technology into a realistic regulatory option, *see* D. Currie, *Air Pollution: Federal Law and Analysis* 3-24-3-28 (1981).

³*Sierra Club v. EPA*, 719 F.2d 436, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21001 (D.C. Cir. 1983).

⁴*See* Pedersen, *Why the Clean Air Act Works Badly*, 129 U. Pa. L. Rev. 1059, 1084 n.81 (1981).

⁵*See* *Cleveland Elec. Illuminating Co. v. EPA*, 572 F.2d 1150, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20312 (6th Cir. 1978); *Bunker Hill Co. v. EPA*, 572 F.2d 1286, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20681 (9th Cir. 1977), reh'g denied, 572 F.2d 1305, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20144 (9th Cir. 1977).

⁶*See* *Cleveland Elec. Illuminating Co. v. EPA*, 572 F.2d 1150, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20312 (6th Cir. 1978).

[Section 12:21]

¹Clean Air Act § 110(e), 42 U.S.C.A. § 7410(e), repealed, Pub. L. 101-549, Title I, § 101(d)(4), (5), 104 Stat. 2409 (Nov. 15, 1990).

²Clean Air Act § 110(f), 42 U.S.C.A. § 7410(f).

struck twelve. The overall thrust of the SIP program implied that the consequences would be severe. There was no apparent authority in the statute to allow construction of new sources in areas that missed the deadline;³ variances for existing sources probably could only be issued under the exacting standards of § 110(f);⁴ and sources violating applicable emission limits might be forced to close.⁵ Congress did not expressly prescribe such dire consequences, however. This oversight might be attributed to extreme optimism, unfortunate oversight, or a hypocritical desire to leave the really hard choices in air pollution control to EPA.⁶ More likely, however, Congress did not want to blunt the action- and technology-forcing thrust of the Act with too many escape valves and intended to amend the Act if the deadlines became a problem.

As the final 1977 deadline for attainment drew near, EPA was forced to confront whether it could allow new sources to be built in areas that would miss the deadline. EPA decided that it could, provided the new sources were equipped with very efficient controls and “offset” the new emissions by securing at existing sources in the area, larger emission reductions than the law already required. This Offset Interpretive Ruling⁷ was the first in a long series of clever compromises by which EPA tried to give the statutory deadlines clout without letting the consequences become so severe as to destroy political support for the Act.⁸

By the mid-1970s it was clear that the Clean Air Act had come a long way and that it had a long way to go. The Act had forced an unprecedented amount of regulatory activity⁹ and considerable expenditure on air pollution control.¹⁰ By its own lights, however, it was a dismal failure. Virtually every urban area of the country was in violation of at least one air quality standard, and extensions to 1977, the last date by which the 1970 Act contemplated attainment, would not change the tally.¹¹ The SIP mechanisms for forcing state action had stalled when faced with political opposition based on economic hardship or widespread public inconvenience. Applying hindsight, one commentator attributes the problem to Congress’ eagerness to

³As enacted in 1970, § 110(a)(4), required (and requires) each SIP to include measures to ensure that sources subject to new source performance standards not be constructed in areas in which they would contribute to failure to attain and maintain the NAAQs.

⁴Old § 110(f) was the only provision allowing extensions for individual sources beyond the attainment deadline, and was limited to sources that could not comply because of the lack of effective control technology and which would take interim measures to minimize emissions. *See Train v. Natural Res. Def. Council, Inc.*, 421 U.S. 60, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20264 (1975).

⁵Clean Air Act § 113(b), 42 U.S.C.A. § 7413(b), authorizes district courts to restrain violations of SIPs. In theory, this authority could extend to shutting down a source that was located in an area violating the NAAQS and that could not by any other means comply with the SIP after the attainment deadline. *See S. Rep. No. 1196*, 91st Cong., 2d Sess. 2 (1970), *reprinted in 1 1970 Legislative History*, *supra* note 86, at 402 (“The protection of public health . . . will require major action throughout the Nation. . . . Some facilities may be closed.”).

⁶Schoenbrod, *Goals Statutes or Rules Statutes: The Case of the Clean Air Act*, 30 UCLA L. Rev. 740 (1983).

⁷41 Fed. Reg. 55524 (1976).

⁸*See* §§ 12:28 to 12:31.

⁹By mid-1977, EPA had promulgated new source performance standards for twenty-four major industry categories and all fifty states had SIPs, most of which represented significant extensions of preexisting regulatory programs. *Cf.* 40 C.F.R. pt. 52 (1971); 40 C.F.R. pt. 52 (1977).

¹⁰The Council on Environmental Quality estimated 1976 air pollution control expenditures at \$9.4 billion. Council on Environmental Quality, 1977 Annual Report 328 (1977).

¹¹In late 1977, of the 105 urban areas in the country with populations in excess of 200,000, only one—Honolulu—was in attainment for the oxidant standard, and one—Spokane—was unclassifiable due to insufficient data. Council on Environmental Quality, 1978 Annual Report 63 (1978).

divert to EPA the hard political consequences of Congress' grand clean air promises.¹² Whatever the cause of the 1970 Act's failure to cure air pollution, Congress' response in 1977 was more of the same medicine.

§ 12:22 The Clean Air Act Amendments of 1977

When it became clear that the Clean Air Act “stick” Congress had given EPA in 1970 had broken without persuading the states to take steps that achieved the air quality goals, Congress went for the brass knuckles. It extended the attainment deadlines, but raised the stakes for failure to meet them, and strengthened EPA's hand in the SIP partnership. The 1977 Amendments laid atop the 1970 structure two new levels of stationary source regulatory requirements, a nonattainment program and a prevention of significant deterioration program. Indeed, the Amendments were a whole new program; “a detailed, technical, complex, and comprehensive response to a major social issue.”¹ Because Congress simply attached the new programs to the existing framework, the pieces did not all fit.

§ 12:23 The Clean Air Act Amendments of 1977—Changes in Clean Air Act geography

The new programs added in 1977 needed new geographical foundations. Congress directed EPA and the states to lay out the new areas over the existing grid of AQCRs. The Amendments directed the states to submit lists of “air quality control regions or portions thereof” that would not timely come into compliance with primary or secondary air quality standards, areas that would be in compliance, and areas that were unclassifiable due to lack of reliable air quality data.¹ EPA had to approve the lists quickly, with appropriate modifications.² EPA decided that the tight schedule for developing and implementing the new state implementation plans required by the 1977 Amendments overrode the need for notice and comment on nonattainment area designations, a decision that lost the Agency a number of court battles, but did get the ball rolling.³

The 1977 Act provided two means of changing the initial listing, a new section

¹²See Schoenbrod, Goals Statutes or Rules Statutes: The Case of the Clean Air Act, 30 UCLA L. Rev. 740, 752 (1983).

[Section 12:22]

¹*Chevron, USA Inc. v. NRDC*, 467 U.S. 837, 848, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20507, 20510 (1984).

[Section 12:23]

¹Clean Air Act § 107(d)(1), 42 U.S.C.A. § 7407(d)(1).

²Clean Air Act § 107(d)(2), 43 U.S.C.A. § 7407(d)(2).

³Five courts of appeal overturned EPA's expedited designations as violations of the Administrative Procedure Act's notice and comment requirement, 5 U.S.C.A. § 553. *U.S. Steel Corp. v. EPA*, 649 F.2d 572, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20621 (8th Cir. 1981); *W. Oil & Gas Ass'n v. EPA*, 633 F.2d 803, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20985 (9th Cir. 1980); *N.J. Dep't of Env'tl. Prot. v. EPA*, 626 F.2d 1038, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20963 (D.C. Cir. 1980); *City of Waco v. EPA*, 620 F.2d 84, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20545 (5th Cir. 1980); *Sharon Steel Corp. v. EPA*, 597 F.2d 377, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20316 (3d Cir. 1979). Two circuits upheld the decisions, accepting EPA's argument that the Clean Air Act's short schedule for revising nonattainment area SIPs gave it good cause to depart from the notice and comment path. *Cincinnati Gas & Elec. Co. v. Costle*, 632 F.2d 14, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20897 (6th Cir. 1980); *General Motors Corp. v. Costle*, 631 F.2d 466, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20922 (6th Cir. 1980); *Columbus & S. Ohio Elec. Co. v. Costle*, 638 F.2d 910, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20895 (6th Cir. 1980); *Republic Steel Corp. v. Costle*, 621 F.2d 797, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20287 (6th Cir. 1980); *U.S. Steel Corp. v. EPA*, 605 F.2d 283, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20560 (7th Cir. 1979), cert. denied, 444 U.S. 1035, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20081 (1980) (dissent by Justices Rehnquist, White, and Powell, who would grant certiorari to resolve split in circuits).

107(d)(5),⁴ authorizing changes in the status of listed areas, and section 107(e),⁵ allowing redesignation of the boundaries of air quality control regions; both processes were to be started by the states. The status of areas on the section 107 list could be upgraded, as the air in the areas is cleaned and surpasses the NAAQS, or downgraded as air quality worsens and falls below the levels specified in the standards.⁶ Although EPA had the final word on the nonattainment area decisions, it could not subsequently change the designation of areas unilaterally.⁷ Congress corrected this oversight in the 1990 Amendments.⁸ As to redesignating AQCR boundaries, in the 1970 Amendments Congress had tried inflexible boundaries;⁹ in 1977 it went back to allowing changes in the borders of AQCRs and nonattainment areas, but only where necessary for efficient program administration.¹⁰ Though Congress expected the states to take the lead in revising the list of nonattainment areas, EPA has veto power.¹¹

Under the 1977 Amendments, nonattainment areas could be AQCRs or smaller units, but generally no smaller than counties. EPA policy required including the area with polluted air and all areas with significant concentrations of sources contributing to that pollution, even if they were miles away.¹² EPA's policy generally was upheld by courts ruling that states were authorized to include in nonattain-

⁴42 U.S.C.A. § 7407(d)(5). The section authorizes states to review and revise the list, subject to EPA approval.

⁵42 U.S.C.A. § 7407(d)(5). The section authorizes a state, again with EPA approval, to remap the boundaries of an air quality control region for purposes of efficient and effective air quality management.

⁶Clean Air Act § 107(d)(5) indicates that revisions are to be made "as appropriate," which would include both upgrading and downgrading. Revisions in the list are to follow the same procedures as promulgation of the initial listing.

⁷EPA claimed authority to reclassify areas after promulgating the original list. The Seventh Circuit held, however, that EPA's one chance to second-guess the states' proposed designations was the sixty days specified in old Clean Air Act § 107(d)(2). *Bethlehem Steel Corp. v. EPA*, 723 F.2d 1303, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20090 (7th Cir. 1983).

⁸Clean Air Act § 107(d)(3), as added by § 101(a) of the 1990 Amendments. The fact that EPA could not initiate the process of downgrading areas to nonattainment status was an anomaly in a statute that otherwise seems designed to give the federal government whatever power it constitutionally could wield to force the states to clean up their nonattainment areas. EPA had only one chance to force a state to list an area as nonattainment. Where EPA made a mistake the first time or an area regressed out of attainment, EPA could not force redesignation. If states did not relabel such areas nonattainment, much of the 1977 Amendments' powerful machinery could not be brought to bear. States must prepare Part D SIPs for nonattainment areas. *See* § 12:24 notes 9–11 and accompanying text for a description of the stringent requirements such SIPs must satisfy. If an area not designated nonattainment nonetheless violates the air quality standards, EPA required the state to upgrade its SIP under Clean Air Act § 110(a)(2)(H)(ii), but EPA could not impose funding sanctions if the state did not comply, since the sanctions only applied to Part D SIPs. Since that machinery is politically unpopular, states could not on their own be expected to call upon it themselves.

⁹The report of the House Committee on the 1977 Amendments noted that the 1970 Amendments had eliminated a provision in the 1967 Clean Air Act allowing revision of the boundaries of air quality control regions due to the "delays and pointless haggling over administrative boundaries that characterized the period prior to enactment of the 1970 act." H.R. Rep. No. 294, 95th Cong., 1st Sess. 312 (1977), *reprinted in* 3 Cong. Research Serv., 95th Cong., 2d Sess., *A Legislative History of the Clean Air Act Amendments of 1977* 2779 (Comm. Print 1978).

¹⁰H.R. Rep. No. 564, 95th Cong., 1st Sess. (1977), *reprinted in* 3 Cong. Research Serv., 95th Cong., 2d Sess., *A Legislative History of the Clean Air Act Amendments of 1977* 503 (Comm. Print 1978). ("Revisions of boundaries for purposes other than improving the capacity of air pollution control agencies to perform authorized functions would be inconsistent with this provision and should not be approved by the Administrator.")

¹¹*See* 42 U.S.C.A. § 7407(d)(5).

¹²For pollutants other than ozone, EPA established the following criterion for mapping the boundaries of nonattainment areas: "(5) a nonattainment area should be as small as possible while

ment areas attainment counties located upwind that included significant sources and could not use section 107(d)(5) or section 107(e) to delete such counties from those nonattainment areas.¹³ There was no clear measure of how much pollution must emanate from an upwind attainment county to warrant its inclusion in a downwind nonattainment area, but the state bore the burden of demonstrating that the contribution from the upwind county was not significant. Congress responded to these developments in the 1990 Amendments by automatically expanding the boundaries of certain nonattainment areas.¹⁴

§ 12:24 The Clean Air Act Amendments of 1977—Changes in the substance of the SIP requirements

The 1977 Amendments extended the attainment deadlines to 1982, or to 1987 for areas for which states could demonstrate such serious smog problems that the 1982 deadline was unattainable despite imposition of all reasonably available control measures.¹ The Act directed states to identify areas not in attainment of the NAAQS and to submit lists of such areas to EPA for approval. The price states had to pay for the attainment extension was the revision of SIPs to impose new control requirements for nonattainment areas.

The 1977 nonattainment area SIP revision program has four parts scattered about the Act. The first was the section 107 process for identifying nonattainment areas, which is discussed above. Second was the requirement in section 110 that states adopt SIP revisions for nonattainment areas.² Third, the 1977 Amendments added a new Part D³ to the statute, setting out in some detail what the nonattainment area SIP revisions had to include. Fourth, the Amendments specified incremental deadlines for state adoption and federal review and promulgation of the

encompassing all areas of expected violation and all sources of significant impact of those violations.” 46 Fed. Reg. 55724 (1981). In 1983, EPA issued guidance on ozone nonattainment areas, which it later summarized as follows: “[T]he guidance indicates that urban ozone nonattainment areas should include all of the urbanized area and all of the significant Volatile Organic Compound (VOC) sources responsible for the downwind ozone problem.” 49 Fed. Reg. 24130 (1984).

¹³*Ill. State Chamber of Commerce v. EPA*, 775 F.2d 1141, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20016 (7th Cir. 1986); *Ohio v. Ruckelshaus*, 776 F.2d 1333, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20013 (6th Cir. 1985), cert. denied, 476 U.S. 1169 (1986). *W. Oil & Gas Ass'n v. EPA*, 633 F.2d 803, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20985 (9th Cir. 1980).

¹⁴The Act automatically expands the boundaries of any ozone nonattainment areas in the worst three classifications to encompass the entire metropolitan statistical area in which the area is located if the boundaries already are not that broad. Clean Air Act § 107(d)(4)(A)(iv), 42 U.S.C.A. § 7407(d)(4)(A)(iv).

[Section 12:24]

¹Old Clean Air Act § 172(a).

²The requirement that states revise their SIPs for the areas identified as nonattainment was spelled out, somewhat indirectly, in a new section 110(a)(2)(I) of the Act. Section 110(a)(2) did not explicitly require that all SIPs include Part D provisions for nonattainment areas. Instead it requires them to include new source permit programs and appeared to give the states a choice of banning major new sources and modifications or preparing full Part D SIPs. However, a state choosing not to submit a Part D SIP should also lose substantial federal funding. Old Clean Air Act § 176, 42 U.S.C.A. § 7576, precluded issuance of federal air program or transportation grants for nonattainment air quality control regions that required transportation control plans, lacked approved Part D SIPs after the applicable deadline, and were not making reasonable efforts to submit them. Thus, while the Part D SIP could be viewed as a voluntary addition to the basic SIP, in practical terms it was virtually mandatory. See *City of Seabrook v. EPA*, 659 F.2d 1349, 1352, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 21058 (“The 1977 Amendments . . . required each state to revise its implementation plan for these ‘nonattainment areas.’”).

³Clean Air Act §§ 171–178, 42 U.S.C.A. §§ 7501–7508.

revised plans in a section codified as note to Part D.⁴ Part D empowered EPA to impose funding cuts on states that did not develop adequate Part D SIPs, but did not discuss whether or when EPA was to step in to take over the process. In sum, the Amendments made an already complicated statute even more complex.

The substantive requirements for nonattainment area SIPs were detailed in Part D. Old section 172(a) required that the plans demonstrate a strategy for attainment of primary air quality standards by December 31, 1982, or, under certain circumstances with respect to ozone and carbon monoxide, December 31, 1987. Section 172(b) listed eleven essential substantive and procedural components of nonattainment area SIP revisions,⁵ including a new source permit program, the details of which were spelled out in old section 173.⁶ Nonattainment area SIP revisions also had to, at a minimum, impose reasonably available control technology standards on

⁴The revised SIPs had to be submitted by January 1, 1979, and approved by July 1, 1979, (for 1982 deadline areas) or submitted by July 1, 1982, (for 1987 areas). Clean Air Act § 172 note, 42 U.S.C.A. § 7502 note.

⁵Old Clean Air Act § 172(b), set out the eleven requirements as follows:

- (1) be adopted by the State (or promulgated by the Administrator under section 7410(c) of this title) after reasonable notice and public hearing;
- (2) provide for the implementation of all reasonably available control measures as expeditiously as practicable;
- (3) require, in the interim, reasonable further progress (as defined in section 7501(1) of this title) including such reduction in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology;
- (4) include a comprehensive, accurate, current inventory of actual emissions from all sources (as provided by rule of the Administrator) of each such pollutant for each such area which is revised and resubmitted as frequently as may be necessary to assure that the requirements of paragraph (3) are met and to assess the need for additional reductions to assure attainment of each standard by the date required under subsection (a) of this section;
- (5) expressly identify and quantify the emissions, if any, of any such pollutant which will be allowed to result from the construction and operation of major new or modified stationary sources for each such area;
- (6) require permits for the construction and operation of new or modified major stationary sources in accordance with section 7503 of this title (relating to permit requirements);
- (7) identify and commit the financial and manpower resources necessary to carry out the plan provisions required by this subsection;
- (8) contain emission limitations, schedules of compliance and such other measures as may be necessary to meet the requirements of this section;
- (9) evidence public, local government, and State legislative involvement and consultation in accordance with section 7504 of this title (relating to planning procedures) and include (A) an identification and analysis of the air quality, health, welfare, economic, energy, and social effects of the plan provisions required by this subsection and of the alternatives considered by the State, and (B) a summary of the public comment on such analysis;
- (10) include written evidence that the State, the general purpose local government or governments, or a regional agency designated by general purpose local governments for such purpose, have adopted by statute, regulation, ordinance, or other legally enforceable document, the necessary requirements and schedules and timetables for compliance, and are committed to implement and enforce the appropriate elements of the plan;
- (11) in the case of plans which make a demonstration pursuant to paragraph (2) of subsection (a) of this section—
 - (A) establish a program which requires, prior to issuance of any permit for construction or modification of a major emitting facility, an analysis of alternative sites, sizes, production processes, and environmental control techniques for such proposed source which demonstrates the benefits of the proposed source significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification;
 - (B) establish a specific schedule for implementation of a vehicle emission control inspection and maintenance program; and
 - (C) identify other measures necessary to provide for attainment of the applicable national ambient air quality standard not later than December 31, 1987.

⁶The eleven program elements of Clean Air Act § 172(b) did not necessarily supercede the program

existing sources, and to demonstrate that “reasonable further progress” would be made toward attainment in the years before the deadline.⁷ The 1977 Amendments exacted an extra regulatory price for extension of the attainment deadline to 1987. States with extensions had to establish mobile source inspection and maintenance (I/M) programs and other added control measures.⁸ Each Part D SIP revision also had to include a tough new-source-review program prohibiting construction of major new sources in nonattainment areas without construction permits.⁹ The revised SIPs had to condition permit issuance on: (1) either emission reductions from existing sources, beyond those already required, sufficient to offset the new emissions, or SIP provisions establishing sufficient extra reductions to achieve a “margin for growth”; (2) compliance with “the lowest achievable emission rate” by the new source; (3) compliance with applicable regulations by all other sources in the state operated by the owner of the new source; *and* (4) implementation of the SIP for the nonattainment area in question.¹⁰

EPA’s review of Part D SIPs was governed by the procedures and schedule established in the 1970 Amendments. The 1977 Amendments directed states to “adopt and submit” SIP revisions for their designated nonattainment areas by January 1, 1979. Although the Act is not clear on this point, section 110(a)(2) governed the EPA review, requiring the Agency to “approve or disapprove” the Part D SIP submission within four months of submittal.¹¹ Congress tried to make the states pay heavily for their failure to meet the applicable deadline for Part D SIPs. Major new source construction in nonattainment areas was automatically banned when the 1979 deadline passed, and EPA could cut off major sources of federal financial assistance, including highway funding.¹²

§ 12:25 Implementing the 1977 amendments

The nonattainment area program placed heavy burdens on the states and EPA. The pollution problems left to be addressed were those that were the least well understood, the most expensive or politically difficult to correct, or both. Ozone nonattainment was a large share of the problem. Stationary sources of hydrocarbon emissions, which contribute significantly to smog, had been virtually unregulated by most 1970 SIPs.¹ Many such sources were small and numerous, such as dry cleaners, print shops, and gas stations, and difficult to control. These sources, along with oil refineries and the other major stationary sources of hydrocarbon emissions became the primary target of the new reasonably available control technology (RACT) requirement. New car emission controls obviously had not solved the smog

elements listed in Clean Air Act § 110(a)(2). Even though the Clean Air Act § 172 list was comprehensive and includes some items also listed in Clean Air Act § 110, Congress added some provisions for nonattainment SIPs to Clean Air Act § 110, for example, old Clean Air Act § 110(a)(2)(I). Thus, analysis of the new statutory scheme required the reader to refer back and forth between the two parts, and on some issues, to make major assumptions about how they should be reconciled.

⁷Old Clean Air Act § 172(b), (3).

⁸Old Clean Air Act § 172(b)(11)(B).

⁹This program is discussed in depth in the section on new source review. *See* § 12:86.

¹⁰Old Clean Air Act § 173.

¹¹*See* § 12:17 note 3.

¹²Old Clean Air Act § 110(a)(2)(I) (construction ban); Clean Air Act § 176, 42 U.S.C.A. § 7506.

[Section 12:25]

¹Most 1970 SIPs relied principally on new car emission limits and transportation control plans to attain the ozone (photochemical oxidant) standard. It was only in 1977 that EPA began to issue control technique guidelines (CTGs) for stationary hydrocarbon sources. *See* Council on Environmental Quality, 1978 Annual Report 68 (1978) (list of the industrial categories for which EPA was preparing or had prepared hydrocarbon CTGs by mid-1978).

problem and some of the biggest guns of transportation control had been taken out of the arsenal.² Congress' response still concentrated on mobile source controls but shifted to the question of ensuring the on-the-road effectiveness of the expensive catalytic converters it had "persuaded" Detroit to install in millions of new cars under the 1970 Act. In 1970, Congress had not required testing and correction of the performance of motor vehicle emission controls once cars were out of the manufacturers' hands and on the road, perhaps out of fear the job would be administratively difficult and politically unpopular. But in 1977, when it was clear that new car emission controls and watered down transportation control plans were not enough to dispel the smog shrouding most of urban America, the legislators directed EPA to bite the bullet and force states that needed until 1987 to clean up ozone nonattainment areas to inspect cars in use to ensure that they continued to meet the emission standards.

§ 12:26 Implementing the 1977 amendments—Federal standards for existing stationary sources and on the road vehicles

The 1977 Amendments departed dramatically from the 1970 pattern of uniform national standards for the new and varied state standards for the old. It was not that the concepts of federal RACT or of I/M programs were novel.¹ The difference was that EPA now had to force these concepts down the throats of states that were not independently interested.

The RACT requirement for existing sources in nonattainment areas created a legal foundation for uniform federal standards for old facilities, many of which had been unregulated under 1970 SIPs that had put the entire burden of attainment on new source controls and TCPs. Congress did not give much attention to this requirement because most of its concern was with new sources in nonattainment areas.² The statute does not define the term. By implication, the states would decide what these measures would be in the normal SIP process. However, by issuing control technique guidelines (CTGs) for categories of stationary hydrocarbon sources, EPA injected a measure of national uniformity in the system.³ EPA gave the guidelines, which were issued without notice and comment rulemaking, greater clout by announcing that it would presume that the CTGs were RACT unless the state demonstrated that an alternative satisfied the statutory requirement. Although this procedure raises questions under the rulemaking provisions of the Act and the Administrative Procedure Act, it survived court challenge.⁴ While the "reasonably available" language suggests that RACT is not the most stringent of standards,

²See § 12:19 notes 5-13 and accompanying text.

[Section 12:26]

¹Prior to the 1977 Amendments, EPA SIP rules used the concept of reasonably available control technology (RACT). See, e.g., 40 C.F.R. § 51.13(b) (1977) (three year deadline for attainment of secondary standards for particulates and sulfur dioxide where standards attainable through use of RACT). See also 38 Fed. Reg. 15197 (1973) (Emission Reductions Achievable Through Inspection and Maintenance and Retrofit of Light Duty Vehicles) codified at 40 C.F.R. part 51, App. N.

²Senate Debate on S.252, June 8, 1977 (statement of Sen. Muskie), *reprinted in* 3 Cong. Research Serv., 95th Cong., 2d Sess., *A Legislative History of the Clean Air Act Amendments of 1977* 712, 712 (Comm. Print 1978) (RACT requirement merely stated).

³The National Commission on Air Quality (NCAQ) reported that "state and local agencies relies on EPA guidance as to what constituted acceptable levels of control because of administrative convenience, the potential adverse political effects of requiring stricter controls, and a desire to ensure that implementation of the revised plans would not result in significant increases in costs." National Commission on Air Quality, *To Breathe Clean Air* 17 (1981).

⁴See *Nat'l Steel Corp. v. Gorsuch*, 700 F.2d 314, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20295 (6th Cir. 1983) (EPA acted reasonably in requiring state to impose CTG as RACT where state did not provide enough information in original SIP submittal to enable EPA to evaluate the effectiveness of the state's

states may not ignore one set of controls if a more effective alternative has already been proven in the industry.⁵ It is clear from the Act that states' obligation to clean up nonattainment areas extends beyond what is reasonable; the law says they must do whatever it takes.

The inspection and maintenance program was the first mandatory Clean Air Act program aimed at motorists' cars, not traffic. The states required to adopt these programs generally moved slowly. New legislation usually was required and some state legislatures balked.⁶ EPA was sensitive to the potential for opposition but imposed sanctions on several states⁷ and eventually was successful in breaking resistance in most states,⁸ sometimes with major assistance from citizen groups.⁹ Once in place, the I/M programs seemed to generate much less controversy than was stirred by their adoption.¹⁰

§ 12:27 Implementing the 1977 amendments—The SIP revision process: Three rounds of compromise

Despite the difficulty of the problems to be addressed by the nonattainment area SIP revisions, the schedule was ambitious and laced with sufficient sanctions for tardiness to make miserable the lives of EPA, states, and industry if the process became bogged down. It did. The process had four key deadlines: (1) July 1, 1979, by which Part D SIPs for 1982 nonattainment areas were to have been approved;¹ (2) December 31, 1982, by which those areas were to have been brought into attainment;² (3) July 1, 1982, by which 1987 SIPs were to have been approved;³ and (4) December 31, 1987, by which this last round of SIPs were to have accomplished

proposed controls). *See also* *Michigan v. Thomas*, 805 F.2d 176, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20235 (6th Cir. 1986) (EPA's published definition of RACT for fugitive dust emissions is advisory and not binding on the Agency in its review of the adequacy of a SIP provision promulgated several years after the definition.).

⁵*Bethlehem Steel Corp. v. EPA*, 782 F.2d 645, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20268 (7th Cir. 1986).

⁶*See, e.g., Dressman v. Costle*, 759 F.2d 548, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20434 (6th Cir. 1985) (EPA's imposition of sanctions on state for failure to pass legislation for I/M program upheld); *Pacific Legal Found. v. Gorsuch*, 690 F.2d 725, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20105 (9th Cir. 1982) (individual legislators and public interest group lack standing to challenge EPA's imposition of construction ban, funding sanctions as a result of California's failure to enact I/M legislation); *Del. Valley Citizens' Council for Clean Air v. Pennsylvania*, 678 F.2d 470, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20631 (3d Cir. 1982) (civil contempt order for state's failure to implement I/M program agreed to in settlement of citizen suit and injunction blocking federal transportation grants to state upheld). *See also* § 12:143.

⁷*See* § 12:143.

⁸*See* § 12:143.

⁹*See* *Del. Valley Citizens' Council for Clean Air v. Pennsylvania*, 678 F.2d 470, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20631 (3d Cir. 1982). Plaintiff citizens group succeeded in enforcing the I/M requirement where EPA had not acted.

¹⁰The opposite has proven true under the 1990 Amendments. The stringent I/M programs mandated in nonattainment areas have focused substantial public and political pressure on the Agency. *See, e.g., Rule on Inspection Maintenance Programs Gives States Greater Flexibility*, EPA Says, 26 Env't Rep. (BNA) 896 (Sept. 15, 1995) (reporting that EPA has announced relaxed I/M rules for states that do not require a "full strength" program). *See also* Harrington & McConnell, *The Wrong Way to Test Your Tailpipe*, Wash. Post, Mar. 31, 1995, at A31 (reporting that "attempts to implement the [I/M] regulation have been disastrous").

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¹Pub. L. No. 95-95, § 129(c), 91 Stat. 686 (1977), codified as a note to Clean Air Act § 172, 42 U.S.C.A. § 7502.

²Old Clean Air Act § 172(a)(1).

³Pub. L. No. 95-95, § 129(c), 91 Stat. 686 (1977), codified as a note to Clean Air Act § 172, 42

their air quality objectives.⁴ In a replay of experience with the 1970 Act, the 1977 Act's deadlines were not met and EPA had to conjure up administrative innovations to forestall collapse of the program.

**§ 12:28 Implementing the 1977 amendments—The SIP revision process:
Three rounds of compromise—The 1979 deadline and conditional
SIPs**

Most states failed to submit Part D SIPs by January 1, 1979, but all had submitted plans within a year of that deadline.¹ However, the plans that were not incomplete typically were inadequate in other ways, necessitating a long series of modifications and additions even before EPA could deem the plans ready for decision. EPA handled the problem by seeing the glass as half full, rather than half empty, although this required fast stepping around some of the Act's checkpoints.²

When the July 1, 1979, deadline passed with only one state having an approved Part D SIP revision,³ EPA announced a conditional SIP approval policy.⁴ EPA made rather heavy use of the new policy.⁵ This creative solution had no explicit support in the Act; Congress probably intended EPA to step in and fill the gaps in the states' SIPs under such circumstances,⁶ but it did not expect EPA to have to take over the process wholesale. Every court to address the conditional SIP issue decided that it was within EPA's authority.⁷ The courts generally concluded that tinkering with the SIP approval deadline was no great crime, so long as the immutable 1982 attainment deadline was not overtly threatened.⁸

As a practical matter, the conditional approval policy took the steam out of the

U.S.C.A. § 7502.

⁴Old Clean Air Act § 172(a)(2).

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¹As of January 1980, forty states had submitted complete revisions. National Commission on Air Quality, *To Breathe Clean Air* 16 (1981).

²As one reviewing court noted, "[p]erhaps the most striking feature of this litigation is the extent to which EPA's administrative processing of Illinois' and Indiana's Part D SIP's has diverged from the procedure contemplated by the Clean Air Act." *Citizens for a Better Env't v. Costle*, 515 F. Supp. 264, 270, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20963, 20966 (N.D. Ill. 1981).

³See 44 Fed. Reg. 38543 (1979) (announcing final approval of Wyoming's Part D SIP).

⁴For the purposes of determining whether a SIP satisfies the requirements of Part D, EPA intends to grant conditional approvals under certain circumstances.

If a state submits a SIP containing minor deficiencies, and the state provides assurances that it will submit corrections on a specified schedule, EPA will conditionally approve the plan. The EPA Regional Office will negotiate with the state on an acceptable schedule prior to final action. A conditional approval will mean that the restriction on new sources will not apply unless the state fails to submit corrections by the specified date, or unless the corrections are ultimately determined to be inadequate. Conditional approval will not be granted without strong assurances from the appropriate state officials that the deficiencies will be corrected on schedule. 44 Fed. Reg. 38583 (1979).

⁵As of January 1981, EPA had taken final action on twenty-one complete Part D SIPs. Of these, fifteen were conditionally approved. National Commission on Air Quality, *To Breathe Clean Air* 117 (1981).

⁶Certainly that is the apparent intent of Clean Air Act § 110(c), 42 U.S.C.A. § 7410(c). See, e.g., Jorling, *Air Pollution Control*, in *Federal Environmental Law* 1058, 1087 (E. Dolgin & T. Guilbert, eds. 1974).

⁷See *Conn. Fund for the Env't, Inc. v. EPA*, 672 F.2d 998, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20306 (2d Cir. 1982); *City of Seabrook v. EPA*, 659 F.2d 1349, ELR 21058 (5th Cir. 1981). The Second Circuit gave EPA half the loaf, holding that conditional approval does not end the construction moratorium. See also Comment, *Circuit Courts Endorse Conditional SIP Approvals; Connecticut's Construction Ban Restored*, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 10055 (1982).

⁸As with the question of major new sources in nonattainment areas, which Congress had ignored in 1970, the practical consequences of failure to meet the new SIP deadlines were not addressed in the

SIP revision process. While EPA could pressure states to satisfy the conditions, threatening dire consequences at the 1982 attainment date, the Agency had little real ammunition. Its aversion to writing federal SIPs under § 110(c) was reconfirmed by the conditional approval policy. It could impose the construction ban but the ban was an empty threat at that point because of the economic stagnation in many cities and the fact that many areas expecting to miss the 1979 deadline had issued enough new source permits before the deadline to allow considerable construction despite the ban.⁹ The spotlight shifted from the SIP deadline to the 1982 attainment deadline and EPA's hands were tied until that deadline passed. The Agency continued to issue conditional approvals for 1982 areas after the attainment deadline.¹⁰ Many of the conditions set on 1979 SIPs remained unfulfilled well after the 1982 deadline,¹¹ despite dicta in the cases upholding conditional approval that EPA would have to step in under section 110(c) if the SIPs were still inadequate when the 1982 attainment clock tolled.¹²

**§ 12:29 Implementing the 1977 amendments—The SIP revision process:
Three rounds of compromise—1977 SIP revisions, administrative
overload and acid rain**

While EPA had to review hundreds of Part D SIP revisions, it also had to field a continuing flow of revisions for individual sources: proposals to relax standards, change emission limitations on groups of sources in an “emission trade,” or otherwise modify the SIP requirements. The two paper flows threatened to drown EPA, and by 1982 there was a backlog of hundreds of SIP revisions, with EPA review taking a year or longer.¹

EPA had developed two methods of simplifying the SIP revision process, generic approvals and parallel processing. The former allowed EPA to approve a state system for deciding on SIP modification requests under the bubble policy;² the latter allowed EPA processing to begin while the state was considering a revision.³ Partly as a result of these aids, but also by making it a management priority, EPA eventually eliminated the SIP backlog.

The procedural innovations were useful, but could not address the root cause of

1977 Amendments. The conditional SIP policy appeared to be nicely balanced. EPA and the states were spared the harsh consequences of a literal reading of the statute, but the burden remained on the states to correct the SIP deficiencies. Instead of facing dozens of inadequate SIPs at once, a problem endemic to a system relying on national deadlines, EPA could concentrate its resources on a few SIPs at a time. The courts' acquiescence and the silence of several of the national environmental groups most active on Clean Air Act issues suggest that EPA had no real choice. The Natural Resources Defense Council and Sierra Club, two national groups that have carried the environmental banner most visibly in Clean Air Act litigation, did not become involved in the conditional SIP challenges.

⁹National Commission on Air Quality, *To Breathe Clean Air* 3.4-10–3.4-13 (1981).

¹⁰*See, e.g.*, 48 Fed. Reg. 11746 (1983) (conditionally approving a portion of the 1982 Tennessee SIP for particulates). The condition later was extended to December 31, 1986. 50 Fed. Reg. 33534 (1985).

¹¹*See, e.g.*, 50 Fed. Reg. 5246 (1985) (reviewing outstanding conditions from Part D SIPs for EPA Region V). The action revoked conditions deemed no longer germane for attainment and imposed new deadlines for conditions deemed germane, but “less serious.” For more serious conditions, EPA policy required the Agency to disapprove the relevant SIP provisions and impose the construction ban, but EPA set aside the conditions for later action.

¹²*Conn. Fund for the Env't, Inc. v. EPA*, 672 F.2d 998, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20306 (2d Cir. 1982).

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¹National Commission on Air Quality, *To Breathe Clean Air* 2.1-15 (1981).

²*See* 46 Fed. Reg. 20551 (1981) (EPA approval of New Jersey “generic bubble” rule, explaining a formula by which the state would approve emission trades concerning hydrocarbon emissions.).

³*See, e.g.*, 40 C.F.R. § 51.103 (allowing for “preliminary review” of SIP provisions by EPA).

delay. SIPs are complex, rigid documents that regulate thousands of activities, many of which can change from day to day. The regulatory process is labor intensive and slow to change existing rules, which may represent delicate compromises arrived at over long years of negotiations. The SIP, with federal regulation laid atop state regulation, is doubly difficult to move. One knowledgeable commentator has argued that the quality control benefits of the double key system are outweighed by the costs of delay and discouragement of innovation and has proposed an alternative modeled on the Clean Water Act.⁴ The SIP red tape problem is exacerbated in a period in which the federal budget for air pollution control, which pays much of the states' regulatory bill as well as that of EPA, has fallen year to year.⁵

Revisions of a SIP for individual sources usually do not rise to the level of national policy issues, but there was one major exception. During the early 1980s, EPA approved revisions to midwestern states' SO₂ SIPs allowing substantial increases in powerplant emissions.⁶ The states and EPA approved the changes because air quality models showed that the new limits would not jeopardize attainment or maintenance of the NAAQS. Environmentalists' and northeastern states' pleas that the relaxations would contribute to acid rain fell on deaf ears since there was no NAAQS linked to acid rain.⁷ The acid rain provisions of the 1990 Amendments will force substantial cuts in emissions for many of the same plants.⁸

**§ 12:30 Implementing the 1977 amendments—The SIP revision process:
Three rounds of compromise—The 1982 attainment deadline and
paper attainment**

The conditional approval mechanism enabled EPA to dodge the bullet of the 1979 SIP approval deadline. EPA imposed the construction ban on all states that missed the 1979 SIP revision deadline, with the proviso that the ban would be lifted when

⁴Pedersen, *Why the Clean Air Act Works Badly*, 129 U. Pa. L. Rev. 1059 (1981).

⁵Congress has attempted to alleviate the effects of tight federal budgets by requiring substantial permit fees under the 1990 Amendments, and mandating that those fees be used only to support state air quality programs. Clean Air Act § 110(a)(2)(K), 42 U.S.C.A. § 7410(a)(2)(K); Clean Air Act § 502(b)(3), 42 U.S.C.A. § 7661a(b)(3). The permit fee program is intended to support all direct and indirect costs incurred in developing and administering the permit program under the 1990 Amendments.

⁶*See New York v. EPA*, 716 F.2d 440, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20807 (7th Cir. 1983) (relaxation of Illinois SIP sulfur dioxide without consideration of effects on air quality in New York does not violate Clean Air Act); *New York v. Administrator*, 710 F.2d 1200, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20636 (6th Cir. 1983) (EPA properly approved revision of Tennessee SIP for one power plant's sulfur dioxide emissions without considering the impacts on sulfur dioxide or sulfate pollution in New York); *Connecticut v. EPA*, 696 F.2d 147, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20135 (2d Cir. 1982) (EPA properly approved relaxation of New York SIP on sulfur dioxide for two Long Island power plants in spite of small sulfur dioxide and sulfate impacts on Connecticut.); *Ohio v. EPA*, 784 F.2d 224, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20447 (6th Cir.), on reh'g, 798 F.2d 880, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20870 (6th Cir. 1986) (EPA approval of SIP relaxation for two Ohio power plants overturned because model on which attainment analysis based not validated in area.).

⁷*New York v. EPA*, 716 F.2d 440, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20807 (7th Cir. 1983); *New York v. Administrator*, 710 F.2d 1200, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20636 (6th Cir. 1983); *Connecticut v. EPA*, 696 F.2d 147, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20135 (2d Cir. 1982); *Ohio v. EPA*, 784 F.2d 224, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20447 (6th Cir. 1986), on reh'g, 798 F.2d 880, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20870 (6th Cir. 1986). One such revision was undone, however, because EPA based the relaxation on an air quality model that had not been validated in the location of the sources under review. *Ohio v. EPA*, 784 F.2d 224, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20447 (6th Cir. 1986), reaffirmed on reh'g, 798 F.2d 880, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20870 (6th Cir. 1986) (EPA approval of SIP relaxation for two Ohio power plants overturned because model on which attainment analysis based not validated in area). *See also Ohio v. EPA*, Nos. 80-3575, et al. (6th Cir. 8-7-86) (earlier decision reaffirmed; Congress did not intend courts to simply defer to EPA decisions on models, but to conduct a "searching review").

⁸Clean Air Act § 404, as added by § 401 of the 1990 Clean Air Act Amendments. *See* § 12:56.

plans were approved or conditionally approved. The vast majority of the revisions were on hand by the 1982 attainment deadline, but many of the nonattainment areas covered by the Part D SIPs failed to achieve the NAAQS by that date. EPA then had another bullet to face, and theoretically a larger one: the SIP revision deadline had only been an interim step, but the attainment deadline was the final goal.

As the 1982 deadline loomed large, EPA wrestled with its options. It issued a hard-line proposal in 1983 to disapprove the Part D SIPs and to reimpose the construction ban for those regions that missed the 1982 attainment deadlines.¹ EPA would then have had to promulgate SIP provisions for many areas of the country. EPA policy softened twixt proposal and promulgation. The Agency decided that the construction ban was not necessary for regions that had approved Part D SIPs in place;² a facially plausible reading of the statute, but one elevating form over substance. For approved, but ineffective, SIPs, EPA would notify the states that their SIPs were inadequate and call for further revisions under old § 110(a)(2)(H).³

Like conditional approval, the deficiency letter policy was not a quick fix for deficient SIPs. Two years after the deadline the letters were still going out. In 1984, EPA set out notice letters covering thirty-six nonattainment areas, giving the states one year to correct the SIP deficiencies.⁴ Areas that did not meet 1982 attainment deadlines and never had Part D SIPs approved remained subject to the construction ban and were given less time to revise their plans.⁵ EPA did not promulgate Part D SIP provisions except where absolutely unavoidable.⁶ Funding sanctions were to be reserved for states that did not prepare or did not implement SIPs; continued failure to attain the NAAQS was irrelevant.⁷

As a result of these policies, Congress' second hard and fast clean air deadline had been neatly breached and the attainment process for 1982 areas was largely under EPA's discretionary control. The EPA policy stretched the statutory scheme, since it nearly eliminated the connection between state implementation plans and air quality results, but for years EPA avoided being forced to step in and promulgate federal implementation plans (FIPs).⁸ Indeed, in the twilight zone of post-1982 implementation of the Part D program for 1982 areas, even some courts began to

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¹48 Fed. Reg. 4972 (1983).

²48 Fed. Reg. 4972 (1983).

³48 Fed. Reg. 4972 (1983).

⁴49 Fed. Reg. 18827, 47488 (1984).

⁵48 Fed. Reg. 50686, 50691 (1983).

⁶*See, e.g.*, 50 Fed. Reg. 45603 (1985) (disapproving Florida's SIP for lead and promulgating federal emission limits).

⁷*See, e.g.*, 51 Fed. Reg. 2732 (1986) (proposing to limit federal highway funding for four Indiana counties for the state's failure to make reasonable efforts to develop Part D SIPs for the areas). This proposal was later eliminated by the approval of the Indiana vehicle inspections and maintenance rule and transportation control plan. 55 Fed. Reg. 31048 (July 31, 1990).

⁸Local groups filed suits concerning EPA's failure to insist on attainment SIPs or to promulgate federal provisions for Los Angeles and Phoenix. *See* *Abramowitz v. EPA*, No. 84-7642 (9th Cir. settlement signed 8-27-85) (EPA agreed to implement a "reasonable efforts program" for Los Angeles); *McCarthy v. Thomas*, No. CIV 85-344-TUC-WDB (D. Ariz. 2-18-86) (EPA agreed to complete action on proposed findings that state not making reasonable efforts to prepare Part D SIP and to begin funding cut process if state does not respond.). Both suits ultimately were resurrected and EPA was compelled to develop FIPs. *See* 55 Fed. Reg. 36548 (1990) (EPA proposes FIP for Los Angeles pursuant to court action.); 55 Fed. Reg. 41204 (1990) (EPA proposes FIPs for Phoenix and Tucson in response to court order.).

lose sight of the original significance of the attainment deadlines.⁹

**§ 12:31 Implementing the 1977 amendments—The SIP revision process:
Three rounds of compromise—The 1987 attainment deadline:
Reasonable efforts are enough**

For the most part, the conditional approval/paper compliance scheme worked out after 1979 and 1982 was applied to the 1982-1987 SIPs. EPA had to iron out a new wrinkle with the 1987 SIPs. California submitted SIP revisions that candidly admitted that attainment was not possible by 1987. EPA adopted a policy of holding back on sanctions, so long as the SIPs showed “reasonable extra efforts” to come into attainment. The agency responsible for the SIP would have to recheck for additional controls and tighten up on implementation of the revisions so as to continue to make as much progress toward attainment as possible.¹ So long as all possible efforts were made and progress results, EPA promised to hold sanctions in abeyance at least until 1987.

By mid-1987, it was clear that more than four California areas would not meet the 1987 attainment deadline, but EPA ultimately left it to Congress to select a response. The Agency decided to disapprove inadequate 1987 SIP revisions, call in for revision formerly approved SIPs that in fact had failed to achieve attainment, and impose the construction ban instead of allowing reasonable efforts to suffice.² It further indicated, however, that it would hold in abeyance the power to withdraw Clean Air Act grant funds and to promulgate federal implementation plan provisions so long as the subject jurisdictions continue to make reasonable efforts to attain the NAAQS.³ EPA issued SIP calls in 1988 and 1990 for ozone and carbon monoxide nonattainment areas, but did not impose construction bans on all such areas.⁴ The notices required the states to carry out any incomplete actions under their current plans and upgrade their emission inventories, but deferred overall revision of the SIPs, in the 1988 notice, pending EPA’s final ozone nonattainment policy which never was issued, and in the 1990 notice, pending amendment of the Act.⁵ In the interim, the courts became less patient with states that had been slow to upgrade their nonattainment area SIPs⁶ and with EPA, forcing it to begin promulgating

⁹In *Bethlehem Steel Corp. v. EPA*, 782 F.2d 645, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20268 (7th Cir. 1986), the court ruled that EPA had acted properly in partly approving and partly disapproving provisions of the Indiana SIP for nonattainment areas, without once discussing whether the provisions approved would result in attainment and maintenance of the NAAQS.

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¹See EPA Region IX, Reasonable Efforts Program, Aug. 29, 1985.

²52 Fed. Reg. 26404 (1987). See also EPA’s notice of its proposed policy governing post-1987 ozone and carbon monoxide plan revisions for areas not attaining the NAAQS. 52 Fed. Reg. 45044 (1987).

³52 Fed. Reg. 26404, 26408-10 (1987).

⁴EPA did impose construction bans on Los Angeles and certain other areas after the expiration of an eight-month moratorium on sanctions established by Pub. L. No. 100-202. See 53 Fed. Reg. 49494 (1988).

⁵53 Fed. Reg. 34500 (1988); 55 Fed. Reg. 30973 (1990). In the 1988 notice, EPA identified 101 ozone nonattainment areas (down to 96 areas in the 1990 notice) and both notices announced that EPA had called in the SIPs for those areas for revision. Since 1977, the list of nonattainment areas had been reduced from 200, but approximately two-thirds of the country’s population lives in those areas that continue to exceed the ozone standard.

⁶See *Citizens for a Better Env’t v. Deukmejian*, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 21047 (N.D. Cal. 1990) (citizens group has standing to enforce SIP revision obligation for ozone nonattainment area and California must upgrade plan); *Natural Res. Def. Council, Inc. v. New York State Dep’t of Env’tl. Conservation*, 668 F. Supp. 848, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20106 (S.D. N.Y. 1987); *Am. Lung Ass’n of New Jersey v. Kean*, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20036 (D.N.J. 1987) (requiring New

FIPs for certain areas.⁷

§ 12:32 The Clean Air Act Amendments of 1990

Title I of the 1990 Amendments sets out a new program to bring nonattainment areas into compliance with the NAAQS. Congress rewrote § 110(a)(2) and Part D and added special nonattainment SIP requirements for ozone, carbon monoxide, and particulate matter. The centerpiece of the new requirements is the ozone SIP provision, which incorporates several novel concepts. The new Subpart 2 to Part D classifies nonattainment areas on a five-point scale from “Marginal” to “Extreme” and allows progressively more time for each higher class to attain the NAAQS, but also requires increasingly stringent control measures for each higher class. Controls based on federal control guidelines are mandated for more existing sources. Another major innovation is that the reasonable further progress concept is translated into quantified “milestones” for ozone nonattainment areas. Areas that miss the milestones are automatically subject to more stringent “contingency” measures required to be included in the SIP. In addition, they may be moved into a higher class, thereby requiring them to adopt additional controls. The new program has been a dramatic challenge for EPA, the states and the urban areas that are ozone nonattainment areas.¹

§ 12:33 The Clean Air Act Amendments of 1990—Nonattainment area designations and classifications

The Amendments give EPA more control over the general process for designating nonattainment areas. EPA now may revise the state’s proposed designations or trig-

York and New Jersey, respectively, to implement Stage II vapor recovery requirements for gasoline stations and other controls for other categories of stationary sources of VOCs on a schedule). *See also* Am. Lung Ass’n v. Kean, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20036 (D.N.J. 1987) (adopting New Jersey’s schedule for implementing the required remedial measures as consistent with the Act’s mandate to attain the NAAQS as expeditiously as possible).

⁷*Delaney v. EPA*, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20460 (9th Cir. 1990) (EPA must develop FIPs for Phoenix and Tucson.). *See also* 53 Fed. Reg. 49494, 49501 (1988) (notice requesting comment on EPA’s conclusion in response to citizen suit concerning Los Angeles ozone SIP, that EPA had nondiscretionary duty to promulgate FIP for area); 56 Fed. Reg. 1754 (1991) (EPA retains and extends construction moratorium for Ventura County, California, and proposes FIP.); *Abramowitz v. United States Env’tl. Protection Agency*, 832 F.2d 1071 (9th Cir. 1987) (EPA had less flexibility in dealing with nonattainment areas as the 1987 deadline approached.); *Natural Res. Def. Council, Inc. v. New York State Dep’t of Env’tl. Conservation*, 700 F. Supp. 173 (S.D. N.Y. 1988) (EPA must set a deadline for revision of disapproved ozone and carbon monoxide SIP provisions rather than relying on its nonattainment policy.). *But see* 56 Fed. Reg. 826 (1991) (EPA asserts that 1990 Amendments remove its authority to promulgate FIP for Arizona nonattainment areas.); 56 Fed. Reg. 5458 (1991) (EPA disapproves Arizona SIP provisions and promulgates FIP due to Ninth Circuit’s inaction on motion to vacate order requiring FIP.).

As a result of settlement duties, EPA is obligated to promulgate a FIP for California by February 15, 1995. In a letter to President Clinton dated September 1, 1994, Governor Wilson asked for an eighteen-month extension for implementation of the 1987 California FIP. Governor Wilson cited massive economic dislocations threatened by the FIP and California’s preference to prepare its own SIP in compliance with the 1990 Clean Air Act Amendments. This letter is reprinted in *Inside EPA’s Clean Air Rep.*, Sept. 8, 1994, at 26. For an account of EPA’s views on timing and circumstances of its California FIP obligation, see *Coalition for Clean Air v. S. Cal. Edison Co.*, 971 F.2d 219 (9th Cir. 1992).

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¹The 1990 Clean Air Act Amendments are extremely complex and have proven difficult to assimilate even for the most experienced practitioner. *See, e.g.*, *Motor Vehicle Mfrs. Ass’n v. N.Y. Dep’t of Env’tl. Conservation*, 17 F.3d 521, 525, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20552, 20554 (2d Cir. 1994); *Sierra Club v. Larson*, 2 F.3d 462, 469, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20070, 20074 (1st Cir. 1993).

ger the redesignation process.¹ Until nonattainment area SIPs have been approved, it apparently will be virtually impossible for states to have nonattainment areas redesignated to attainment status.² Notice and comment rulemaking is not required for designations.³

For purposes of implementing the new nonattainment provisions of the Act, designations in place on November 15, 1990, are carried forward.⁴ States were required to submit revised lists of ozone and carbon monoxide nonattainment areas to EPA within 120 days of enactment, but could not redesignate nonattainment areas to other status in this review.⁵ Areas designated nonattainment for particulate matter under the total suspended particulate standard were automatically deemed nonattainment for PM₁₀, but the existing TSP attainment designations for total suspended particulate were preserved for the PSD program.⁶

§ 12:34 The Clean Air Act Amendments of 1990—SIP review procedures

The 1990 Amendments revise the basic SIP review process, largely to relieve EPA of extreme administrative burdens created by the original system and to give it greater leverage with the states.¹ When a new NAAQS is promulgated, the states have three years to submit new SIPs. The deadlines for submission of the SIP revi-

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¹Clean Air Act § 107(d)(1)(B)(ii), (3)(A), as amended by § 101(a) of the 1990 Clean Air Act Amendments. *See* § 12:23, for a discussion of the limitations on EPA's authority in this regard under the 1977 Amendments.

²Clean Air Act § 107(d)(3)(E), (F), amended by § 101(a) of the 1990 Clean Air Act Amendments. The provision bars EPA from approving a redesignation from nonattainment to unclassified under any circumstances, or from nonattainment to attainment unless the state has approved nonattainment and maintenance SIPs for the area, has complied with the applicable SIP provisions of the Act, and EPA determines that the area has achieved the NAAQS due to permanent and enforceable reductions in emissions due to implementation of the SIP and other measures required by the Act. These tests apparently will be impossible to meet for several years, until new nonattainment area SIPs have been submitted, approved, and implemented. However, some areas have been redesignated from nonattainment to attainment status since the Amendments were enacted. For example, the Tampa Bay nonattainment area for ozone was redesignated to attainment status, following Agency approval of Florida's maintenance plan for the area. 60 Fed. Reg. 62748 (Dec. 7, 1995).

Difficulties caused by lengthy delays during EPA's redesignation of areas from nonattainment to attainment are ameliorated somewhat by flexibility afforded the Agency to treat candidate areas functionally as in attainment status. In *Sierra Club v. EPA*, 99 F.3d 1551, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 20458 (10th Cir. 1996), two counties in Utah demonstrated attainment of the ozone NAAQS to EPA in 1992 and requested redesignation. Three years after the attainment demonstration, the Agency was not finished with the redesignation approval process. Environmental groups sued when EPA announced in 1995 that the same counties would not have to submit plans and demonstrations required of nonattainment areas under the 1990 Amendments. The court upheld EPA's pragmatic approach, recognizing that the purpose of these plans and demonstrations was only to attain the standards, and that the counties had in fact already done so.

³Clean Air Act § 107(d)(2)(B), amended by § 101(a) of the 1990 Clean Air Act Amendments.

⁴Clean Air Act § 107(d)(1)(C), amended by § 101(a) of the 1990 Clean Air Act Amendments.

⁵The Act automatically expands the boundaries of any ozone nonattainment areas in the worst three classifications to encompass the entire metropolitan statistical area in which the area is located if the boundaries already are not that broad. Clean Air Act § 107(d)(4)(A)(iv), 42 U.S.C.A. § 7407(d)(4)(A)(iv).

⁶Clean Air Act § 107(d)(4)(B), amended by § 101(a) of the 1990 Clean Air Act Amendments. The Agency has promulgated PM₁₀ increments for PSD areas, which are to take the place of the former TSP increments. 58 Fed. Reg. 31622 (1993).

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¹*See* *Natural Res. Def. Council, Inc. v. Browner*, 57 F.3d 1122, 1123, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 21219, 21220 (D.C. Cir. 1995).

sions required by the Amendments are found in the pollutant-specific sections.² The Amendments insert a new “completeness” step into the process.³ From the time a state submission is complete, EPA has twelve months to review and act on it.⁴ The Amendments officially authorize the expedient SIP approval options developed by EPA over the years, so that EPA’s action on a state plan may be approval, partial approval, conditional approval or disapproval.⁵ Partial approval does not relieve the state of any consequences of missing a deadline, however, and conditional approval automatically reverts to disapproval if the conditions are not satisfied within one year.⁶ While EPA has greater flexibility than under the 1977 Amendments, it still may face widespread noncompliance by the states with the new ultimate deadlines, and it is not clear that it will be politically any easier to enforce the Act literally to allow the “automatic” penalties to be imposed.⁷

²See, e.g., Clean Air Act § 182(a)(1), as added by § 103 of the 1990 Clean Air Act Amendments (states have two years from enactment to submit updated emission inventories). EPA’s decision to approve conditionally “committal SIPs” in satisfaction of NO_x SIP requirements under the 1990 Amendments was overturned in *Natural Resources Defense Council, Inc. v. EPA*, 22 F.3d 1125, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20836 (D.C. Cir. 1994). EPA had provided late guidance to the states concerning inspection and maintenance programs and reasonably available control technology (RACT) for NO_x. In the General Preamble for Implementation of Title I of the Clean Air Act Amendments of 1990, 57 Fed. Reg. 13498 (Apr. 16, 1992), and Nitrogen Oxides Supplement to the General Preamble, 57 Fed. Reg. 55620 (Nov. 25, 1992), the Agency had announced a policy of conditional approval of SIP submittals. If a state committed to develop its SIP within one year after conditional approval by EPA, the Agency would, in effect, extend the statutory deadline. See *Natural Res. Def. Council, Inc. v. EPA*, 22 F.3d 1125, 1133–37, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20836, 20839–41 (D.C. Cir. 1994). The District of Columbia Circuit overturned EPA’s approach because it was simply a means to circumvent a statutory deadline. Because EPA’s delays created the lag in state submittals, the court declined to sanction the states. It extended the timetable for inspection and maintenance SIP submittals (effectively allowing the relief EPA had sought), but declined to extend the period of time for NO_x RACT submissions.

³EPA must promulgate rules establishing the elements of a complete SIP revision. A SIP revision will be deemed not to have been submitted until it is complete, but if EPA does not make a completeness determination within six months, the state submission is deemed complete by operation of law. Clean Air Act § 110(k)(1)(B), as added by § 101(c) of the 1990 Clean Air Act Amendments.

⁴Clean Air Act § 110(k)(2), as added by § 101(c) of the 1990 Clean Air Act Amendments. As interpreted until recently, EPA only had four months in which to act on a proposed SIP or revision.

⁵Clean Air Act § 110(k)(3), (4), as added by § 101(c) of the 1990 Clean Air Act Amendments. See §§ 12:27 to 12:29. EPA took steps to expand the list. See Memorandum from John Calcagni, Director, Air Quality Management Division, to Regional Air Program Directors, “Processing of State Implementation Plan (SIP) Submittals,” July 7, 1992 (in addition to statutory options, EPA may issue a “limited approval” with regard to a partially flawed SIP submittal, which, according to the memorandum, would make the SIP federally enforceable and, unless accompanied with a limited disapproval, would not start the clocks on the deadlines for EPA sanctions or promulgation of federal implementation plans).

⁶Clean Air Act § 110(k)(3), (4), as added by § 101(c) of the 1990 Clean Air Act Amendments.

⁷States have litigated EPA’s ability to force them to follow the requirements of the 1990 Amendments. See, e.g., *Virginia v. Browner*, 80 F.3d 869, 26 Env’tl. L. Rep. (Env’tl. L. Inst.) 21245 (4th Cir. 1996) (challenging operating permit requirements); *Missouri v. United States*, 918 F. Supp. 1320, 26 Env’tl. L. Rep. (Env’tl. L. Inst.) 21204 (E.D. Mo. 1996) (challenging requirement for an ozone nonattainment plan), vacated by, 109 F.3d 440, 27 Env’tl. L. Rep. 20,908 (8th Cir. 1997). Some local governments within the Atlanta nonattainment area have threatened litigation as well. See Duane D. Stanford, *EPA Facing Suit Over Atlanta Air Standards*, *Atlanta J. & Const.*, Feb. 27, 1998, at D03 (two county commission chairs threaten to sue EPA for forcing the metro-Atlanta area to come into attainment by November 1999, on the ground that the federal government will ruin Atlanta’s economy). On the other hand, a coalition of citizen’s groups has threatened litigation if EPA is too lenient on Atlanta. David Goldberg, *Atlanta’s Bad Air: A Crisis Top Leaders Won’t Touch*, *Atlanta J. & Const.*, Mar. 8, 1998, at A01. The Ninth Circuit Court of Appeals has rejected the Agency’s attempt to use the passage of the 1990 Amendments to avoid obligations to promulgate and administer a federal implementation plan for California’s South Coast air basin. See *Coalition for Clean Air v. EPA*, 971 F.2d 219, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 21274 (9th Cir. 1992). On June 14, 2005, EPA published its final approval of the Georgia SIP, which redesignates the metro Atlanta area from severe one-hour ozone NAAQS non-

§ 12:35 The Clean Air Act Amendments of 1990—General SIP and Part D requirements

The Amendments rewrite § 110(a)(2), making several significant changes. The “other” control measures that may be included in a SIP now are defined specifically to include economic incentives.¹ As discussed below, the test for impermissible interstate impacts has been relaxed.² In addition, the construction moratorium of old Clean Air Act § 110(a)(2)(I) has been deleted.³ Sanctions for states that fail to live up to their SIP obligations still include cuts in federal highway funding (unless the funding is for safety or air quality projects), but a new sanction, replacing the construction moratorium, is a tougher offset rule; offsets that must be obtained in order to construct major new sources in nonattainment areas must be 2 to 1.⁴ EPA retains the authority to issue a notice of deficiency to the states if a SIP is substantially inadequate to meet the requirements of the Act and must promulgate a federal implementation plan within two years of a state’s failure to submit a satisfactory plan or to correct deficiencies in a plan on schedule, unless the state corrects the deficiencies before EPA promulgates its plan.⁵

The special Part D SIP requirements for nonattainment areas also are rewritten in the Amendments.⁶ The basic attainment deadline for such areas is five years.⁷ Nonattainment areas may be classified by the extent to which existing air quality exceeds the NAAQS, with up to an additional five years allowed the more seriously polluted areas for attainment.⁸ All nonattainment areas SIPs now must include contingency measures that take effect *automatically* if any applicable reasonable further progress “milestone” or attainment deadline is missed.⁹ New source review

attainment to attainment for ozone and approves the ten-year maintenance plan for the area. 70 Fed. Reg. 34358 (June 14, 2005).

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¹Clean Air Act § 110(a)(2)(A), as added by § 101(b) of the 1990 Clean Air Act Amendments. *See* § 12:12. EPA has issued an economic incentive rule. 59 Fed. Reg. 16690 (Apr. 7, 1994).

²*See* § 12:54.

³Areas without approved new source review programs in place or that did not attain the SO₂ standard by the 1982 deadline are still subject to the moratorium, however. Clean Air Act § 110(n)(3), as added by § 101(b) of the 1990 Clean Air Act Amendments.

⁴Clean Air Act § 110(m), 179(b)(2) as added by §§ 101(b), 103 of the 1990 Clean Air Act Amendments.

⁵Clean Air Act § 179(h), as added by § 102(g) of the 1990 Clean Air Act Amendments.

⁶On April 16, 1992, EPA published a “General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990.” 57 Fed. Reg. 13498 (1992). *See also* 57 Fed. Reg. 18070 (Apr. 28, 1992) (publishing appendices to the General Preamble inadvertently omitted in prior notice). The lengthy preamble was intended to be “an advance notice of how EPA generally intends, in those subsequent rule makings, [actions on SIP submittals and general rule makings on Title I requirements] to take action on SIP submissions and to interpret various title I provisions.” EPA presumably took this action because it realized that it was unlikely to be able to promulgate definitive nonattainment regulations in time to give the states meaningful guidance with regard to the numerous SIP revisions due to be submitted by November 15, 1992. EPA has since supplemented or proposed to supplement the Preamble several times. EPA supplemented the General Preamble in June 1994 with a discussion of requirements of state implementation plans for nitrogen oxides. 59 Fed. Reg. 31238 (June 17, 1994); lead and particulate matter were addressed in a draft addendum to the Preamble, 57 Fed. Reg. 31477 (July 16, 1992), and an addendum to the General Preamble in 1994 to address PM₁₀ in serious non-attainment areas and attainment date waivers in non-attainment areas generally. 59 Fed. Reg. 41998 (Aug. 16, 1994).

⁷Clean Air Act § 172(a)(2), as added by § 102(b) of the 1990 Clean Air Act Amendments.

⁸Clean Air Act § 172(a)(2). The special provisions for ozone nonattainment areas allow even more than ten years for some areas. *See* § 12:37.

⁹Clean Air Act § 172(c)(9), as added by § 102(b) of the 1990 Clean Air Act Amendments.

programs must be tightened.¹⁰ Nonattainment SIPs must remain in force after attainment until EPA has approved a maintenance SIP, which must automatically reactivate the nonattainment SIP and other appropriate contingency provisions in the event that the area regresses into nonattainment.¹¹ EPA may impose either the funding or offset sanction for noncompliance with SIP deadlines at any time after determining that the state is not in compliance, and must impose one of the two if such noncompliance continues for eighteen months.¹² If the deficiency is not corrected within an additional six months, EPA must also impose the other sanction.¹³

§ 12:36 The Clean Air Act Amendments of 1990—Ozone nonattainment areas—Classifications

The Amendments require EPA to place ozone nonattainment areas into one of five classes. The classification is to be done on the basis of the ozone “design value,” the fourth highest monitored ozone level over the most recent three-year period for which monitoring data are available.¹ An area whose design value is within 5 percent of the cut-off for the next higher or lower class may be placed in that class based on consideration of various factors, including the number of exceedances and the role of interstate ozone transport in the area’s nonattainment.²

§ 12:37 The Clean Air Act Amendments of 1990—Ozone nonattainment areas—Attainment deadlines and control requirements

The time allowed for attainment and the severity of the nonattainment SIP provisions that must be adopted increase with each higher classification. Congress has written a rather specific recipe for attainment, and neither EPA nor the states appears to have a great deal of flexibility in shaping ozone nonattainment area SIPs. EPA is authorized, however, to grant up to two one-year extensions of the otherwise applicable attainment deadlines for areas that had no more than one exceedance of

¹⁰Emission reductions for which credit is taken in offsets (or otherwise) must be federally enforceable, have actually been obtained before the preconstruction permit may be issued, and be from actual not allowable emissions and involve sources in the same nonattainment area (unless a special showing is made). States no longer may rely on growth allowances as an alternative to offsets. Clean Air Act § 173, as amended by § 103(c) of the 1990 Clean Air Act Amendments.

¹¹Clean Air Act § 175a(d), as added by § 102(b) of the 1990 Clean Air Act Amendments.

¹²The sanctions provisions of the 1990 Amendments have been upheld against constitutional attack by the states under the Tenth Amendment and the Spending Clause. *See Virginia v. Browner*, 80 F.3d 869, 26 Env’tl. L. Rep. (Env’tl. L. Inst.) 21245 (4th Cir. 1996), cert. denied, 519 U.S. 1090 (1997); *Missouri v. United States*, 918 F. Supp. 1320, 26 Env’tl. L. Rep. (Env’tl. L. Inst.) 21204 (E.D. Mo. 1996), vacated on other grounds, 109 F.3d 440 (8th Cir. 1997).

SIP deficiencies listed in the statute trigger an eighteen-month clock, after which a sanction must be applied if the deficient SIP has not been corrected. In *Natural Resources Defense Council v. Browner*, 57 F.3d 1122, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 21219 (D.C. Cir. 1995), the D.C. Circuit upheld EPA’s policy, published at 59 Fed. Reg. 39832 (Aug. 4, 1994), to reset the sanctions clock if a recalcitrant state submits a complete plan within the eighteen-month period, even if the submittal ultimately proves unapprovable.

¹³Clean Air Act § 179, as added by § 102(g) of the 1990 Clean Air Act Amendments. EPA has promulgated a rule governing the order in which sanctions will be applied if the Agency finds that a SIP submittal or revision for a nonattainment area has failed. 40 C.F.R. § 52.31.

[Section 12:36]

¹Notice and comment rulemaking is not required. Clean Air Act § 181(a)(3), as added by § 103 of the 1990 Clean Air Act Amendments.

²Clean Air Act § 181(a)(4), as added by § 103 of the 1990 Clean Air Act Amendments.

the ozone NAAQS in the last year before the deadline.¹ Although the Amendments discuss the ozone nonattainment SIP requirements in terms of controls on volatile organic compounds (VOCs), a separate provision states that the same requirements apply to nitrogen oxide (NO_x) sources, unless, on the basis of a mandated study of the relative impacts of the two pollutants on ozone formation, EPA determines that NO_x controls will not be as effective in reducing ozone.² In addition to the NO_x/VOC study, EPA was requested to issue CTGs for an additional thirteen industry categories, including shipbuilding and repair, and aerospace coatings and solvents, by November 15, 1993.³

The 1990 Amendments contain two sets of provisions, subpart 1 and subpart 2, that address planning and control requirements for nonattainment areas.⁴ Subpart 1, referred to as “Basic Nonattainment,” contains general, less prescriptive, requirements for nonattainment areas for any pollutant for which a NAAQS exists. Subparts 2-5 impose additional restrictions based on the specific pollutant at issue; Subpart 2 applies specifically to ozone.⁵ Subpart 2 sets forth a classification scheme for ozone nonattainment areas and provides more specific requirements for ozone nonattainment areas.⁶

In July 1997, EPA revised the NAAQS for ozone, replacing the 1979 1-hour, 0.12 ppm standard with an 8-hour standard at 0.08 ppm, averaged over eight hours.⁷ In a related effort, EPA issued the so-called “NO_x SIP Call” in 1998, EPA’s final rule on achieving NO_x reductions in certain geographic regions resulting from regional transport, although there was debate at the time as to whether NO_x was truly a precursor to ground-level ozone.⁸

The 8-hour ozone standard was challenged and ultimately upheld as constitutional by the U.S. Supreme Court in 2001, which also upheld EPA’s long policy of basing

[Section 12:37]

¹Clean Air Act § 181(a)(5), as added by § 103 of the 1990 Clean Air Act Amendments.

²Clean Air Act § 182(f), as added by § 103 of the 1990 Clean Air Act Amendments. Although it is well established that NO_x contributes to ozone formation, there is some evidence that under some conditions *decreases* in NO_x emissions could *increase* ozone. However, in its Phase 2 Ozone Rule, EPA codified NO_x as an ozone precursor in attainment and unclassifiable areas. 70 Fed. Reg. 71612 (Nov. 29, 2005).

³Clean Air Act § 183, as added by § 103 of the 1990 Clean Air Act Amendments. Appendix E of the General Preamble of Title I rules (57 Fed. Reg. 18077) lists the thirteen categories. EPA missed its statutory deadline for issuance of required control techniques guidance. On August 27, 1996, EPA issued a CTG for shipbuilding and repair coatings operations (61 Fed. Reg. 44050). On May 20, 1996, EPA issued a CTG for wood furniture finishing operations (61 Fed. Reg. 25223). On March 13, 1998, EPA published a notice of proposed settlement of a suit filed by the Sierra Club to force promulgation of certain remaining CTGs (63 Fed. Reg. 12465). EPA had until August 15, 1998, to publish CTGs for consumer products, autobody refinishing coatings, and architectural coatings, and until December 1, 1998, for the remaining CTGs. CTGs for the aerospace manufacturing and rework coatings facilities were published March 27, 1998 (63 Fed. Reg. 15006). In subsequent rulemakings, EPA opted for a national rule in lieu of CTGs for certain categories. *See* 63 Fed. Reg. 48819 (Sept. 11, 1998) (consumer products); 63 Fed. Reg. 48848 (Sept. 11, 1998) (architectural coating).

⁴*See* 42 U.S.C.A. §§ 7501 to 7509(a) (Subpart 1 requirements); §§ 7511 to 7511f (Subpart 2 requirements).

⁵*Whitman v. Am. Trucking Ass’n*, 531 U.S. 457, 481–86, 121 S. Ct. 903 (2001).

⁶*See* State Implementation Plans, General Preamble for the Implementation of Title I of the CAA Amendments of 1990, Proposed Rule, 57 Fed. Reg. 13498 (Apr. 16, 1992).

⁷40 C.F.R. § 50.10.

⁸*See generally* <http://www.epa.gov/ozonedesignations> for an overview of key regulatory events concerning the ozone NAAQS. *See* 63 Fed. Reg. 57356 (Oct. 27, 1998) for the NO_x SIP Call final rule; *see* Inside EPA’s Clean Air Rep., Aug. 22, 1996, at 4-5, for the debate about the extent to which NO_x contributes to ozone formation.

NAAQS solely on public health considerations without regard to costs.⁹ However, the Supreme Court in the *Whitman* case also held that the CAA was ambiguous as to the relationship between subparts 1 and 2 for purposes of implementing the new 8-hour NAAQS and that the implementation approach in the final NAAQS rule was unreasonable to the extent that it provided no role for subpart 2 in ozone NAAQS implementation.¹⁰

As mentioned previously, in 2008, EPA tightened the ozone NAAQS, revising the primary 8-hour standard to 0.075 parts per million.¹¹ In September 2009, EPA announced it would reconsider the 2008 ozone standard to determine whether an even lower standard may be appropriate. If EPA revises the standard further, final designations are expected to occur in August 2011, with SIPs due in December 2013.

The process for designations following promulgation of a NAAQS is contained in § 107(d)(1) of the CAA. For the 8-hour NAAQS, the Transportation Equity Act for the 21st Century (TEA-21) extended by one year the time for EPA to designate areas for the 8-hour NAAQS.¹² Thus, EPA was required to designate areas for the 8-hour NAAQS by July 2000. However, H.R. 3645, EPA's appropriation bill in 2000, restricted EPA's authority to spend money to designate areas until June 2001 or the date of the Supreme Court ruling, whichever came first. As noted above, the Supreme Court decision was issued in February 2001. In 2003, several environmental groups filed suit in district court, claiming EPA had not met its statutory obligation to designate areas for the 8-hour NAAQS. EPA entered into a consent decree with those groups, which required EPA to issue the 8-hour designations by April 15, 2004.¹³

EPA thereafter began the process for states and tribes to submit their recommendations as to which areas under their respective jurisdictions would be designated as non-attainment for the new ozone standard and began rulemaking to develop an implementation approach that appropriately recognizes the interplay between the subpart 1 and subpart 2 requirements. The rulemaking would also address how EPA will implement the transition from the 1-hour to the 8-hour standard.¹⁴

In June 2003, EPA proposed a clean air ozone implementation rule with options for transitioning areas from the old 1-hour ozone standard to the new 8-hour standard.¹⁵ In July 2003, states and tribes made their recommended classification designations; 412 counties were included as nonattainment for ozone in those recommendations. EPA responded to those recommendations in December 2003, determining that 506 counties should be deemed nonattainment.¹⁶ The Rule to Reduce Interstate Transport of Fine Particulate Matter and Ozone, or Clean Air Interstate Rule (CAIR), was proposed in December 2003 and issued in final form in 2005. This rule was designed to help non-attainment areas meet the 8-hour ozone standard.¹⁷ On July 11, 2008, the United States Court of Appeals for the D.C. Circuit vacated CAIR, finding "more than several fatal flaws in the rule" and

⁹*Whitman v. Am. Trucking Ass'n*, 531 U.S. 457, 121 S. Ct. 903 (2001).

¹⁰*Whitman v. Am. Trucking Ass'n*, 531 U.S. 457, 484, 121 S. Ct. 903 (2001).

¹¹73 Fed. Reg. 16436 (2008).

¹²CAA § 107(d)(1); TEA-21 § 6103(a).

¹³69 Fed. Reg. 23858, 23860 (Apr. 30, 2004).

¹⁴*See* § 12:43.

¹⁵68 Fed. Reg. 32792, 32813 (June 2, 2003).

¹⁶*See* <http://www.epa.gov/ozonedesignations>.

¹⁷*See* 69 Fed. Reg. 4566 (Jan. 30, 2004) (Proposed CAIR); 70 Fed. Reg. 25162 (May 12, 2005) (Final CAIR).

remanded the rule to EPA to develop a rule consistent with the Court's opinion.¹⁸ On December 23, 2008, on petitions for rehearing, the D.C. Circuit reinstated CAIR, remanding the rule without vacatur while EPA promulgates a replacement rule.¹⁹ EPA intends to issue a proposed CAIR replacement rule in the spring of 2010 and a final replacement rule one year later.

On April 30, 2004, EPA published the final "Phase 1" ozone implementation rule.²⁰ The Phase 1 Rule will be used by states and tribes to establish control programs to reduce ozone-forming pollution. EPA also issued its final non-attainment designations on that date.²¹ Both the designations and the Phase 1 Rule became effective June 15, 2004; the 1-hour ozone standard was formally revoked as of June 15, 2005, for most of the country, with exceptions for areas participating in an Early Action Compact (EAC). An August 3, 2005 Federal Register Notice²² removed from 40 C.F.R. Part 81 the 1-hour designations and classifications for all areas except EAC areas that have deferred effective dates for their designations under the 8-hour ozone standard. The former 1-hour ozone designations and classifications as of June 15, 2004, are being retained in subpart C of Part 81 for purposes of the anti-backsliding provisions of 40 C.F.R. § 51.905. 40 C.F.R. § 51.905(c) references subpart C of part 81 for the areas affected by the anti-backsliding regulation. Fourteen EAC areas were listed in subpart C and designated nonattainment with a deferred effective date. By April 2008, thirteen of these areas were designated attainment.²³ For EAC areas, the 1-hour standard is revoked one year after the effective date of their designation as attainment or nonattainment for the 8-hour ozone standard.²⁴

The Phase 1 rule provides that each area with a 1-hour ozone design value at or above 0.121 ppm is subject to subpart 2 and classified thereunder based on its 8-hour design value. All other areas were subject to the subpart 1 requirements and deemed "Basic Nonattainment" areas. EPA first determined which 8-hour areas were covered under which subpart. Subpart 2 areas were then be classified as marginal, moderate, serious, severe or extreme based on the area's 8-hour design value at the time of designation. Since Table 1 of CAA § 181 is based on 1-hour design values, the Phase 1 rule provides a table translating the 1-hour design values to

¹⁸North Carolina v. EPA, 531 F.3d 896 (D.C. Cir. 2008) (per curiam).

¹⁹North Carolina v. EPA, 550 F.3d 1176 (D.C. 2008).

²⁰69 Fed. Reg. 23951 (Apr. 30, 2004). The proposed rule was published June 2, 2003. 68 Fed. Reg. 32802. Following publication of the final Phase 1 rule, EPA received three petitions pursuant to CAA § 307(b)(7)(B) requesting reconsideration of various portions of the rule, and reconsideration was granted as to three issues on September 23, 2004. Various revisions to the Phase 1 rule resulting from those petitions were published. *See* 70 Fed. Reg. 30592, 30604 (May 26, 2005); 70 Fed. Reg. 39413 (July 8, 2005). On December 22, 2006, the D.C. Circuit Court of Appeals vacated the Phase 1 Implementation Rule, seemingly in its entirety. *South Coast Air Quality Management District, et al., v. EPA*, 472 F.3d 882 (D.C. Cir. 2006) reh'g denied, 489 F.3d 1245 (D.C. Cir. 2007) (clarifying that the vacatur was limited to the issues on which the court granted the petitions for review). EPA requested rehearing, and on June 8, 2007, the Court clarified that the vacatur applied only to the extent that it upheld petitioners' challenges. Therefore, only certain portions of the Phase 1 rule were vacated: (1) provisions placing 8-hour ozone nonattainment areas under subpart 1, part D, title I of the CAA instead of subpart 2; and (2) provisions waiving obligations under the revoked 1-hour standard for NSR, section 185 penalty fees, and contingency measures for failure to attain or to make reasonable progress toward attainment of the 1-hour standard.

²¹69 Fed. Reg. 23858 (Apr. 30, 2004).

²²70 Fed. Reg. 44470 (Aug. 3, 2005).

²³73 Fed. Reg. 17897 (Apr. 2, 2008). The Denver Subpart 1 EAC area was designated nonattainment for the 8-hour standard, effective November 20, 2007. 72 Fed. Reg. 53952 (Sept. 21, 2007).

²⁴40 C.F.R. § 50.9(b); 70 Fed. Reg. 44470.

8-hour values.²⁵ The states or tribes could request within a lower or higher classification in accordance with CAA §§ 181(a)(4) and 181(b)(3).

Thus, under the Phase 1 rule, many nonattainment areas for ozone were subject to only the Subpart 1, or “Basic Nonattainment” requirements, while fewer were subject to more stringent requirements. With one exception, EPA is not further classifying nonattainment areas covered under subpart 1; the Phase 1 rule creates an “overwhelming transport” classification for subpart 1 areas that demonstrate they are affected by overwhelming transport of ozone and its precursors and demonstrate that they meet the definition of a rural transport area in CAA § 182(h). This is consistent with CAA § 172(a)(1), which gives EPA the discretion to create classifications for subpart 1 areas.²⁶

The Phase 2 Ozone Rule was published on November 29, 2005.²⁷ The Phase 2 Rule outlines emissions control and planning requirements that states, tribes, and local governments must address in their SIPs to achieve the 8-hour ozone standard. The Rule includes guidelines on making attainment demonstrations and performing the requirement modeling, demonstrating reasonable further progress, and making RACM and RACT demonstrations. The Phase 2 Rule also codifies NO_x as an ozone precursor for attainment and unclassifiable areas.²⁸

On January 27, 2007, the Natural Resources Defense Council (NRDC) filed a petition for review of EPA’s final Phase 2 rule in the D.C. Circuit Court of Appeals, challenging EPA’s implementation of RFP statutory provisions. NRDC alleged that allowing certain NO_x and VOC emissions reductions achieved at sources outside a nonattainment area to be credited towards that area’s reasonable further progress (RFP) SIP requirements is unlawful and arbitrary without adding emissions from other outside sources to the RFP baseline. EPA requested a partial voluntary remand from the Court on July 17, 2007 in order to re-evaluate and consider whether to revise the RFP interpretation. In response to EPA’s motion for a partial voluntary remand, NRDC requested that the Court also nullify the RFP provision. On November 2, 2007, the Court vacated and remanded the portion of the Phase 2 Rule that permitted credit for reductions of VOC and NO_x from outside nonattainment areas. On August 11, 2009 EPA published a final rule revising its previous RFP interpretation.²⁹ Now, if a state allows consideration of precursor emissions for an area outside the nonattainment area, EPA expects state review to reflect emissions changes from all sources in the area outside the nonattainment area.

On April 30, 2004, as required by the consent decree, EPA published its final rule establishing the 8-hour non-attainment designations; areas with a 1-hour ozone design value below 0.121 ppm are known as “Basic Nonattainment Areas” (or “Subpart 1 areas”); these areas have attainment deadlines of between five to ten years after designation. Areas whose 1-hour design value is greater than or equal to 0.121 ppm fall under the more specific requirements of Subpart 2 and are classified as “marginal,” “moderate,” “serious,” “severe,” or “extreme” based on their 8-hour design value. These areas have attainment deadlines from 2007-2021.

Under the Phase 1 rule, the classifications for 8-hour ozone nonattainment areas

²⁵69 Fed. Reg. 23951, 23958 (Apr. 30, 2004); the translation table is codified at 40 C.F.R. § 51.903.

²⁶69 Fed. Reg. 23958 (Apr. 30, 2004). The rule governing areas affected by overwhelming transport will be codified at 40 C.F.R. § 51.904. It was the subject of a petition for reconsideration filed by Earthjustice; EPA granted the Earthjustice petition on January 10, 2005. *See* 70 Fed. Reg. 71612, 71613 (Nov. 29, 2005). *See* discussion above in note 17 regarding vacatur of certain provisions in the Phase 1 Implementation Rule.

²⁷70 Fed. Reg. 71612 (Nov. 29, 2005).

²⁸70 Fed. Reg. 71612 (Nov. 29, 2005).

²⁹74 Fed. Reg. 40074 (Aug. 11, 2009). *See* 73 Fed. Reg. 42294 (July 28, 2008) for the proposed rule.

are provided below.

§ 12:38 The Clean Air Act Amendments of 1990—Ozone nonattainment areas—Classifications—Attainment deadlines and control requirements—Subpart 1 Basic Nonattainment Areas

Basic Nonattainment areas include areas that violate the ozone standard but have a 1-hour design value of less than 0.121 ppm (translating to an 8-hour design value of less than 0.085 ppm). Basic Nonattainment areas were required to submit their SIP revisions addressing attainment by April 2007. Their SIP revisions must address transportation conformity and general conformity and must include a revised emissions inventory. They must also contain provisions to demonstrate RFP through annual incremental emissions reductions, require RACT for existing sources, and establish a non-attainment New Source Review program for new sources, both based on a 100 tons per year (tpy) threshold. Other measures are not mandated. NSR offsets must be at least 1 to 1.¹ As of December 15, 2009, there were 22 “Former subpart 1” areas.²

§ 12:39 The Clean Air Act Amendments of 1990—Ozone nonattainment areas—Classifications—Attainment deadlines and control requirements—Subpart 2 Marginal Areas

Marginal areas are areas with a 1-hour design value of 0.121 to 0.138 ppm (translating to an 8-hour design value of 0.085 ppm to 0.092 ppm). SIP revisions for Marginal areas must include everything required of Basic Nonattainment areas; in addition, NSR offsets must be at least 1.1 to 1, and the amount of emissions that trigger NSR is lowered from 100 tpy to 50 tpy for VOC in the Ozone Transport Region.¹ As of December 15, 2009, one area in the country is designated as “marginal.”²

§ 12:40 The Clean Air Act Amendments of 1990—Ozone nonattainment areas—Classifications—Attainment deadlines and control requirements—Subpart 2 Moderate Areas

These are areas with a 1-hour design value of 0.138 to 0.160 ppm (translating to an 8-hour design value of 0.092 ppm to 0.107 ppm). SIP revisions for Moderate areas, which were due June 15, 2007, must include everything required of Marginal areas, as well as a Basic Inspection and Maintenance (I&M) program and NSR offsets of 1.15 to 1. The RFP demonstration for Moderate areas is a 15 percent VOC

[Section 12:38]

¹69 Fed. Reg. 23858 (Apr. 30, 2004), codified at 40 C.F.R. Part 81; CAA § 182; *see also* <http://www.epa.gov/air/oaqps/glo/designations/ozonesamplerrequirements.htm>.

²69 Fed. Reg. 23858 (Apr. 30, 2004), codified at 40 C.F.R. Part 81; *see also* <http://www.epa.gov/oar/oaqps/greenbk/gnc.html>; <http://www.epa.gov/air/oaqps/glo/designations/ozonesamplerrequirements.htm>; <http://www.epa.gov/air/oaqps/glo/designations/ozonesamplerrequirements.htm>. Due to the Phase 1 rule vacatur, these areas are called “Former subpart 1” areas until they are reclassified.

[Section 12:39]

¹69 Fed. Reg. 23858 (Apr. 30, 2004), codified at 40 C.F.R. Part 81; CAA § 182; *see also* <http://www.epa.gov/air/oaqps/glo/designations/ozonesamplerrequirements.htm>.

²69 Fed. Reg. 23858 (Apr. 30, 2004), codified at 40 C.F.R. Part 81; *see also* <http://www.epa.gov/oar/oaqps/greenbk/gnc.html>.

reduction from baseline by no later than 2008.¹ As of December 15, 2009, twenty-three areas are designated as “moderate” nonattainment, with an attainment deadline of June 2010.²

§ 12:41 The Clean Air Act Amendments of 1990—Ozone nonattainment areas—Classifications—Attainment deadlines and control requirements—Subpart 2 Serious Areas

These areas are areas with a 1-hour design value of 0.160 to 0.180 ppm (translating to an 8-hour design value of 0.107 ppm to 0.120 ppm). SIP revisions for Serious areas, which were due June 15, 2007, must include everything required of Moderate areas, as well as an Enhanced I&M program and NSR offsets of 1.2 to 1; the NSR trigger is 50 tpy across the area. The RFP demonstration for Serious areas, in addition to the RFP demonstration required for Moderate areas, are an additional 9 percent VOC/NO_x reductions for years 7-9 after the 1990 Amendments.¹ As of December 15, 2009, four areas are designated as “serious,” with an attainment deadline of June 2013.²

§ 12:42 The Clean Air Act Amendments of 1990—Ozone nonattainment areas—Classifications—Attainment deadlines and control requirements—Subpart 2 Severe Areas

The “Severe” classification has been broken down into two subclassifications, with Severe 15 areas being areas with a 1-hour design value of 0.180 to 0.190 ppm (translating to an 8-hour design value of 0.120 ppm to 0.127 ppm), with 15 years to attain compliance. Severe 17 areas are areas with a 1-hour design value of 0.190 to 0.280 ppm (translating to an 8-hour design value of 0.127 ppm to 0.187 ppm), with 17 years to attain compliance. SIP revisions for Severe areas, which were due in 2007, must include everything required of Serious areas, as well as (1) a clean fuel vehicles/reformulated gasoline program; (2) a definition of “major source” based on potential to emit of 25 tpy; (3) severe limitations on the ability of modified sources to “net out” of NSR; (4) transportation reduction/carpool requirements; (5) provision to require all major sources to have either 1:3 to 1 emissions offsets or achieve BACT instead of RACT; (6) if attainment is not achieved by the deadline, provision to assess major sources of VOCs emissions fees of \$5,000 per ton in excess of 80 percent of what they were allowed to emit as of the attainment date; and (7) the RFP demonstration for Serious areas plus 9 percent VOC/NO_x for years 9-15 after the 1990 amendments.¹

One area of the country, Houston-Galveston-Brazoria, is currently classified as

[Section 12:40]

¹69 Fed. Reg. 23858 (Apr. 30, 2004), codified at 40 C.F.R. Part 81; CAA § 182; *see also* <http://www.epa.gov/air/oaqps/glo/designations/ozonesamplerrequirements.htm>.

²69 Fed. Reg. 23858 (Apr. 30, 2004), codified at 40 C.F.R. Part 81; *see also* <http://www.epa.gov/oar/oaqps/greenbk/gnc.html>.

[Section 12:41]

¹69 Fed. Reg. 23858 (Apr. 30, 2004), codified at 40 C.F.R. Part 81; CAA § 182; *see also* <http://www.epa.gov/air/oaqps/glo/designations/ozonesamplerrequirements.htm>.

²69 Fed. Reg. 23858 (Apr. 30, 2004), codified at 40 C.F.R. Part 81; *see also* <http://www.epa.gov/oar/oaqps/greenbk/gnc.html>.

[Section 12:42]

¹69 Fed. Reg. 23858 (Apr. 30, 2004), codified at 40 C.F.R. Part 81; CAA § 182; *see also* <http://www.epa.gov/air/oaqps/glo/designations/ozonesamplerrequirements.htm>.

“Severe 15,” as of December 15, 2009.² As of December 15, 2009, one area has been classified as “severe nonattainment” for the 8-hour standard, the Los Angeles South Coast Air Basin. This area has until June 2021 to come into attainment.³

§ 12:43 The Clean Air Act Amendments of 1990—Ozone nonattainment areas—Classifications—Attainment deadlines and control requirements—Subpart 2 Extreme Areas

Extreme areas are areas with a 1-hour design value of 0.280 ppm and above (translating to an 8-hour design value of 0.187 ppm or above). The Extreme Area must attain the NAAQS within 20 years of the effective date of the nonattainment designation. These areas must implement all measures required of Severe Areas and must also (1) implement a major source threshold of 10 tpy; (2) subject all modifications increasing VOC emissions to NSR, without netting; (3) require all utility, industrial, and commercial boilers that emit more than 25 tpy of NO_x to burn clean fuel or install control technology, such as catalytic reduction systems; (4) impose special transportation control measures during peak traffic hours; and (5) require offsets of 1.5 to 1 or impose BACT instead of RACT on all major VOC sources.¹ No areas of the country are currently classified as “extreme” as of December 15, 2009.²

§ 12:44 The Clean Air Act Amendments of 1990—Ozone nonattainment areas—Classifications—Attainment deadlines and control requirements—Transitional Areas

As set forth above, for most areas of the country, the 8-hour ozone designations became effective on June 15, 2004. The Phase 1 Rule provided that the 1-hour ozone NAAQS would no longer apply for an area one year following the effective date of the area’s designation for the 8-hour NAAQS.¹ For Early Action Compact areas, EPA deferred the effective date of the 8-hour nonattainment designations and classifications.²

By December 31, 2002, EPA had entered into Early Action Compacts (EACs) with 33 communities (each generally comprised of several counties). Fourteen of those 33 communities did not meet the 8-hour ozone NAAQS. Areas with EACs could obtain a deferral of the designation as “nonattainment” for the 8-hour standard.³ To receive the first deferral, until September 30, 2005, EAC areas agreed to reduce ground-level ozone pollution earlier than the CAA would require. The EACs contain milestones for action that must be met in order for the deferral to remain effective. Those milestones are: (1) areas wishing to participate were required to submit EACs for EPA signature by December 31, 2002; (2) preliminary lists and descriptions of potential local control measures under consideration were due by June 16,

²69 Fed. Reg. 23858 (Apr. 30, 2004), codified at 40 C.F.R. Part 81; CAA § 182; *see also* <http://www.epa.gov/oar/oaqps/greenbk/gnc.html>.

³69 Fed. Reg. 23858 (Apr. 30, 2004), codified at 40 C.F.R. Part 81; CAA § 182; *see also* <http://www.epa.gov/oar/oaqps/greenbk/gnc.html>.

[Section 12:43]

¹69 Fed. Reg. 23858 (Apr. 30, 2004), codified at 40 C.F.R. Part 81; CAA § 182; *see also* <http://www.epa.gov/air/oaqps/glo/designations/ozonesamplerrequirements.htm>.

²40 C.F.R. Part 81; *see also* <http://www.epa.gov/oar/oaqps/greenbk/gnc.html>.

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¹70 Fed. Reg. 44470 (Aug. 3, 2005); 69 Fed. Reg. 23858 (Apr. 30, 2004).

²69 Fed. Reg. 23858, 23868-69 (Apr. 30, 2004).

³70 Fed. Reg. 44470 (Aug. 3, 2005); 69 Fed. Reg. 23858 (Apr. 30, 2004).

2003; (3) a complete local plan, including specific, quantified, and permanent control measures, was due to the states by March 31, 2004; (4) the states in turn must submit adopted local measures to EPA as an SIP revision by December 31, 2004; (5) either as of the 2005 Ozone Season or December 31, 2005, states with EAC areas were required to implement the EAC control measures in the SIP; and (6) a report on the success of those measures and the ability to improve air quality and NO_x and VOC reductions was due to EPA by June 30, 2006. By December 31, 2007, the EAC areas were to be in compliance with the 8-hour ozone NAAQS.⁴ As indicated previously, thirteen of the fourteen EAC areas designated nonattainment are now in attainment (with the exception of Denver).

EPA's final EAC Deferral/designation rule, published April 30, 2004, as amended June 18, 2004, determined that out of 31 active compact areas, 17 areas were meeting the 8-hour ozone NAAQS as of the time of designation in April 2004 and were so designated attainment, with an effective date of June 15, 2004.⁵ For the most part, EAC areas designated as "attainment" have agreed to continue participating in their compacts and meet their obligations on a voluntary basis.⁶

Most of the nonattainment deferred EAC areas qualified as "Basic Nonattainment" EACs, meaning they were subject to an Early Action Company and had a 1-hour design value of less than 0.121 ppm. One area, however, had a 1-hour design value of 0.121 to 0.138 ppm, the Greensboro-Winston Salem-High Point North Carolina area. All EAC areas had an attainment deadline of December 2007 for the 8-hour ozone standard.⁷

§ 12:45 The Clean Air Act Amendments of 1990—Nonattainment SIPs for other pollutants

The Amendments include new subparts for carbon monoxide and PM₁₀ nonattainment SIPs, as well.¹ These sections provide for division of nonattainment areas into moderate and serious classes, with later attainment deadlines and more stringent control requirements for the latter.² For SO₂, NO_x and lead nonattainment areas,

⁴Proposed Deferral for EAC Areas, 68 Fed. Reg. 70108 (Dec. 16, 2003); Final Deferral for EAC Areas, 69 Fed. Reg. 23858, 23865 (Apr. 30, 2004).

⁵69 Fed. Reg. 23858 (Apr. 30, 2004); 69 Fed. Reg. 34080 (June 18, 2004).

⁶69 Fed. Reg. at 23869 (Apr. 30, 2004).

⁷<http://www.epa.gov/oar/oaqps/greenbk/gnc.html>.

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¹In 2006, EPA revised the PM₁₀ and PM_{2.5} standards. Annual PM_{2.5} remained at 15 micrograms per cubic meter (ug/m³). 71 Fed. Reg. 61144 (Oct. 17, 2006). EPA revised the 24-hour PM_{2.5} standard to 35 ug/m³. EPA also retained the 24-hour PM₁₀ standard but revoked the annual PM standard. In 2009, the D.C. Circuit Court of Appeals remanded parts of the 2006 revised standards to EPA for reconsideration. *Am. Farm Bureau Federation v. EPA*, 559 F.3d 512, 519 (D.C. Cir. 2009).

For more information, see <http://www.epa.gov/air/particles/actions.html>.

²For carbon monoxide, new subpart 3 of part D creates a simplified version of the ozone regulatory scheme. All nonattainment areas must be classified as Moderate Areas or Serious Areas. Revisions to SIPs for both classes must include updated emission inventories, quantitative "milestones" for reasonable further progress, contingency provisions should milestones be missed, and other controls. Moderate Areas were required to attain the NAAQS by December 31, 1995, and were to implement mobile source I&M programs. Serious Areas were required to attain the NAAQS by December 31, 2000, and were to require use of oxygenated gasoline by 1993 or demonstrate that such gasoline is not necessary to achieve timely attainment and, if stationary sources are "serious" contributors, must adapt a reduced fifty ton per year major source threshold. Clean Air Act §§ 186, 187, as added by § 104 of the 1990 Clean Air Act Amendments.

New subpart 4 of part D classified all PM₁₀ nonattainment areas as Moderate Areas initially, with an attainment deadline of December 31, 1994. Those that "cannot practically" attain the NAAQS

the Amendments specified a new attainment deadline of November 15, 1995.³

§ 12:46 Other SIP issues—Judicial review of SIP actions

The Clean Air Act provides two avenues for judicial review. Section 304 authorizes citizen suits in the district courts to enforce EPA's nondiscretionary duties under the Act.¹ Section 307 authorizes suits in the courts of appeals to challenge final actions.² National standards and other regulatory actions with nationwide scope—for example, promulgation of rules governing SIPs—must be brought in the D.C. Circuit.³ Challenges of SIP approvals, orders, and other actions with local impact are brought in the circuit where that impact is felt.⁴ The final actions that may be challenged include those listed in § 307(b)(1) and all other final actions under the Act, including those that did not arise in a notice and comment process.⁵ The dividing line between the two types of review is conceptually clear, but quickly becomes blurred in the complex process of SIP development and approval as shaped by EPA over the years.⁶

As a practical matter, it can be difficult to obtain effective review of the adequacy of EPA's overall handling of a state's SIP. Review of the state action generally can only be had in state court, but citizens may be able to sue a state in federal court for failure to implement the SIP.⁷ Most federal SIP actions are reviewable. EPA inaction on a SIP submittal (either a new plan or revision) past the statutory deadline

by this deadline may be reclassified by the state to Serious Areas, which have an additional ten years from *designation* (not classification) to attain the NAAQS, with the possibility of one five-year extension. For such Serious Areas, "major sources" are those with the potential to emit seventy tons per year of PM₁₀. Clean Air Act §§ 188, 189, as added by § 105 of the 1990 Clean Air Act Amendments.

EPA has promulgated an addendum addressing PM₁₀ nonattainment areas as a part of its General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990. 59 Fed. Reg. 41998 (Aug. 16, 1994).

³Clean Air Act §§ 191, 192, as added by § 106 of the 1990 Clean Air Act Amendments. Guidance addressing SIP revisions for reasonably available control measures for lead is found in State Implementation Plans for Lead Nonattainment Areas; Addendum to the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990. 58 Fed. Reg. 67748 (Dec. 22, 1993). Guidance for SIPs for NO_x nonattainment areas is found in State Implementation Plans; Nitrogen Oxides Supplement to the General Preamble; Clean Air Act Amendments of 1990; Implementation of Title 1. 59 Fed. Reg. 31238 (June 17, 1994).

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¹42 U.S.C.A. § 7604(a)(2).

²42 U.S.C.A. § 7607(b); 40 C.F.R. pt. 23.

³42 U.S.C.A. § 7607(b); 40 C.F.R. pt. 23.

⁴42 U.S.C.A. § 7607(b); 40 C.F.R. pt. 23. In *Texas Municipal Power Agency v. EPA*, 89 F.3d 858, 866-67, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 21541, 21545 (D.C. Cir. 1996), the provision requiring actions with local effects to be brought in local courts of appeals, Clean Air Act § 307(b), 42 U.S.C.A. § 7607(b), was held to be a venue provision and not jurisdictional. Therefore, it can be waived if EPA fails to object.

⁵*Harrison v. PPG Indus., Inc.*, 446 U.S. 578, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20353 (1980). In *Louisiana Env'tl. Action Network v. Browner*, 87 F.3d 1379, 1385, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 21561, 21564 (D.C. Cir. 1996), the court noted that statutory time limitations on review of EPA's actions run only if a challenge is ripe for review.

⁶As environmental law matures, it becomes more difficult to challenge EPA's programmatic activities. In *Louisiana Env'tl. Action Network v. Browner*, 87 F.3d 1379, 26 Env'tl. L. Rep. 21561 (D.C. Cir. 1996), the court rejected a challenge by environmental groups to state program approval rules under § 112(l) of the Clean Air Act concerning hazardous air pollutants. The court found that the environmental groups lacked standing to sue because they could show no concrete or imminent injury.

⁷See, e.g., *Citizens for a Better Env't v. Deukmejian*, 731 F. Supp. 1448, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 21047 (N.D. Cal. 1990) (§ 304 citizen suit lies against state for failing to carry out SIP provisions). Review of the state action in state court is a matter of state law, which varies with the jurisdiction. See, e.g., *EPA v. Pollution Control Bd.*, 426 N.E.2d 1264, 12 Env'tl. L. Rep. (Env'tl. L. Inst.)

can be challenged in district court under § 304.⁸ Where EPA inaction on part of a SIP is integral to the adequacy of the SIP as a whole, a court of appeals may take jurisdiction over the inaction.⁹ Final EPA approval or disapproval of a SIP may be reviewed in the relevant court of appeals.¹⁰ The same is true of a final EPA action partially approving and partially disapproving a SIP submittal,¹¹ or EPA action promulgating a federal SIP under § 110(c).¹² EPA conditional approvals, which are titled “final rules,” but which leave open the status of the SIP, also must be challenged in the courts of appeals.¹³ If EPA disapproves a SIP submittal or portion thereof, either by final action¹⁴ or by a “pocket veto” of inaction,¹⁵ EPA may be subject to a § 304 suit for failure to promulgate a § 110(c) federal SIP.¹⁶ As a result, a group wishing to claim that EPA approved inadequate SIP revisions, and should instead have promulgated a FIP, has to bring costly parallel actions in appellate and district court.¹⁷ EPA notices of deficiency, issued under § 110(c) to inform states that their SIPs are not adequate, have been held to be unreviewable, because they are not final actions.¹⁸ Whether EPA’s decision not to issue a notice of deficiency may be challenged is unclear.

§ 12:47 Other SIP issues—Stationary source enforcement

The elaborate system of state implementation plans and federal emission limits that regulates the operation of stationary sources of air pollution is meaningless without enforcement. Much of the effort that goes into designing these complex programs is intended simply to make the requirements enforceable. Enforcement is

20253 (Ill. App. Ct. 1981) (state court decision striking down SIP provision renders provision unenforceable by state, even though provision remains a federal regulation).

⁸*Bethlehem Steel Corp. v. EPA*, 782 F.2d 645, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20268 (7th Cir. 1986); *Citizens for a Better Env’t v. Costle*, 515 F. Supp. 264, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20963 (N.D. Ill. 1981).

⁹*Indiana & Michigan Elec. Co. v. EPA*, 733 F.2d 489, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20506 (7th Cir. 1984).

¹⁰*See, e.g.,* *Natural Res. Def. Council v. EPA*, 507 F.2d 905, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20032 (9th Cir. 1974) (Arizona SIP); *Natural Res. Def. Council v. EPA*, 494 F.2d 519, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20345 (2d Cir. 1974) (New York SIP); *Natural Res. Def. Council v. EPA*, 489 F.2d 390, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20204 (5th Cir. 1974), rev’d and remanded sub nom. *Train v. Natural Res. Def. Council*, 421 U.S. 60, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20264 (1975) (Georgia SIP); *Natural Res. Def. Council v. EPA*, 483 F.2d 690, 3 Env’tl. L. Rep. (Env’tl. L. Inst.) 20821 (8th Cir. 1973) (Iowa SIP); *Natural Res. Def. Council v. EPA*, 481 F.2d 116, 3 Env’tl. L. Rep. (Env’tl. L. Inst.) 20579 (10th Cir. 1973) (Colorado, New Mexico, Utah SIPs); *Natural Res. Def. Council v. EPA*, 478 F.2d 875, 3 Env’tl. L. Rep. (Env’tl. L. Inst.) 20375 (1st Cir. 1973) (Rhode Island, Massachusetts SIPs).

¹¹*Bethlehem Steel Corp. v. EPA*, 782 F.2d 645, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20268 (7th Cir. 1986).

¹²*Cleveland Elec. Illuminating Co. v. EPA*, 572 F.2d 1150, 8 Env’tl. L. Rep. (Env’tl. L. Inst.) 20312 (6th Cir. 1978).

¹³*Conn. Fund for the Env’t v. EPA*, 672 F.2d 998, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20306; *City of Seabrook v. EPA*, 657 F.2d 1349, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 21058 (5th Cir. 1981); *Citizens for a Better Env’t v. Costle*, 515 F. Supp. 264, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20963 (N.D. Ill. 1981).

¹⁴*Bethlehem Steel Corp. v. EPA*, 782 F.2d 645, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20268 (7th Cir. 1986).

¹⁵*Bethlehem Steel Corp. v. EPA*, 782 F.2d 645, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20268 (7th Cir. 1986).

¹⁶*Bethlehem Steel Corp. v. EPA*, 782 F.2d 645, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20268 (7th Cir. 1986).

¹⁷*Bethlehem Steel Corp. v. EPA*, 782 F.2d 645, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20268 (7th Cir. 1986). *See also* *Citizens for a Better Env’t v. Costle*, 515 F. Supp. 264, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20963 (N.D. Ill. 1981).

¹⁸*Illinois v. EPA*, 621 F.2d 259, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20351 (7th Cir. 1980).

the engine that drives the entire complicated Clean Air Act machine. The 1990 Amendments rebuilt this enforcement engine and made it significantly more powerful.

The Act's enforcement scheme has five elements. The first is institutional responsibility for enforcement, which the Clean Air Act splits among EPA, the states, and private citizens. The second element is the enforceable, source-specific emission limit. Third is broad authority to investigate and document possible violations of its provisions. Fourth is the process by which enforcers choose their responses once violations have been detected. The fifth element of Clean Air Act enforcement is imposition of sanctions on appropriate violators. Each of these pieces of the enforcement puzzle is critical to the overall effectiveness of the system.

§ 12:48 Other SIP issues—Stationary source enforcement—Institutional issues

Congress clearly did not believe the adage that too many cooks spoil the broth in the enforcement kitchen; the Clean Air Act makes it possible for almost anyone to be an enforcement chef. State implementation plans and federal emission limits may be enforced by states, EPA, and members of the public.

In this system of overlapping enforcement responsibility, federal enforcement plays a key role. States may need EPA's help in large and complex enforcement actions because the federal agency has more technical and legal resources available. States may not always be willing or able to enforce against all violators; if not, Congress intended EPA or citizens to step in to fill the gap. And EPA enforcement can provide a measure of national uniformity in this final phase of implementation.

In the early 1980s, critics challenged the overall level of EPA stationary source enforcement activity.¹ Two indicators—the number of cases referred by EPA regional offices to EPA headquarters for consideration of litigation and the number of cases referred by EPA to the Department of Justice for initiation of litigation—showed a dramatic decline in enforcement in 1982, with a return to earlier levels in 1984.² The budget of the enforcement office is another indicator of the level of federal enforcement effort. Air enforcement expenditures were cut dramatically in the early 1980s and later leveled off at 1975 levels.³ For EPA to maintain a referral level it achieved at a time when its air enforcement budget was roughly double its current size suggests that other types of enforcement activity, most likely administrative actions, must have diminished.

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¹*See, e.g.*, W. Drayton, *America's Toxic Protection Gap* 29-31 (1984) (citing a 75 percent rate of noncompliance with SIP opacity standards at facilities inspected at night in a test of a new laser-radar device for measuring opacity, and a 50 percent drop in the number of referrals to the Department of Justice under the Act).

²During fiscal years (FY) 1978-80, EPA averaged 100 air act referrals to headquarters and eighty-three to Justice. In FY 1981-83, the comparable numbers were forty-eight and fifty. EPA data, *cited in* ELI, *Citizen Suits* III-24, -27 (1984). In the first half of FY 1984, there were forty-eight referrals to headquarters and fifty to Justice, suggesting that EPA is now equalling or exceeding its pre-Reagan Administration enforcement litigation rates. The Air Enforcement Division reportedly "managed a docket of approximately 100 civil enforcement cases" in FY 1984, so the rate of referrals is staying up. EPA Air Enforcement Division, *FY 1984 Air Enforcement Highlights* (undated, copy on file at ELI) [hereinafter cited as *Enforcement Highlights*]. The earlier decline in judicial enforcement litigation was outpaced by an even greater decline in administrative enforcement. Air enforcement orders declined from an average of 170 per year in FY 1979-80 to 65 in FY 1981 and 21 in FY 1982. ELI, *Citizen Suits* III-32 (1984).

³EPA, *Summary of the 1986 Budget* 22 (Jan. 1985); Congressional Budget Office, *The Budget of the Environmental Protection Agency: An Overview of Selected Proposals for 1985*, at 84 (1984). A summary of EPA's 2006 budget is available at <http://www.epa.gov/ocfo/budget/2006/2006bib.pdf>.

Citizen enforcement also has begun to play a major role as the result of basic changes made in the 1990 Amendments. Congress authorized private citizens to bring suits in federal court to enforce the statute.⁴ Citizen enforcers must notify the violator and EPA of their intent to sue and must give way before diligently prosecuted federal or state actions, although they may intervene in such actions.⁵ The remedies initially available to these private attorneys general were limited to injunctive relief, but the 1990 Amendments authorize citizen suits for penalties.⁶ Citizen enforcement of the pollution control statutes took on a high profile in the early 1980s when a coalition of environmental groups launched a coordinated wave of hundreds of suits to enforce the Clean Water Act.⁷ The citizen suit provisions of the Clean Air Act saw much less use, because of the lack of penalty authority and because, unlike the Water Act, the Air Act did not require regulated companies to submit certified self-monitoring reports.⁸ The Water Act provides citizen enforcers with proof of violations in mandatory discharge monitoring reports from sources, while the Air Act has no equivalent self-monitoring requirement.⁹ The 1990 Amendments direct EPA to require major sources to submit periodic certifications of compliance (and noncompliance) which, like certified self-monitoring reports under the Water Act, may be deemed by the courts to be conclusive proof of any violations revealed therein.¹⁰ In the past, the most effective role for citizen enforcers under the Clean Air Act had been as intervenors in federal actions.¹¹ In the future, citizen groups will likely play a major role in enforcement of the Act.¹²

The agency has attempted to facilitate citizen enforcement of the Air Act by adopting a rule allowing the use of “any credible evidence” to prove or disprove

⁴Clean Air Act § 304, 42 U.S.C.A. § 7604.

⁵Old Clean Air Act § 304(b). EPA regulations concerning notice by citizen suit plaintiffs are located at 40 C.F.R. part 54.

⁶Clean Air Act § 304(a), amended by § 707(a) of 1990 Amendments. Penalties collected under the citizen suit provision are paid to the U.S. Treasury. Mitigation projects are allowable up to a \$100,000 cap. Clean Air Act § 304(g), 42 U.S.C.A. § 7604(g).

⁷33 U.S.C.A. §§ 1251 to 1376.

⁸This situation began to change following the decision in *Sierra Club v. Public Service Co. of Colorado*, 894 F. Supp. 1455, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 21461 (D. Colo. 1995), where a utility's opacity violations are based, in an evidentiary sense, on continuous emissions monitor data. For the first time, the argument was rejected that continuous emissions monitor measurements do not align with the formal “method” required to determine opacity violations. *See* 40 C.F.R. pt. 60, app. A (Method 9). These continuous emissions monitor data are collected routinely and in large volume by utilities, and typically are available to citizens. The citizen suit provision has received more use following enactment of EPA's credible evidence rule. *See, e.g., Sierra Club v. Tenn. Valley Auth.*, 430 F.3d 1337 (11th Cir. 2005).

⁹*See Sierra Club v. Ind. Ky. Elec. Corp.*, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 21100 (S.D. Ind. 1981), *aff'd*, 716 F.2d 1145, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20817 (7th Cir. 1983) (dismissing one of four actions to enforce the sulfur dioxide restrictions in the Indiana SIP on the grounds that because the provision had been invalid under state law when promulgated by EPA, there was no federal SIP provision for Sierra Club to enforce. The four actions represented the best cases the Club found out of some twenty citizen suit notices it filed concerning power plant SIP compliance).

¹⁰Clean Air Act § 114(a)(3), as added by § 702(b) of the 1990 Amendments.

¹¹*See, e.g., United States v. Nat'l Steel Corp.*, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20481 (E.D. Mich. 1983), *rev'd in part*, 767 F.2d 1176, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20678 (6th Cir. 1985). The Department of Justice now publishes notices of enforcement consent decrees in the *Federal Register*, thereby giving potential citizen intervenors an opportunity to become involved. *See, e.g.,* 50 Fed. Reg. 3424, 3425 (1985) (Department of Justice announces proposed consent decrees in *United States v. American Cyanamid Co.* and *United States v. Clark*).

¹²*See, e.g., Sierra Club v. Tenn. Valley Auth.*, 430 F.3d 1337 (11th Cir. 2005) (citizen's suit claiming opacity violation); *Sierra Club v. Georgia Power Co.*, 365 F. Supp. 2d 1297 (N.D. Ga. 2004), *rev'd in part*, 443 F.3d 1346 (11th Cir. 2006); *Grand Canyon Trust v. Public Serv. Co. of N.M.*, 294 F. Supp. 2d 1256 (D.N.M. 2003).

violations of the Air Act.¹³ Before this rule was adopted, a source's emission violations could be shown only by use of the prescribed reference test method. The credible evidence rule will allow not only reference test data, but also engineering calculations, emissions estimates, continuous emission monitoring data, and other information to prove a violation.¹⁴ Environmental groups have been quick to use the credible evidence rule in their citizen suits.¹⁵

§ 12:49 Other SIP issues—Stationary source enforcement—Enforceable requirements

The regulatory process is segmented so that challenges to the substance of emission control requirements must be resolved before enforcement begins and cannot be resurrected in enforcement actions.¹ The SIPs and national emission limits produce specific, measurable pollution control requirements for individual emission points, thus reducing or eliminating ambiguity over who must do what to comply with the law.² Statutory compliance and attainment deadlines provide unambiguous answers to the question of when compliance must be achieved. In this framework, it should be relatively easy to determine whether a violation exists and to bring an action to correct those violations that are found.

Congress' neat scheme to ensure relatively easy enforcement has been tested in SIP enforcement. The federal and state legal systems do not always mesh as well as intended to produce a single federal/state SIP for both parties to enforce.³ EPA may not enforce a state SIP provision that was invalid under state law when EPA ap-

¹³EPA published its final credible evidence rule in February 1997. 62 Fed. Reg. 8314 (Feb. 24, 1997), codified at 40 C.F.R. §§ 51.212(c), 52.12(c), 52.33, 60.11, and 61.12.

¹⁴Preamble to the Final Credible Evidence Rule, 62 Fed. Reg. at 8315. The Circuit Court of the District of Columbia has held that a challenge to the credible evidence rule on the ground that it caused a substantive change to air pollution standards was not ripe and that the rule did not invade the authority of the states under the Air Act. *Clean Air Implementation Project v. EPA*, 150 F.3d 1200, 28 Env'tl. L. Rep. (Env'tl. L. Inst.) 21519 (D.C. Cir. 1998); *Natural Res. Def. Council v. EPA*, 194 F.3d 130 (D.C. Cir. 1999).

¹⁵*See, e.g.,* *Sierra Club v. Tenn. Valley Auth.*, 430 F.3d 1337 (11th Cir. 2005) (citizen's suit claiming opacity violation); *Sierra Club v. Georgia Power Co.*, 365 F. Supp. 2d 1297 (N.D. Ga. 2004) (citizen's suit alleging power plant violated opacity standard; the court held that opacity system data could be used under the credible evidence rule to prove the violation; however, the credible evidence rule can also be used to explain an apparent violation); *Grand Canyon Trust v. Public Serv. Co. of N.M.*, 294 F. Supp. 2d 1256 (D.N.M. 2003) (Company could introduce evidence that continuous opacity monitor was incorrect).

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¹*See, e.g.,* *United States v. Borden, Inc.*, 572 F. Supp. 684, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20160 (D. Mass. 1983) (defendant may not challenge the substance of NESHAPs for vinyl chloride in an EPA action to enforce the standards).

²Enforcement targets are not always clear. For example, buildings and stacks that funnel emissions from an underground automobile tunnel in Boston are "indirect" sources, and not major stationary sources under the Clean Air Act. *See* *Sierra Club v. Larson*, 2 F.3d 462, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20070 (1st Cir. 1993).

³In the years following the enactment of the 1977 Amendments to the Clean Air Act, EPA insisted that emissions limitations must be "federally enforceable" in order to limit a source's "potential to emit" for regulatory purposes. This policy was adopted to provide a clear path to federal enforcement because sources use this mechanism to avoid permit or other program requirements. It was overturned, in the context of the hazardous air pollutant program under the 1990 Amendments to the Clean Air Act, in *National Mining Ass'n v. EPA*, 59 F.3d 1351, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 21390 (D.C. Cir. 1995). The court found no rationale in the Act for EPA to prefer federal enforcement over state enforcement or any other effective method of assuring compliance. This decision is a significant blow to those who believe that the threat of widespread federal enforcement is necessary to reduce pollution. *See also* *Chemical Mfrs. Ass'n v. EPA*, 70 F.3d 637 (D.C. Cir. 1995) (remanding "potential to emit" new source review regulation for reconsideration of federal enforceability requirements); *Clean Air*

proved it.⁴ Such loopholes may persist for a long time because of delays in resolving the validity of the state provision in state courts and EPA's reluctance to step in and promulgate a replacement FIP. If EPA approved a valid state program, it remains federally enforceable until revised by EPA, even while a state-approved revision awaits EPA approval.⁵ The Supreme Court resolved a dispute over the effect of EPA's unreasonable failure to act on a SIP revision within four months on the enforceability of the preexisting SIP. The Court held that the four-month deadline for EPA SIP review formerly found in § 110(a)(2) applied to new SIPs, not revisions, and, in any event, that Congress intended EPA's ability to enforce to be independent of its obligations in the SIP process.⁶ While EPA's enforcement authority is legally clear in such cases, as a practical matter the disparity between state and federal SIPs can confuse and delay the enforcement process.⁷ The operating permits required by the 1990 Amendments are intended, in part, to relieve these

Implementation Project v. EPA, 1996 WL 393118, No. 96-1224 (D.C. Cir. 6-28-96) (vacatur granted because federal enforceability not a requirement for calculation of potential to emit in Title V operating permit program); *Ogden Projects Inc. v. New Morgan Landfill Co.*, 911 F. Supp. 863, 875, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 20843 (E.D. Pa. 1996) (reversing finding of violation based on potential to emit, citing vacatur of federal enforceability requirements by the D.C. Circuit).

⁴*See, e.g.*, *Sierra Club v. Indiana-Kentucky Elec. Corp.*, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 21100 (S.D. Ind. 1981), *aff'd*, 716 F.2d 1145, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20817 (7th Cir. 1983).

⁵*See, e.g.*, *United States v. Ford Motor Co.*, 814 F.2d 1099, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20655 (6th Cir. 1987) (a state court consent decree to invalidate federally-approved SIP provisions does not preclude federal enforcement pending EPA approval of the replacement state SIP provisions); *United States v. Gen. Motors Corp.*, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 21309 (W.D. La. 1989) (source's compliance with state permit no bar to EPA enforcement of SIP); *United States v. AM Gen. Corp.*, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 20376 (N.D. Ind. 1990) (EPA may bring enforcement action despite failure to act within sixty days on state's proposal to redesignate area where defendant located from nonattainment to attainment); *United States v. Gen. Dynamics Corp.*, 755 F. Supp. 720, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 20785 (N.D. Tex. 1991) (compliance with state order does not constitute compliance with stricter SIP). *See also* *Illinois v. EPA*, 621 F.2d 259, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20351 (7th Cir. 1980). *Cf.* *Espinosa v. Roswell Tower, Inc.*, 32 F.3d 491, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21359 (10th Cir. 1994) (state cannot use delegation of federal enforcement power to bring an action in federal court after it first brought a state court enforcement action for the same violation).

⁶*Gen. Motors Corp. v. United States*, 496 U.S. 530, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20959 (1990).

⁷Several cases illustrate these points. In *United States v. National Steel Corp.*, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20481 (E.D. Mich. 1983), *rev'd in part*, 767 F.2d 1176, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20678 (6th Cir. 1984), the courts ruled that EPA could enforce a stipulated penalty provision in a consent decree concerning a SIP violation, even though the state had approved defendant's plan to use the bubble policy to fashion a compliance plan different from that spelled out in the decree. Since EPA had not approved the SIP revision, it could enforce the earlier version that it had approved. The court of appeals limited the number of days for which stipulated penalties could be assessed, however, to the 180 days specified in the decree. In *United States v. Continental Group, U.S.A.*, 595 F. Supp. 1021, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20131 (E.D. Wis. 1984), a district court ruled that a pending application for state approval of an alternative compliance plan does not require the court to abstain from hearing EPA's suit to enforce the federally approved version of the SIP, particularly where the state has moved very slowly to act on the alternative plan. Thus, EPA can enforce its SIP during the pendency of a state SIP revision, but the question of which SIP is enforceable throws another issue onto the table and may delay the enforcement process. In *United States v. Wheeling-Pittsburgh Steel Corp.*, 818 F.2d 1077, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20750 (3d Cir. 1987), the court held that neither the defendant's application for a bubble policy alternative emission limitation nor its severe economic hardship justified the district court's modification of an enforcement consent decree requiring compliance with existing SIP limitations by the 1985 deadline established by the Steel Industry Compliance Extension Act, Pub. L. No. 97-23, 95 Stat. 139 (1981), codified at 42 U.S.C.A. § 7413(e). In *United States v. Ford Motor Co.*, 736 F. Supp. 1539, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 21126 (W.D. Mo. 1990), EPA brought an action to enforce SIP provisions governing VOC emissions from a paint spray line. The defendant had been operating in violation of the basic SIP requirement, but in compliance with an alternative compliance plan (ACP) approved by the state, but not submitted to EPA as a SIP revision. The court held that EPA could not enforce the SIP provisions because the approved SIP provided for state approval of ACPs.

problems by creating a clear and readily available statement of the standards applicable to a specific source at a given time.⁸ However, the SIPs continue to be independently enforceable except for provisions that the permits state are not applicable, and, at any given time, the state-approved and EPA-approved SIPs for a category of sources may be different due to delays in the review and approval process.⁹ As a result, the history of intergovernmental confusion and conflict over enforcement may continue.¹⁰

§ 12:50 Other SIP issues—Stationary source enforcement—Monitoring

Monitoring for compliance with emission limitations is not an easy matter in most cases. Many limitations are stated in terms of mass emission rates, which can only be measured at the top of the smokestack. The emissions may be spot checked with a “stack test,” but the procedure is expensive and gives only one data point. Since the test often requires construction of scaffolding to gain access to the top of the stack, it is impossible for regulators to conduct surprise tests. Continuous emission monitoring (CEM) is required in a number of federal new source performance standards,¹ and states are required to mandate CEM in their SIPs.²

Regulators have relied on surrogate measurements as a result of these difficulties.

⁸See § 12:76. See also *United States v. Solar Turbines, Inc.*, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 20562 (M.D. Pa. 1989) (EPA may not enforce statutory obligation not to construct major new facility without PSD permit against a source that obtained state PSD permit deemed inadequate by EPA.). Enforcement against individual sources must be undertaken with care by EPA. After a local agency has issued an air quality permit and the receiving source has been modified accordingly, EPA cannot find the state in violation of Clean Air Act requirements, retroactively invalidate the individual source permit, and seek a penalty. *United States v. AM Gen. Corp.*, 34 F.3d 472, 24 *Envtl. L. Rep.* (Envtl. L. Inst.) 21497 (7th Cir. 1994).

⁹See Clean Air Act § 113(a)(1), as amended by § 701 of the 1990 Amendments (authorizing enforcement of any applicable “implementation plan or permit”).

Some state legislatures have acted to limit EPA’s ability to enforce state requirements that exceed minimum federal requirements. In Colorado, for example, air pollution provisions that are more stringent than federal requirements are, by law, not part of the Colorado SIP. Colo. Rev. Stat. § 25-7-105.1 (Supp. 1995).

¹⁰Several states have adopted environmental audit privilege laws designed to protect from forced disclosure the results of environmental audits, or self-evaluations, conducted by sources of air and other pollution. See, e.g., Colo. Rev. Stat. § 13-25-126.5 (Supp. 1995). Some of these laws also provide protections from civil penalties for problems corrected through self-audits. By threatening to deny approval of SIP programs, EPA challenged the ability of states to protect sources in these ways. See, e.g., 61 *Fed. Reg.* 32693, 32696 (June 25, 1996) (Texas operating permit program); see also *Inside EPA’s Clean Air Rep.*, Apr. 4, 1996, at 3 (EPA task force appointed to review policy guidance regarding state environmental audit laws.). EPA adopted its own “self-audit” policy in 2000, *Incentives for Self-Policing: Discovery, Correction and Prevention of Violations*, 65 *Fed. Reg.* 19618 (Apr. 11, 2000). This policy provides protection from criminal prosecution and reduction and possible elimination of the gravity-based portion of a penalty if a facility promptly discloses noncompliance discovered following a voluntary self-audit.

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¹See, e.g., 40 C.F.R. § 60.84(a) (continuous SO₂ monitors required for sulfuric acid plants); 40 C.F.R. § 60.45(a) (continuous SO₂, NO_x, CO or O₂, and opacity monitors required for fossil-fuel-fired steam generators built after Aug. 17, 1971). See also 40 C.F.R. § 60.13 (general rules for continuous monitoring); 40 C.F.R. part 60, App. B (performance standards for continuous monitors). In a case of first impression, a utility was found in violation of state opacity limitations, more than 19,000 times, using continuous emissions monitoring data as evidence. *Sierra Club v. Public Serv. Co. of Colo.*, 894 F. Supp. 1455, 25 *Envtl. L. Rep.* (Envtl. L. Inst.) 21461 (D. Colo. July 20, 1995, amended July 21, 1995). The court rejected the utility’s argument that evidence of a violation of an opacity limit is restricted to the observations of a trained smoke reader using Method 9 in 40 C.F.R. part 60 App. A-4. The case was settled for \$140 million in added pollution controls. *Inside EPA’s Clean Air Rep.*, May 30, 1996, at 25.

²See 40 C.F.R. § 51.214.

SIPs generally include “opacity” standards along with mass particulate standards.³ Opacity is a measure of the extent to which a plume of particulate smoke obscures light. Trained “smoke readers” can estimate the opacity following EPA’s promulgated Method 9.⁴ The vast majority of particulate enforcement activities are carried out through opacity tests. For sulfur dioxide from fuel burning sources, a useful surrogate for the amount of emissions is the amount of sulfur in the fuel, since, in the absence of sulfur dioxide controls, all the sulfur generally goes up the stack.⁵ Most SIPs therefore include sulfur-in-fuel standards, and compliance can be easily tested by sending samples of the fuel to the lab.⁶

On its face, § 114 of the Clean Air Act⁷ gives EPA broad investigatory authority.⁸ Paragraph (1) of section 114(a) authorizes EPA to require owners and operators of emission sources and others “subject to any requirement of” the Act to keep records, make reports, and sample emissions. Paragraph (2) of section 114(a) gives the EPA Administrator and “his authorized representative” authority to enter the premises of those persons identified in paragraph (1) or other places where required records are kept, and states that inspectors “may at reasonable times have access to and copy any records, inspect any monitoring equipment or method required under paragraph (1) and sample any emissions which such person is required to sample under paragraph (1).”⁹

In the 1990 Amendments, Congress added significantly to EPA’s information-gathering arsenal. For the first time, EPA may use its existing administrative subpoena authority under § 307(a) in enforcement proceedings.¹⁰ The Agency also may pay rewards for information leading to the imposition of criminal sanctions or civil penalties.¹¹ EPA must require major sources (and may require other sources) to submit “compliance certifications” stating whether the source is in compliance, whether any violations are continuous or intermittent, what method was used for determining the source’s compliance status, and other information.¹² Based on precedent under the Water Act, federal, state, and citizen enforcers certainly will take the position in enforcement cases that a compliance certification that reports violations is all the evidence necessary to prove noncompliance.

³See, e.g., Rules & Regs. of the State of Ga. § 391-3-1-.02(b) (visible emissions in excess of 40 percent opacity prohibited unless specifically authorized); Rules & Regs. of the State of Ga. § 391-3-1-.02(d)(i) (fuel burning sources with less than 10 million BTU heat input limited to 0.7 pounds of particulate per million BTU of heat input).

⁴40 C.F.R. part 60 App. A, Method 9. See *Portland Cement Ass’n v. Train*, 513 F.2d 506, 510, 5 *Env’tl. L. Rep.* (Env’tl. L. Inst.) 20341, 20342 (D.C. Cir. 1975) (“We are not warranted on the basis of this analysis to find that plume capacity is too unreliable to be used either as a measure of pollution or as an aid in controlling emissions.”). See also § 12:47 and later in this section.

⁵See, e.g., COMAR 10.18.07 (in the urbanized areas of the state, solid fuels may not exceed 1 percent sulfur, distillate fuel oils, 0.3 percent, and residual fuel oils, 1 percent).

⁶Odor problems are often regulated in SIPs but are notoriously difficult to enforce. See *Chester Residents Concerned for Quality Living v. Delcora Sewage Treatment Plant*, 39 *Env* 1860 (E.D. Pa. 1994) (upholding odor regulation against vagueness challenge); *Save Our Health Org. v. Recomp of Minn., Inc.*, 37 F.3d 1334, 25 *Env’tl. L. Rep.* (Env’tl. L. Inst.) 20589 (8th Cir. 1994) (defendant successfully avoided the assertion of an odor violation in a citizen suit under the Clean Air Act).

⁷42 U.S.C.A. § 7414.

⁸See generally *United States v. Tivian Labs., Inc.*, 589 F.2d 49, 9 *Env’tl. L. Rep.* (Env’tl. L. Inst.) 20008 (1st Cir. 1978), cert. denied, 442 U.S. 942 (1979) (constitutionality of section 114 upheld).

⁹Clean Air Act § 114(a)(1), (2), 42 U.S.C.A. § 7414(a)(1), (2).

¹⁰Clean Air Act § 307(a), as amended by § 703 of the 1990 Amendments.

¹¹Clean Air Act § 113(f), as added by § 701 of the 1990 Amendments. EPA has proposed regulations governing awards under this provision. See 59 *Fed. Reg.* 22795 (May 3, 1994) (to be codified at 40 C.F.R. pt. 65, subpt. BBB).

¹²Clean Air Act § 114(a)(3), as added by § 702(b) of the 1990 Amendments.

EPA uses its investigatory authority aggressively, but is not free from constraint. A person not directly regulated may be required to keep records under § 114(a)(1), if their business bears directly on others' compliance with the Act.¹³ EPA inspectors must obtain warrants absent permission.¹⁴ The grant of authority is sufficiently broad to allow types of inspections not enumerated in the statute, for example, aerial surveillance.¹⁵ EPA has been held to lack authority to use private contractors in § 114 inspections in the Sixth and Tenth Circuits, but has been held to have that authority by the Ninth Circuit.¹⁶ A general check on both reporting requirements and inspections is that they must further EPA's regulatory or enforcement responsibilities and must be reasonable.¹⁷ Section 114 provides that all information obtained by EPA under the section must be available to the public, unless the source of the information demonstrates that it should be held confidential to protect trade secrets; emission data may not be protected, however.¹⁸ Information about the configuration of a manufacturing plant not necessary to estimate emissions may be protected.¹⁹ Finally, § 114 requirements may be enforced with the other authorities of the Act.²⁰

EPA has used its § 114 investigatory authority to gather evidence to initiate several enforcement actions around the country against electric power plants for allegedly making changes to their facilities that constitute "modifications" subject to NSR/RSD.

§ 12:51 Other SIP issues—Stationary source enforcement—Enforcement decisionmaking

Discretion is essential in any area where the potential enforcement workload exceeds available resources. In addition, it can serve a useful function in alleviating inequitable results of strict enforcement of a broadly applicable requirement in indi-

¹³*Ced's Inc. v. EPA*, 745 F.2d 1092, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20869 (7th Cir. 1984) (a manufacturer of unregulated auto parts could be inspected under § 114, because the parts could be used to evade auto emission control requirements in violation of Clean Air Act § 203(a)(3)(B), 42 U.S.C.A. § 7522(a)(3)(B)).

¹⁴EPA has read the Supreme Court's decision in *Marshall v. Barlow's, Inc.*, 436 U.S. 307, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20434 (1978), requiring warrants for administrative inspections under the Occupational Safety and Health Act, as governing Clean Air Act inspections. The Court held that administrative agencies could obtain *ex parte* warrants if surprise were necessary to ensure an accurate compliance investigation and that a formal showing of probable cause was not necessary: The agency need only show that it wished to inspect a facility as part of a "neutral inspection scheme."

¹⁵*Dow Chem. Co. v. United States*, 476 U.S. 227, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20679 (1986). The Court held that EPA's aerial photography of Dow's chemical manufacturing facility was within EPA's authority under section 114 and not a warrantless search prohibited by the Fourth Amendment.

¹⁶*See United States v. Stauffer Chem. Co.*, 464 U.S. 165, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20064 (1984). The Court held that EPA was collaterally estopped from litigating the question of its authority to use private inspectors against Stauffer in the Sixth Circuit, *United States v. Stauffer Chem. Co.*, 684 F.2d 1174, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20810 (6th Cir. 1982), after losing on the identical issue against Stauffer in the Tenth Circuit. *Stauffer Chem. Co. v. EPA*, 647 F.2d 1075, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20562 (10th Cir. 1981). The Ninth Circuit decision was *In re Clean Air Administrative Inspection of the Bunker Hill Co.*, 658 F.2d 1280, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 21084 (9th Cir. 1981). In the aftermath of the court's decision, EPA may use contractor inspectors in the Ninth Circuit, but perhaps not against Stauffer, may not use them in the Sixth or Tenth Circuit against anyone, and may use them in other circuits, but not against Stauffer.

¹⁷Clean Air Act § 114(a), 42 U.S.C.A. § 7414(a), specifies the purposes for which EPA may use its investigatory authority. The Fourth Amendment imposes the reasonableness requirement. *See, e.g., Dow Chem. Co. v. United States ex rel. Burford*, 749 F.2d 307, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20858 (6th Cir. 1984).

¹⁸Clean Air Act § 114(b), 42 U.S.C.A. § 7414(b); 40 C.F.R. pt. 2, subpt. B.

¹⁹*RSR Corp. v. EPA*, 588 F. Supp. 1251, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20129 (N.D. Tex. 1984).

²⁰*United States v. Harford Sands, Inc.*, 575 F. Supp. 733, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20337 (D. Md. 1983).

vidual cases.¹ EPA probably has discretion not to take action upon finding a violation of the Act.²

Unfettered prosecutorial discretion makes less sense in the context of Clean Air Act enforcement. EPA is not just a direct enforcement agency; it also is an enforcement manager, responsible for ensuring effective action by ten regional offices and the states. This demands clear policies to govern enforcement. For each of its programs, EPA has developed unified guidance for the regions and states covering the selection of enforcement responses.³ The air program's June 1999 enforcement response policy⁴ addresses three issues. First, it identifies types of violations on which EPA will concentrate its attention. Second, the policy outlines a rough timetable by which EPA will judge the adequacy of state and regional enforcement against priority violators. Third, it describes cases in which EPA routinely will seek civil penalties. The policy is not a precise blueprint of EPA's air enforcement plans, but it does rather clearly identify the cases on which the Agency will be concentrating its limited resources.⁵

A special problem of prosecutorial discretion involves what to do when an individual source is in violation after a generally applicable compliance deadline. Before the 1977 Amendments, the Clean Air Act did not provide a formal mechanism other than § 110(f) for extending the compliance deadlines of individual sources beyond the attainment deadline. As the attainment clock first reached the eleventh hour in

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¹Strict enforcement approaches by EPA are not always upheld. In *Monsanto Co. v. EPA*, 19 F.3d 1201, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20697 (7th Cir. 1994), the Seventh Circuit overturned EPA's refusal to grant an extension of time to install controls. Monsanto had installed equipment required to meet the benzene new source performance standard. The equipment was designed with waste minimization in mind, but did not meet emission specifications. The court held that EPA should have allowed the company more time to perfect its system.

²See *Luckie v. Gorsuch*, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20400 (D. Ariz. 1983) (Clean Air Act § 113(b) appears to create a mandatory duty to take action against major source violators); *Conoco, Inc. v. Gardebring*, 503 F. Supp. 49, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20497 (N.D. Ill. 1980) (Clean Air Act § 113(a)(1) imposes a mandatory duty to follow a discretionary finding of a violation with an enforcement action). *But see* *Kentucky ex rel. Hancock v. Ruckelshaus*, 497 F.2d 1172, 4 Env'tl. L. Rep. (Env'tl. L. Inst.) 20484 (6th Cir. 1974), *aff'd* on other grounds *sub nom. Hancock v. Train*, 426 U.S. 167, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20555 (1976) (Clean Air Act's wording leaves EPA discretion whether or not to compel compliance after finding a violation and issuing a notice). *See also* *Royster-Clark Agribusiness, Inc. v. Johnson*, 391 F. Supp. 2d 21 (D.C. Cir. 2005).

³EPA has affirmed, by revising existing regulatory language, that the use of any credible evidence available is proper to prove a violation of the Clean Air Act, including compliance with emission limitations. 62 Fed. Reg. 8313 (Feb. 24, 1997) (referred to as the "credible evidence revisions" to existing regulations). This rule confirms that reference method results are not the only evidence by which EPA, states, and private citizens can prove violations in court.

⁴EPA Air Enforcement Division, Office of Enforcement and Compliance Assurance, Workbook, "The Timely and Appropriate (T&A) Enforcement Response to High Priority Violations (HPVs)" (June 23, 1999).

⁵The primary target for EPA enforcement attention is "significant violators." It is comprised of two types of violations—SIP violation by large ("Class A") sources that are located in nonattainment areas, and violations of NSPS or of PSD and Part D permit requirements. EPA will track the progress of state or federal enforcement against significant violators, and has outlined a schedule to which those actions should adhere. The key point in the schedule is 120 days after formal notification of the violation (which occurs thirty days after discovery). By that time, if a state is taking the lead, the source should at least be subject to some form of formal action. EPA cases should follow the same timetable. If states do not meet the 120-day deadline, EPA is likely to bring its own action. The enforcement response policy also requires a "cash penalty of sufficient magnitude appropriate to the violation" in civil actions against significant violators and those who violate the final deadlines in judicial or administrative compliance schedules or are repeat violators. EPA Air Enforcement Division, Office of Enforcement and Compliance Assurance, Workbook, "The Timely and Appropriate (T&A) Enforcement Response to High Priority Violations (HPVs)" (June 23, 1999).

1976, it was clear that numerous sources that would not qualify for § 110(f) variances would be unable to comply in time through little or no fault of their own. EPA used the prosecutorial discretion inherent in its enforcement authority to provide limited relief from the deadlines for sources able to demonstrate a history of good faith efforts to comply.

In the 1977 Amendments, Congress recognized that enforcement was not the appropriate response for all deadline violators and sought to provide clear guidance on the use of administrative extensions with a variety of delayed compliance order (DCO) provisions. The DCO provisions, located in the enforcement section to make clear they were not variances from the substantive standards, addressed a number of contingencies.⁶ The DCO authority, particularly the generally applicable authority of § 113(d)(1), was used heavily by EPA, but for the most part had expired by 1990. The 1990 Amendments eliminated all the DCO provisions of § 113(d) and replaced them only with general administrative order authority, now found in § 113(a)(1)–(4). Under the new order authority, EPA may issue an enforcement order with a compliance schedule of up to one year in length.⁷ Such orders are not renewable and do not preclude any other form of enforcement action.⁸

§ 12:52 Other SIP issues—Stationary source enforcement—Sanctions

The Clean Air Act gives EPA a wide and potent array of sanctions, made even more imposing by the 1990 Amendments, with which to respond to violations. Among the changes made in the 1990 Amendments are new authority to issue administrative orders and field citations for civil penalties, elevation of existing criminal offenses from misdemeanors to felonies, new criminal “endangerment” offenses, and miscellaneous provisions that will make it easier for EPA to recover large civil penalties. In addition, by redefining “person” and “operator” to include individual corporate officials, the Amendments open the door to increased enforcement action against individuals.¹

The Agency must start the enforcement process with a notice of violation to the state and the violator in most instances of SIP or permit violations.² At the end of the thirty-day period, EPA may issue an administrative compliance or penalty order or bring a civil action for injunctive relief and civil penalties of up to \$25,000 per day of violation.³ EPA also has authority, for the first time, to establish a program under which inspectors could issue “field citations” assessing penalties of up to

⁶Clean Air Act § 113(d), 42 U.S.C.A. § 7413(d). Paragraph (d)(3) provided for DCOs for sources planning to comply by means of replacement of the facility or termination of operations, (d)(4) for sources complying with innovative compliance strategies, and (d)(5) for major fuel-burning sources subject to coal conversion orders.

⁷Clean Air Act § 113(a)(4), as added by § 701 of the 1990 Amendments.

⁸Clean Air Act § 113(a)(4), as added by § 701 of the 1990 Amendments.

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¹Clean Air Act § 113(c)(6), (h), as added by section 701 of the 1990 Amendments. It has always been clear that individuals could be liable for *actions* that violated the Act, but the Amendments seem to create the possibility that individual corporate managers could be liable solely because violations were committed by those under their authority. Ironically, the Amendments exempt those junior employees from individual liability if they were following orders and under other circumstances. Clean Air Act § 113(h).

²Clean Air Act § 113(a)(1), 42 U.S.C.A. § 7413(a)(1). The notice requirement does not apply during a period in which EPA has assumed primary enforcement responsibility.

³Clean Air Act § 113(b)(1), 42 U.S.C.A. § 7413(b)(1). The administrative penalty authority also provides for penalties of up to \$25,000 per day of violation (adjusted for inflation), but limits the total penalty to \$200,000, absent Department of Justice concurrence. The recipient of such a penalty order is entitled to an adjudicatory hearing if it wishes to challenge EPA’s action. Clean Air Act § 113(d), as added by § 701 of the 1990 Amendments.

\$5,000 per day.⁴

EPA looks to an air program civil penalty policy in deciding how much to seek in civil penalties.⁵ The policy directs enforcers to add together amounts for economic benefit and the seriousness of the offense, and allows deductions for various mitigating factors.⁶ Penalties secured in some cases have exceeded several million.⁷ The 1990 Amendments make two changes that have facilitated penalty actions. EPA is authorized for the first time to seek penalties for past violations.⁸ The Amendments also provide for a presumption that violations occur every day after the date of a notice of violation, which could make it significantly easier for EPA (or private citizens) to recover large civil penalties.⁹

For certain categories of serious violations, § 120 authorizes EPA administratively to impose noncompliance penalties equal to the economic benefit of delayed compliance.¹⁰ Section 120 penalties are independent of and cumulative with § 113 penalties.¹¹ Despite statutory language suggesting the contrary, EPA has discretion not to use § 120 in individual cases,¹² and the Agency has made sparing use of its

⁴The field citations sometimes have been compared to parking tickets, but given the size of the potential penalties, the comparison is apt only for parking problems of nightmarish proportions. The recipient of a field citation is entitled to challenge it in an informal hearing. Clean Air Act § 113(d), as added by § 701 of the 1990 Amendments. EPA proposed field citation regulations on May 3, 1994 but had not finalized them by the end of 2005. 59 Fed. Reg. 22776 (May 3, 1994).

⁵EPA, Clean Air Act Stationary Source Civil Penalty Policy (Oct. 25, 1991).

⁶EPA, Clean Air Act Stationary Source Civil Penalty Policy 7 (Oct. 25, 1991).

⁷*See, e.g.,* United States v. Chevron, U.S.A., Inc., 639 F. Supp. 770, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 21021 (W.D. Tex. 1985) (\$6,054,000 penalty imposed). In fact, on December 21, 2005, EPA announced its consent decree with the Daimler Chrysler Corporation to settle mobile source Clean Air Act violations to the tune of \$94 million, EPA's largest settlement ever for emissions-related violations. Earlier in 2005, EPA entered into consent decrees for CAA violations for \$1.6 million in penalties and \$3.5 million in supplemental environmental projects (SEPs) (Cargill, Inc.) and \$500,000 in penalties and \$1 million in SEPs (Cosmed, Inc.). *See* <http://cfpub.epa.gov/compliance/cases>.

⁸Clean Air Act § 113(a)(1), (b), amended by § 701 of the 1990 Amendments. *Adair v. Troy State Univ. of Montgomery*, 892 F. Supp. 1401, 1409, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 21552, 21555-56 (M.D. Ala. 1995) (acknowledging that past violations are actionable). *Accord* *Patton v. General Sign Corp.*, 984 F. Supp. 666, 672 (W.D.N.Y. 1997) (plaintiff may sue on past violations as long as violations were repeated); *Fried v. Sungord Recovery Servs., Inc.*, 916 F. Supp. 465, 467-68 (E.D. Pa. 1996).

⁹Clean Air Act § 113(e)(2), as added by § 701 of the 1990 Clean Air Act Amendments. The presumption overcomes the difficulty of proving violations of requirements that cannot be monitored without stack tests. In order to establish the presumption, EPA or a citizen enforcer need only make a prima facie case that the violation is likely to have continued, shifting the burden to the defendant to prove otherwise. *But see* *United States v. Trident Seafoods Corp.*, 60 F.3d 556, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 21419 (9th Cir. 1995) (company that renovated fish cannery and removed asbestos without notifying EPA held to a single violation of the Clean Air Act, rather than a continuing violation beginning on the date notice should have been given and ending on the date a state official learned of the violation).

¹⁰42 U.S.C.A. § 7420. Noncompliance penalties are available against major stationary source violators of SIP provisions, violators of § 111 new source performance standards or § 112 hazardous air pollutant sources, or violators of compliance orders. Section 120 penalties and EPA's model for calculating them are applicable to regulated utilities even though the utilities cannot pass the cost of the penalties on to consumers. *Duquesne Light Co. v. EPA*, 791 F.2d 959, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20790 (3d Cir. 1986). The Fifth Circuit has held that section 120 penalties may not be imposed for a period in which a company is in compliance with a state SIP revision on which EPA has not acted. *American Cyanamid Co. v. EPA*, 810 F.2d 493, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20642 (5th Cir. 1987).

¹¹*United States v. Int'l Harvester Co.*, 624 F. Supp. 216, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20382 (S.D. Ohio 1985).

¹²Clean Air Act § 120(a)(2)(A) provides that the Administrator "shall assess and collect" noncompliance penalties based on the economic benefit of noncompliance against specified violators. Congress intended the substantial automatic penalties for major sources in violation of SIPs two years after

§ 120 authority.¹³

If a violation of the Act continues more than thirty days after receipt of a notice of violation from EPA and the violation is “knowing,” EPA may seek to impose criminal sanctions, including fines and jail terms.¹⁴ The 1990 Amendments elevate the existing criminal offenses from misdemeanors to felonies.¹⁵ They also subject knowing violations of various new substantive and procedural requirements of the Act to criminal sanctions. In addition, the Act now includes “negligent” and “knowing endangerment” offenses.¹⁶

EPA also may place certain Clean Air Act violators on a “blacklist,” thereby barring them from receiving federal government contracts.¹⁷ Congress has given EPA all the enforcement power it could ask for; if enforcement falters, it is not due to lack of authority.

§ 12:53 Other SIP issues—Emission trading

The pollution control programs of the Clean Air Act establish a regulatory framework based on emission limitations calculated for categories of sources and applied to each individual emission point or source in each category. Administrative simplicity argues for making the categories as broad as possible; thus, a SIP might set a single particulate emission limit for all manufacturing sources, perhaps with an exemption for small sources or separate standards for one or two categories with special problems, such as coke ovens or glass manufacturing plants. Nevertheless, the broad categories in SIPs typically include a wide range of diverse operations and types of air pollution sources.

Economists have long argued that uniform regulation across broad categories is inefficient because the cost of reducing pollution varies from source to source within

enactment of the 1977 Amendments to create a powerful incentive for compliance. Senate Debate on S.252, June 8, 1977, *reprinted in* 3 Cong. Research Serv., 95th Cong., 2d Sess., *A Legislative History of the Clean Air Act Amendments of 1977*, at 734 (Comm. Print 1978) (EPA was authorized to issue delayed compliance orders for those still in violation of 1977 SIP deadlines, but only to July 1, 1979. “In order to enforce this provision, an automatic delayed compliance penalty is provided for sources which are not in compliance by July 1, 1979.”). In the preamble to the rules implementing the section, which themselves were not promulgated until a year after the deadline for imposition of penalties, EPA announced that it could not handle the administrative workload imposed by automatic application of section 120 and that, as a result, it would use a priority system for deciding whether to issue notices of noncompliance. 45 Fed. Reg. 50088 (1980). This assertion of discretion has never been challenged. Industry challenges to the penalty program were rebuffed in court. *Duquesne Light Co. v. EPA*, 698 F.2d 456, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20251 (D.C. Cir. 1983).

¹³Through 1984, EPA had launched only about forty actions under section 120. EPA, FY 1984 Air Enforcement Highlights (undated).

¹⁴Clean Air Act § 113(c)(1), 42 U.S.C.A. § 7413(c)(1).

¹⁵Clean Air Act § 113(c)(1),(2), amended by § 701 of the 1990 Amendments.

¹⁶Clean Air Act § 113(c)(4),(5), as added by § 701 of the 1990 Amendments. The first offense consists of negligently releasing hazardous substances, including “hazardous air pollutants” listed under the Act and “extremely hazardous substances” listed under the Emergency Planning and Community Right to Know Act, and thereby negligently exposing others to a risk of serious harm. Negligent endangerment is a misdemeanor. The knowing endangerment offense entails knowing releases and knowingly subjecting others to a serious risk. Actual knowledge must be proved, but circumstantial evidence, including proof of efforts to be shielded from the relevant information, may suffice. Knowing endangerment is a felony, with jail sentences of up to fifteen years. *See, e.g.,* John F. Cooney et al., *Criminal Enforcement of Environmental Laws: Part I*, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 10459, 10472-74 (Sept. 1995) (discussing the crime of knowing endangerment).

¹⁷Clean Air Act § 306, 42 U.S.C.A. § 7606. The 1990 Amendments provide that EPA may blacklist not only the facility at which the violation occurred, but also other facilities of the same owner. Clean Air Act § 306(a), amended by § 705 of the 1990 Amendments.

such categories.¹ It would make more economic sense for those sources for which it is relatively cheap to control a pollutant to have more stringent emission limits, and those for which control is relatively expensive to have looser limits.² Regulators cannot easily fine tune their standards in this way, however, because they would have to know the cost of controlling each of hundreds or thousands of different sources.

“Emission trading” enables companies to take advantage of these differences in pollution control cost, about which company personnel know far more than do government regulators. The simplest type of emission trading is often called the “bubble” concept. A plant with several emission points—smokestacks, for example—is treated as though it had but one. Rather than complying with the government-calculated emission limits for each smokestack, the plant manager has the option of controlling more at some and less at others, so long as total emissions from the plant are the same as under the applicable emission limits. The plant is treated as though it were covered with a bubble that has only one emission outlet.

Emission trading includes several approaches that use or build upon the bubble concept. The offset policy, the only emission trading scheme discussed in the Act, is a means of allowing growth in nonattainment areas and improving air quality at the same time by trading controlled new source emissions against decreases in existing source emissions.³ “Netting” is a term used to describe a somewhat similar process in which new source control requirements for plant modifications are avoided by offsetting emission increases with decreases at existing sources within the plant. Modifications are treated as new sources if they increase emissions by more than an EPA-specified *de minimis* amount. If the net emission increase from the combination of a major plant modification and extra emission controls on existing sources is less than the threshold amount that ordinarily qualifies a modification as a new source under the nonattainment or PSD new source review program, new source review does not apply.⁴ The final component of emission trading is banking, a policy EPA developed to stimulate use of bubbles, offsets, and netting by allowing companies to save extra emission reductions for use in later trades.⁵

For all its theoretical appeal, emission trading has been greeted with more hostility than welcome in the complex and rigid world of Clean Air Act regulation. The concept has faced a series of legal obstacles. EPA had limited success in developing

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¹See, e.g., F. Anderson et al., *Environmental Improvement Through Economic Incentives* (1977).

²This assumes the emissions involved are equivalent in terms of their impact on the environment and public health. For example, hydrocarbon emissions contribute to smog, which is formed in complex photochemical reactions in the atmosphere. Some hydrocarbons are more photochemically reactive than others. There would be hidden costs in trading increases of hydrocarbons that are strong contributors to smog for decreases in other hydrocarbons that contribute less. Cf. 57 Fed. Reg. 62608, 62646, 62654 (Dec. 31, 1992) (proposed NESHAPS for emissions of hazardous organics). As required by Clean Air Act § 112(g)(1), 42 U.S.C.A. § 7412(g)(1), EPA has begun to consider the implications of trading reductions in “more” hazardous air pollutants for increases in “less” hazardous air pollutants. The matter is technically controversial. See 59 Fed. Reg. 19402, 19427 (Apr. 22, 1994) (final hazardous organics NESHAPS (HON) rule), codified at 40 C.F.R. Part 63.

³Old Clean Air Act § 173. The 1976 “Offset Ruling,” 41 Fed. Reg. 55524 (1976), first established the requirement. The 1977 Amendments required states either to continue the program in their Part D SIPs or to impose sufficiently stringent controls on existing sources to establish a margin for growth. Clean Air Act § 173(1), 42 U.S.C.A. § 7503(1).

⁴See generally *Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20507 (1984).

⁵Banking allows emission reductions beyond those required by law that are made today to be “saved” for use in trades tomorrow. Banking is intended to stimulate the development of an active market for extra emission reductions by generating an immediate supply of emission reductions that may be traded.

a series of new source bubble applications. In 1976, EPA required offsets as a condition of new source construction in nonattainment areas.⁶ However, in 1976 when EPA proposed § 111 new source performance standards (NSPS) for nonferrous metal smelters that would have allowed new units to avoid the standards through a form of netting, the D.C. Circuit struck down the rules as inconsistent with the Act.⁷ EPA later proposed PSD rules that allowed netting for modifications and the same court said that application of the bubble concept was required under the Act.⁸ What was not allowed with NSPS was required in the PSD program. When EPA decided to allow netting in nonattainment areas by defining “source” as an entire plant,⁹ it had to go all the way to the Supreme Court before its authority to do so was secure.¹⁰ The Supreme Court not only sanctioned nonattainment area netting, but suggested that EPA’s broad discretion may allow it to include bubbles in NSPS.¹¹ Although it has not accepted the invitation to avoid NSPS requirements with emission trades, EPA decided to allow sources to use bubbles to comply with NSPS.¹²

In 1979 EPA also turned its regulatory reform attention to existing sources. It issued a policy statement urging the states to allow industry to use the bubble policy in existing facilities regulated by SIPs.¹³ The encouragement fell on deaf ears, in part because of the red tape involved in getting each bubble approved twice as a SIP revision.¹⁴ The “generic bubble” rule¹⁵ expanded interest in bubbles, but state officials and environmentalists continued to be skeptical, fearing that the policy would open loopholes in the Act’s thinly woven regulatory fabric. As of late 1984, EPA had approved only sixty-two bubbles, though an additional 145 were reported in the works.¹⁶

The implementation problems that gave some bubble opponents pause are illustrated in *United States v. National Steel Corp.*¹⁷ The district court ruled that defendant was liable for penalties for violating interim steps in a consent decree

⁶See amended by 41 Fed. Reg. 5524 (1976).

⁷*ASARCO, Inc. v. EPA*, 578 F.2d 319, 8 Env’tl. L. Rep. (Env’tl. L. Inst.) 20277 (D.C. Cir. 1978). See § 12:59 (description of the NSPS program).

⁸*Ala. Power Co. v. Costle*, 636 F.2d 323, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20001 (D.C. Cir. 1979).

⁹46 Fed. Reg. 50766 (Oct. 14, 1981).

¹⁰*Natural Res. Def. Council v. Gorsuch*, 685 F.2d 718, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20942 (D.C. Cir. 1982), rev’d sub nom. *Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20507 (1984). For an analysis of the court of appeals decision, see Comment, *NRDC v. Gorsuch: D.C. Circuit Bursts EPA’s Nonattainment Area Bubble*, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 10089 (1982). For an analysis of the Supreme Court decision, see Comment, *Three Strikes and the Umpire Is Out*, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 10338 (1984).

¹¹The availability of the bubble concept turns in part on the definition of “source.” The Court ruled that the definition of “source” in the NSPS provisions of the Act was relevant to the usage of the term in other programs where it is not defined. The Court then concluded that the NSPS definition was sufficiently ambiguous to allow EPA flexibility in defining the term in the nonattainment program. By inference, EPA could redefine the term in the NSPS program, but the Agency has not chosen to do so. *Chevron U.S.A., Inc. v. Natural Res. Def. Council*, 467 U.S. 837, 862, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20507, 20513 (1984).

¹²52 Fed. Reg. 28946 (1987) (approving a bubble for two boilers of Central Illinois Power Service Company’s Newton Power Station, both of which are covered by NSPS).

¹³44 Fed. Reg. 71780 (1979).

¹⁴See generally R. Liroff, *The Bubble Policy and Emissions Trading: The Toil and Trouble of Regulatory Reform* (1986). See also *The Proper Place for the Bubble Concept Under the Clean Air Act*, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 10406 (1983).

¹⁵See Comment, *EPA Approves New Jersey Generic Bubble Rule, Develops Consolidated Guidance for Controlled Trading Program*, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 10119 (1981). See also *Clean Air Act § 111(b)(1)(A)*, 42 U.S.C.A. § 7411(b)(1)(A).

¹⁶EPA, *Emissions Trading Status Report* (Oct. 1, 1984).

¹⁷*United States v. Nat’l Steel Corp.*, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20481 (E.D. Mich. 1983),

intended to bring it into compliance with the SIP, even though defendant had a bubble application for the facility pending before the state and EPA at the time.¹⁸ On appeal, the Sixth Circuit affirmed on liability for penalties, but remanded for recalculation in conformance with a provision limiting penalty liability to a 180-day period.¹⁹ EPA later disapproved the proposed bubble plan,²⁰ because on closer examination the company was taking credit for emission reductions that would not likely occur.²¹ This bubble would have both delayed enforcement and reduced pollution control.

One reason for the slow acceptance of the bubble policy has been EPA's inability to resolve internal conflicts over a broad emission trading policy. Although work began in 1978, the policy proved difficult to craft, in part due to strong differences within EPA over issues like the use in trades of emission reductions resulting from shutting down sources, and the extent to which trading should be allowed in nonattainment areas without approved attainment demonstrations. A proposal was published in 1982, but the final policy was not issued until late 1986.²²

While EPA staff bickered over the policy, many opportunities for trading may have been lost. For existing sources, emission trades are most attractive when new control requirements are imposed. A facility that has already invested in a control system has capital costs to absorb. Part D SIPs required thousands of stationary sources of hydrocarbon emissions to comply with new RACT requirements. This would be an ideal opportunity for emission trading and many of the trades made to date involved such sources. However, many sources may simply have opted for the off-the-shelf controls due to uncertainties about key aspects of emission trading.

Under the 1990 Amendments, emission trading and other economic incentive schemes may flourish under some programs and wither under others. Congress relied heavily on the creation of a viable market for trading in "emission allowances" as a means of making its acid rain control program cost effective.²³ In the ozone nonattainment program, however, opportunities for emission trading have been limited significantly by Congress and EPA.²⁴ The ozone nonattainment program does create the first emission fee program authorized by Congress to date, but it is intended to function as an automatic penalty system that supplements layers of regulation, not as an alternative to regulation as the champions of emission fees envisioned the concept.²⁵

§ 12:54 Other SIP issues—Acid rain and Clean Air Act regulation of interstate and international air pollution

Until passage of the 1990 Amendments, the related problems of interstate

rev'd in part, 767 F.2d 1176, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20678 (6th Cir. 1985).

¹⁸United States v. Nat'l Steel Corp., 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20481 (E.D. Mich. 1983), rev'd in part, 767 F.2d 1176, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20678 (6th Cir. 1985).

¹⁹United States v. Nat'l Steel Corp., 767 F.2d 1176, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20678 (6th Cir. 1985).

²⁰49 Fed. Reg. 11832 (1984).

²¹See also 49 Fed. Reg. 48542 (1984) (EPA disapproval of a proposed Ohio SIP revision allowing B.F. Goodrich to utilize a bubble.).

²²"Emissions Trading Policy Statement," 51 Fed. Reg. 43814 (1986). The final policy kept certain 1982 provisions intended to encourage trading, but also added new environmental safeguards.

²³Clean Air Act § 403, as added by § 401 of the 1990 Clean Air Act Amendments.

²⁴In its deficiency notices concerning SIPs concerning many ozone nonattainment areas, EPA has required states to repeal their generic bubble rules. See generally, 55 Fed. Reg. 30973 (1990). In the new program for ozone nonattainment areas, Congress placed limitations on netting and offsets. See § 12:31 note 5.

²⁵Clean Air Act § 182(d).

transport of air pollution and acid rain were widely perceived to be outside the effective reach of the Clean Air Act, even though Congress had paid lip service to each. In 1990, Congress revisited both issues. It attempted to combat the general interstate pollution problem incrementally, by creating a new legal standard and a new institutional mechanism to force states to do more to reduce emissions where air quality impacts were felt in other states. For acid rain, Congress gave up on the notion that the SIP process is up to the task and created an independent, national program to drastically reduce emissions of acid rain precursors (SO₂ and NO_x) and to hold them down in the future, using regulatory and economic measures rather foreign to the basic programs of the Act. Whether these ambitious programs will achieve their objectives remains to be seen, but Congress no longer can be faulted for not trying.

§ 12:55 Other SIP issues—Acid rain and Clean Air Act regulation of interstate and international air pollution—Transboundary pollution

The principal problem Congress had in mind when it established the SIP process in 1970 was heavy, localized concentrations of air pollution found near large individual sources or large groups of sources. Because air pollution was perceived as a relatively local problem, and for institutional reasons, the SIP process focused on individual states for the most part. It did give some attention to interstate pollution in § 110(a)(2)(E), but the control mechanism was relatively weak, largely because it was consensual rather than mandatory.¹

In 1977, Congress faced with evidence that acid rain precursors and particular matter in the form of sulfate aerosols, or their precursors sometimes are transported long distances from their sources, creating serious pollution problems in other states, tried to graft stronger interstate pollution control mechanisms onto the SIP process with modifications to § 110(a)(2)(E) and a new § 126.² Amended § 110(a)(2)(E) required states to control pollution from their own sources that would “prevent attainment or maintenance” of NAAQS or “interfere with” implementation programs required under PSD in another state. Section 126 created a procedure by which a state believing itself the recipient of pollution from another state in violation of § 110(a)(2)(E) could petition EPA to force a revision of the offending SIP. The 1977 Amendments also included a new § 115,³ governing international air pollution. It empowered EPA, upon receipt of a report from a duly constituted international Agency, or from the Secretary of State, concluding that air pollution from the United States was causing or contributing to harmful pollution in another country, to require the state from which the offending emissions arose to control such emissions through its SIP. Section 115 applies only to those countries that provide equivalent protection to the United States.

The interstate pollution provisions were ineffectual as a result of two Achilles’ heels. The transboundary air pollution impact needed to trigger corrective action was large. Because the statutory provisions leave many questions unanswered, EPA had a range of discretion in interpreting them and took a somewhat conservative view of their scope.⁴ To “prevent attainment,” sources in the upwind state or states had to contribute “significant” amounts of criteria pollutants to nonattainment ar-

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¹See Jorling, *The Federal Law of Air Pollution Control*, in *Federal Environmental Law* 1058, 1098 (1974).

²Old Clean Air Act § 7410(a)(2)(E), 42 U.S.C.A. § 7426.

³Old Clean Air Act § 7415.

⁴46 Fed. Reg. 38937 (1981). The agency’s guidance indicated that section 126 petitions should

eas downwind.⁵ There was no clear benchmark for significance, but contributions of less than five percent were held *de minimis*.⁶ Significant impacts in parts of nonattainment areas that did not themselves violate the NAAQS did not suffice.⁷ To “prevent maintenance” of the NAAQS, the interstate pollution had to push the receiving state’s air quality over the NAAQS despite controls imposed in the receiving state’s SIP.⁸ Interstate pollution could interfere with PSD measures only if the PSD baseline had been triggered in the receiving state by an application for a major source PSD permit.⁹

The second weakness of the interstate pollution sections was technical, not legal. Assessing the air quality impacts of pollution sources usually requires modeling. Pollution can travel hundreds of miles, but minimally reliable models can “see” no farther than twenty to fifty miles.¹⁰ Without long-range models, EPA was blind to long-range pollution.¹¹

Section 126 did not add much to the legal arsenal of a state concerned about interstate pollution. It could force EPA to reach a decision on whether interstate pollution violated section 110(a)(2)(E),¹² but it could not trigger a SIP revision unless section 110(a)(2)(E) was violated.¹³ Section 126 thus was afflicted with the same limitations as section 110(a)(2)(E).

The 1990 Amendments addressed interstate air pollution in several ways. First, they lowered the statutory threshold for impermissible interstate impacts that must be addressed in the pollution-exporting state’s SIP. The new requirement is that SIPs must prohibit emissions that “contribute significantly to [NAAQS] nonattainment in, or interfere with maintenance by” another state.¹⁴ Section 126 also was changed to allow a state to petition EPA for a SIP revision whether the transbound-

identify precisely the nonattainment or PSD area allegedly affected by interstate pollution, demonstrate that interstate pollution prevents attainment or maintenance of the NAAQS or interferes with PSD measures, and include evidence that in-state sources affecting the target areas are adequately controlled.

⁵Connecticut v. EPA, 696 F.2d 147, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20135 (2d Cir. 1982).

⁶Connecticut v. EPA, 696 F.2d 147, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20135 (2d Cir. 1982).

⁷Air Pollution Control Dist. of Jefferson County v. EPA, 739 F.2d 1071, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20573 (6th Cir. 1984).

⁸Connecticut v. EPA, 696 F.2d 147, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20135 (2d Cir. 1982).

⁹Connecticut v. EPA, 696 F.2d 147, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20135 (2d Cir. 1982).

¹⁰Connecticut v. EPA, 696 F.2d 147, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20135 (2d Cir. 1982).

¹¹See *New York v. EPA*, 716 F.2d 440, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20807 (7th Cir. 1983) (relaxation of Illinois SIP for sulfur dioxide without consideration of effects on air quality in New York does not violate Clean Air Act); *New York v. Administrator*, 710 F.2d 1200, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20636 (6th Cir. 1983) (EPA properly approved relaxation of Tennessee SIP for one power plant’s sulfur dioxide emissions without considering the impacts on sulfur dioxide or sulfate pollution in New York.).

¹²*New York v. Ruckelshaus*, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20875 (D.D.C. 1984).

¹³EPA denied the section 126 petitions at issue in *New York v. Ruckelshaus* (Alabama Power Co. v. Costle, 636 F.2d 323, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20001 (D.C. Cir. 1979)) largely because the short-range pollution impacts, which could be demonstrated to EPA’s satisfaction, did not hit nonattainment areas, and the long-range impacts, which did hit nonattainment areas, could not be demonstrated to EPA’s satisfaction. See 49 Fed. Reg. 34851 (1984) (proposing denial of petitions); 49 Fed. Reg. 34851, 48152 (1984) (denying petitions). See also *New York v. EPA*, 852 F.2d 574, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 21194 (D.C. Cir. 1988) (EPA does not have an affirmative duty under §§ 110(a)(2)(E) or 126(b) to review approved SIPs to assess their impact on interstate pollution.).

¹⁴Clean Air Act § 110(a)(2)(D), as amended by § 101(b) of the 1990 Clean Air Act Amendments. This appears to be a major relaxation of the old Section 110(a)(2)(E) standard, although EPA and the courts interpreted that standard in terms similar to those used by Congress in the Amendments. See text accompanying note 308. Congress also made conforming changes to Section 126.

ary pollution was from one source or a group of sources.¹⁵ Second, the Amendments created a new institutional mechanism for addressing interstate ozone pollution, the regional ozone transport area. Such areas, of which the “Northeast Corridor” from Washington, D.C. to Maine is statutorily made the first, must establish regional councils of state and EPA officials that will review the evidence of ozone transport and give EPA recommendations for SIP changes to address the problem.¹⁶ Congress apparently expects states exporting ozone pollution to be more willing to accept a SIP verdict from a jury of their neighbors and peers than one solely from EPA.

§ 12:56 Other SIP issues—Acid rain and Clean Air Act regulation of interstate and international air pollution—Acid Rain—Pre-1990 regulation

The interstate pollution provisions were particularly weak on the subject of acid rain. Substantial evidence indicates that the heavy acid deposition observed in areas of the northeastern U.S. and Canada is caused in large part by massive emissions of SO₂ in the midwestern United States, which are transported far to the north and east and transformed into sulfate particles enroute. The sulfates return to earth as dry particles, or in rain or snow. Where deposition is significant, it can kill lakes, damage materials, and may harm forests and crops.¹

The 1977 Amendments to the interstate pollution provisions of the Clean Air Act were drafted in part out of concern over acid rain, but they were unresponsive to the problem. The effects that trigger § 126 or § 110(a)(2)(E) were increases in criteria pollutants in the atmosphere. Acid rain and snow do not count on this scale. Sulfates in the air are particulate matter and therefore are covered by a NAAQS. However, neither the particulate NAAQS nor the secondary SO₂ standard is set to protect the environment from sulfate deposition.² The amount of sulfate particulate detectable some distance downwind from even large SO₂ sources is unlikely to rise to the level of a particulate problem as defined by the NAAQS, even though the sulfate may be contributing significantly to serious acid deposition problems.³ Moreover, EPA lacks models to reliably estimate the magnitude of SO₂ contribution to particulate pollution, even relatively short distances downwind, such as across Long Island Sound. Where particulate problems are alleged to stem from SO₂ emissions hundreds of miles upwind, EPA and the courts simply threw up their hands.⁴ Thus, it was the need to quantify impacts, built into the Clean Air Act to make it enforceable, that undercuts the Act’s ability to cope with acid rain and long-range transport.

The international air pollution section of the Act is potentially easier to use than its interstate pollution relatives. For one thing, § 115 is triggered by nuisance-type air pollution situations and does not require the appearance of quantification that is necessary to force abatement under §§ 110(a)(2)(E) and 126. The U.S. emissions

¹⁵Clean Air Act § 126(b), as amended by § 109 of the 1990 Clean Air Act Amendments.

¹⁶Clean Air Act § 184, as added by § 103 of the 1990 Clean Air Act Amendments.

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¹See G. Wetstone & A. Rosencranz, *Acid Rain in Europe and North America* (1983); National Acid Precipitation Assessment Program, *Integrated Assessment: Questions 1 and 2* (1990).

²See *Connecticut v. EPA*, 696 F.2d 147, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20135 (2d Cir. 1982). See also *Natural Res. Def. Council, Inc. v. EPA*, 902 F.2d 962, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20891 (1990) (EPA decision to postpone indefinitely development of a secondary SO₂ standard for acid rain remanded.), vacated in part, 921 F.2d 326 (D.C. Cir. 1991).

³*Connecticut v. EPA*, 696 F.2d 147, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20135 (2d Cir. 1982). The D.C. Circuit rejected another claim by northeastern states that midwestern SO₂ emissions are causing or contributing to downwind particulate and SO₂ nonattainment (and visibility problems). *New York v. EPA*, 852 F.2d 574, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 21194 (D.C. Cir. 1988).

⁴*Connecticut v. EPA*, 696 F.2d 147, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20135 (2d Cir. 1982).

must “cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare in a foreign country.”⁵ This standard is not linked to the quantified goals of the U.S. Act. Second, the Act leaves it to the discretion of the Administrator or the Secretary of State to determine whether such international pollution exists.⁶ While there is nothing in the law to force these officials to make the finding, once they do, the Administrator apparently has a nondiscretionary duty to begin the § 110(a)(2)(H) SIP revision process for those states with the offending sources, assuming that the Administrator also finds that the foreign country gives reciprocal protection to the U.S.⁷ In practice, however, the international pollution provision also was ineffective.⁸

Because those seeking to combat acid rain have been unable to demonstrate the kinds of air quality impacts recognized by the Clean Air Act with the degree of precision demanded by the Act, they sought other justification in the Act for cutting SO₂ emissions from large sources. These efforts were some what more successful. Litigation to tighten the tall stacks rules has been aimed in large part at preventing acid rain, even though the alleged contribution of tall stacks to that problem has little or no bearing on the legal issues.⁹ A second initiative would force EPA to tighten the primary and secondary NAAQS for SO₂.¹⁰ All these initiatives lose most of their significance in light of the new Title N of the Act.

§ 12:57 Other SIP issues—Acid rain and Clean Air Act regulation of interstate and international air pollution—Acid Rain—Acid rain control under the 1990 amendments

The 1990 Amendments’ new acid rain program is the culmination of a fierce political battle that raged for over a decade.¹ The program mandates the elimination of 10 million tons of SO₂ emissions and 2 million tons of NO_x emissions from oil- and coal-fired utility power plants by 2000. The cuts are to be achieved across the country, with the greatest burden falling on the Midwest. Congress set a cap on SO₂ emissions that will be enforced through a complex marketable “allowance” system

⁵Clean Air Act § 115(a), 42 U.S.C.A. § 7415(a).

⁶Clean Air Act § 115(a), 42 U.S.C.A. § 7415(a).

⁷Clean Air Act § 115(c), 42 U.S.C.A. § 7415(c).

⁸In mid-1985, a district court ruled that the section 115 conditions had been satisfied by a 1981 finding by EPA Administrator Costle, first that several studies by international bodies demonstrated the existence of a section 115 pollution problem in Canada and, second, that Canada’s law offered equivalent protection to the United States *New York v. Thomas*, 613 F. Supp. 1472, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20748 (D.D.C. 1985). The D.C. Circuit reversed, however, ruling that the Costle finding under section 115 was deficient because it was not subject to notice and comment rulemaking. *Thomas v. New York*, 802 F.2d 1443, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20925 (D.C. Cir. 1986).

⁹See § 12:33 note 2 and accompanying text. See also Env’t Rep. [Current Developments] (BNA) 2021 (Mar. 22, 1985) (National Clean Air Coalition releases study indicating that compliance with the tall stacks requirements of the Act would cut SO₂ emissions by 4 to 7.6 million tons per year, producing significant health benefits and curtailing acid rain).

¹⁰Env’tl. Def. Fund v. *Thomas*, No. 85-Civ. 9507 (DNE), Env’tl. L. Rep. (Env’tl. L. Inst.) Pend. Lit. 65889 (S.D. N.Y. complaint filed 12-5-85). The argument for cutting back on the primary standard is based on recent studies showing more serious health effects than did the studies relied on in the criteria documents; the argument for cutting the secondary standards is based on welfare effects from acid rain. The third indirect attack on acid rain was aimed at EPA approval of SIP relaxations for midwestern power plants. Though attacks based on §§ 110(a)(2)(E) and 126 have failed, plaintiffs had some success by attacking the model relied on by EPA. See Clean Air Act § 110(k)(2), 42 U.S.C.A. § 7410(k)(2), as added by § 101(c) of the 1990 Clean Air Act Amendments, 42 U.S.C.A. § 7401(c).

[Section 12:57]

¹It has been called “one of the most successful environmental programs of the past decade” after six years of experience. Dallas Burtraw and Byron Swift, *A New Standard of Performance: An Analysis of the Clean Air Act’s Acid Rain Program*, 26 Env’tl. L. Rep. (Env’tl. L. Inst.) 10411 (Aug. 1996).

that is designed to make the necessary emission reductions cost effective and to spread the cost among regions of the country.

The primary target of the acid rain program is “affected units,” fossil fuel fired combustion devices (*i.e.*, boilers) located in utility power plants that produce electricity for sale.² The program does not apply to several types of small power plants:

1. Plants that cogenerate steam and electricity, and sell less than one-third of their potential output of electricity and less than 25 megawatts of power to a utility;³
2. Plants that are qualifying small power production or cogeneration facilities under the Federal Power Act or “new independent power production facilities,” which sell at least 80 percent of their electricity at wholesale and are “nonrecourse project financed”;⁴ and which had power sales agreements as of November 15, 1990, or were negotiating with a utility that was under order (or had issued a letter of intent) to enter such an agreement, or was the winning bidder at a competitive solicitation;⁵
3. Simple combustion turbines that were in commercial operation prior to the date of the Amendments;⁶ and
4. Units that serve generators with nameplate capacities of less than 25

²The term “affected unit” is defined only as a unit that is subject to emission reduction requirements or limitations under Title IV. Clean Air Act § 402(2), 42 U.S.C.A. § 7651a as added by § 401 of the 1990 Clean Air Act Amendments 42 U.S.C.A. § 7651. Such limitations and requirements are presented in §§ 404 and 405. Section 404 covers 110 specific coal-fired utility power plants. Section 405 covers coal- and oil-fired “utility units,” which are defined in § 402(17) as units that serve a generator of electricity for sale or in 1985 served such a generator. Other types of sources are “affected units” only if they “opt in” to the program. Clean Air Act § 410, 42 U.S.C.A. § 7651i as added by § 401 of the 1990 Clean Air Act Amendments, Acid Rain Advisory Committee, Opt-In Subcommittee, Summary (July 1992), 60 Fed. Reg. 17100 (Apr. 4, 1995), 40 C.F.R. part 74. In 1995, EPA issued final opt-in regulations implementing § 410 (60 Fed. Reg. 17100 (Apr. 4, 1995)). On June 5, 1995, an owner of several potential opt-in sources filed a petition for review of the existing opt-in regulations. The litigation was settled on Jan. 9, 1997. On Sept. 25, 1997, EPA proposed opt-in regulation revisions (62 Fed. Reg. 50456), several of which resulted from that settlement. Revisions of sulfur dioxide opt-ins were finalized at 63 Fed. Reg. 18837 (Apr. 16, 1998).

³A cogeneration unit is exempt from the Acid Rain Program if it was constructed for the purpose of supplying one-third or less of its potential electrical output capacity or 25 MW or less electrical output to any utility power distribution system for sale. 58 Fed. Reg. 15634 (Mar. 23, 1993), codified at 40 C.F.R. Parts 72, 73, and 75.

⁴The term “nonrecourse project financed” means that a project is 100 percent equity financed or the project is debt financed and the debt is secured by the assets financed and revenues received by the project (including but not limited to, part or all of the revenues received under certain power sales agreements). 10 C.F.R. § 715.3.

⁵Clean Air Act § 405(g)(6)(A), as added by § 401 of the 1990 Clean Air Act Amendments. Proposed EPA rules would impose certain limitations on the applicability of § 405(g)(6)(A). The § 405(g)(6)(A) exemption would not be available to a plant that, prior to November 15, 1990, was owned by a publicly owned utility, or to a plant of which a publicly owned utility (or utilities) became the majority owner. 57 Fed. Reg. 29940, 29963 (July 7, 1992). EPA also proposed that in order to be considered exempt under § 405(g)(6)(A), a plant must have committed a minimum percent of its planned power production through one of the four vehicles specified in § 405(g)(6)(A)(i)–(iv): 30 percent in the case of a plant that executed a power sales agreement as of November 15, 1990, and 50 percent for a plant qualifying on the basis of one of the other three criteria. 57 Fed. Reg. 29946 to 29947, and 29963 to 29964 (1992). Units added to an exempt plant and not covered by the original power purchase agreement would not qualify for the exemption. 57 Fed. Reg. 29947 (1992). In addition, some units at an otherwise exempt plant could lose the exemption if the plant’s actual power output capacity proved to be more than 20 percent greater than the planned capacity identified in the power purchase commitment that served as the basis for the exemption. The units supplying up to 120 percent of planned capacity apparently would still be exempt, however. 57 Fed. Reg. 29940, 29947, and 29963 (July 7, 1992). Final rule at 58 Fed. Reg. 15634 (Mar. 23, 1993).

⁶Clean Air Act § 402(8) (definition of “existing units”), as added by § 401 of the 1990 Clean Air Act Amendments. Pursuant to proposed EPA rules, existing combined cycle units without auxiliary firing

megawatts and were in commercial operation prior to the date of the Amendments.⁷

Initially, the program does not apply to industrial sources, but EPA must inventory and project such emissions each year and, if the inventory or projection indicates that industrial SO₂ emissions will exceed 5.6 million tons per year, EPA is empowered to limit such emissions through new NSPS standards.⁸ Power plants that are exempted from the program and industrial sources of SO₂ emissions may “opt-in” to the program so as to be able to take advantage of the allowance market.⁹

The heart of the acid rain program is its allowance system.¹⁰ A single allowance is the authority to emit one ton per year of SO₂.¹¹ As of 2000, there will be 8.9 million allowances for all “affected units” (plus a relatively small amount of bonus allowances).¹² Phase I of the program, which took effect on January 1, 1995, imposes allowances on 110 specific large power plants (located in 21 states in eastern and Midwestern United States), which are set at levels approximately twice as high as the long-term Phase II allowances.¹³ Phase II allowances for all affected units (located at approximately 800 power plants) took effect in 2000.¹⁴ The Phase 2 program affects existing utility units serving generators with an output capacity of more

would be treated as simple combustion turbines and thus would not be subject to the program. 56 Fed. Reg. 63104 (1991).

⁷Clean Air Act § 402(8) (definition of “existing units”), as added by § 401 of the 1990 Clean Air Act Amendments. Proposed EPA rules would require any “existing unit” serving a generator with a nameplate capacity of less than 25 megawatts, which was modified after November 15, 1990, to serve one or more generators with a nameplate capacity or capacities of greater than 25 megawatts to be treated as a “new unit” under the program. 56 Fed. Reg. 63106 (1991). Consequently, any such unit would require allowances.

⁸Section 406 of the 1990 Clean Air Act Amendments.

⁹Clean Air Act § 410, as added by § 401 of the 1990 Clean Air Act Amendments. EPA was expected to propose rules setting forth the procedural and substantive requirements for industrial sources and exempt power plants that choose to “opt-in” to the program. The issues considered to be critical to the implementation of the opt-in program include: (1) the appropriate method for collecting baseline operations and emissions necessary to allocate allowances for opt-in sources; (2) identifying the circumstances warranting the use of data other than baseline data to allocate allowances for opt-in sources; (3) the appropriate interpretations of the allowance allocation limitation and allowance transfer or bank restriction (and thermal energy exception thereto) contained in § 410(f); (4) the appropriate monitoring requirements for non-combustion type opt-in sources; (5) the development of an efficient permit process for opt-in sources that effectively integrates the requirements of Titles IV and V of the Clean Air Act; and (6) the ability of opt-in sources to opt out of the program. *See Acid Rain Advisory Committee, Opt-In Subcommittee, Summary* (July 1992). The rules were promulgated at 60 Fed. Reg. 17100 (Apr. 4, 1995) and are codified at 40 C.F.R. part 74.

¹⁰In January 1993, EPA published final rules on five aspects of the acid rain program: general provisions and permits, the allowance system, continuous emissions monitoring, excess emissions penalties, and administrative appeals. 58 Fed. Reg. 3590 (Jan. 11, 1993), codified at 40 C.F.R. Parts 72, 73, 75, 77, and 78. In March 1993, EPA promulgated final rules governing allocations of early reduction credits for Phase I and Phase II programs, Phase II initial allowance allocation provisions (including reserves and set-asides and repowering allocations), rules for small diesel refiners to apply for allowances, and applicability provisions regarding co-generators, qualifying facilities and independent power producers, and solid waste incinerators. 58 Fed. Reg. 15633 (1993). Emission allowances under the acid rain program are reviewable in the regional federal courts of appeals. *Madison Gas & Elec. Co. v. EPA*, 4 F.3d 529, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 21519 (7th Cir. 1993).

¹¹Clean Air Act § 402(3), as added by § 401 of the 1990 Clean Air Act Amendments.

¹²Clean Air Act § 403(a), as added by § 401 of the 1990 Clean Air Act Amendments.

¹³Clean Air Act § 404, as added by § 401 of the 1990 Clean Air Act Amendments. Emissions data indicate that 1995 SO₂ emissions at these units nationwide were reduced by almost 40 percent below their required level. *See* <http://www.epa.gov/airmarkt>.

¹⁴Clean Air Act § 405, as added by § 401 of the 1990 Clean Air Act Amendments. Certain sources that are to be “repowered” as defined in the Act may obtain a one-year extension of the 2000 deadline under section 409, but must have notified EPA of their intent to do so by March 31, 1991. Clean Air Act

than 25 MW and all new utility units.¹⁵ When an allowance takes effect, it functions as an emission limitation.¹⁶ Allowances will be issued by EPA at no charge to existing affected units and thereafter may be used, saved for use in a future year, sold, or traded.¹⁷ The amount of each affected unit's allowance is based on one of several complicated formulas that scale back emissions from heavy emitters and allow clean sources to increase emissions slightly from baseline years.¹⁸ The program allows the award of bonus allowances for early emission reductions, innovative control strategies and a variety of other reasons.¹⁹ A utility wishing to build a new fossil-fuel-fired power plant must buy into the allowance market.²⁰ If aggregate emissions from affected units exceed 8.9 million tons per year after 2000, EPA is empowered to reduce the allowances pro rata.²¹

The allowance market is a high-risk experiment. EPA must develop regulations providing for an allowance tracking system and create a reserve of allowances (withheld from the pool allocated to existing units) to prime the market through periodic allowance auctions and to provide an option for those without allowances who wish to build new power plants.²² There are early signs that an allowance mar-

§ 403(a). The court upheld EPA's allocation of Phase II allowances against both substantive and procedural challenges in *Texas Municipal Power Agency v. EPA*, 89 F.3d 858 (D.C. Cir. 1996).

¹⁵See <http://www.epa.gov/airmarkt>.

¹⁶Clean Air Act § 403(g), as added by § 401 of the 1990 Clean Air Act Amendments.

¹⁷Clean Air Act § 403(b), as added by § 401 of the 1990 Clean Air Act Amendments. Allowances may not be used up in advance, but may be traded before they take effect. On July 19, 1991, EPA released the SO₂ emission data base (version 2.0) and support documents that it will use in allocating SO₂ allowances. 56 Fed. Reg. 33278 (1991). On July 7, 1992, EPA proposed the initial allowance allocations for Phase I and Phase II utility units. 57 Fed. Reg. 29965 to 30024 (1992). As EPA explains in those proposed rules, because compliance obligations of the program are imposed upon units instead of plants, it has allocated proposed allowances for each boiler at the Phase I and Phase II utility units. 57 Fed. Reg. 29942 (1992).

¹⁸See Clean Air Act § 405(b), as added by § 401 of the 1990 Clean Air Act Amendments. The break point between facilities that must decrease emissions and those that need not is roughly 1.2 pounds per million BTUs of SO₂ emissions in the baseline year. EPA's promulgation of SO₂ allowances was vacated and remanded in *Madison Gas & Elec. Co. v. EPA*, 25 F.3d 526, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20978 (7th Cir. 1994), because the Agency failed to explain why the petitioner's plant was not entitled to bonus allowances. This was finalized at 58 Fed. Reg. 15634 (Mar. 23, 1993).

¹⁹See, e.g., Clean Air Act § 405(b)(2), (4), (c)(4); Clean Air Act § 405(d)(3), (4), (5), (f)(2), as added by § 401 of the 1990 Clean Air Act Amendments. EPA's method of calculating "extension allowances" for Phase I units that install scrubbers was upheld in *Indianapolis Power & Light Co. v. EPA*, 58 F.3d 643, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 21217 (D.C. Cir. 1995).

²⁰Clean Air Act § 403(e), as added by § 401 of the 1990 Clean Air Act Amendments. EPA is to keep allowances in reserve and serve as the seller of last resort at a high price. The Act does provide allowances for units whose construction was commenced after December 31, 1985, and before December 31, 1995. Clean Air Act § 405(g)(1) to (4), as added by § 401 of the 1990 Clean Air Act Amendments.

²¹Clean Air Act § 403(a), as added by § 401 of the 1990 Clean Air Act Amendments.

²²Clean Air Act §§ 403(d), 416, as added by § 401 of the 1990 Clean Air Act Amendments. The allowance tracking system must provide for transfers to take effect when recorded by the Administrator and transfers so recorded are deemed part of each unit's permit, but the permits need not be revised to reflect the change. Clean Air Act § 403(d)(1). This could undercut the value of Title V operating permits as authoritative compilations of each source's compliance obligations. See § 12:85. EPA has issued several proposed and final rules relating to the allowance system. On December 3, 1991, EPA proposed rules governing the tracking, allocation, and transfer of allowances, as well as the conservation and energy reserve component of the allowance system. 56 Fed. Reg. 63002, 63266 (Dec. 3, 1991). On July 7, 1992, EPA proposed rules which (i) set forth a number of key definitional terms used in the allowance system, (ii) govern initial allowance allocations for affected utility units, and (iii) establish procedures for small diesel refineries to receive allowances. 57 Fed. Reg. 29940, 29963 (July 7, 1992). On December 17, 1991, EPA promulgated final rules governing auction and direct sales of allowances and the allowance guarantee for independent power production facilities. 56 Fed. Reg. 65592 (Dec. 17, 1991), codified at 40 C.F.R. Part 730.

ket is developing. First, there have been several allowance trades which have involved public utilities as well as one industrial plant.²³ Second, the Chicago Board of Trade (CBOT) administers an integrated allowance market involving: (i) annual allowance auction and direct sales; (ii) an allowance cash market; (iii) the establishment and operation of an active allowance futures market; and (iv) the establishment of allowance information systems.²⁴ If a real market does develop, it will create powerful economic incentives for utilities to over-control SO₂ emissions and sell the extra allowances. There is no guarantee that the market will function, however.²⁵ The allowances are not property rights and may be expropriated by EPA if necessary to achieve the 8.9 million ton cap on emissions.²⁶ This may lead utilities to discount allowances and hoard them. Also, the system does not limit the power of utility regulatory agencies, which might result in market perturbations, for instance if such agencies chose to limit the out-of-state transfer of allowances.²⁷

Affected units must also meet new NO_x limits. The 1990 Amendments set a goal of reducing NO_x by two million tons from 1980 levels. Like the SO₂ program, the NO_x program was implemented in two phases beginning in 1996 and 2000. Unlike the SO₂ program, however, the NO_x program does not cap NO_x emissions or utilize an allowance trading system. EPA is to promulgate new emission limits for such units at levels equivalent to those that can be achieved with low NO_x combustion systems.²⁸ EPA also must study the consequences of trading NO_x and SO₂ emission allowances and may thereafter expand the allowance market to allow such trades.²⁹

Phase 1 of the NO_x program began on Jan. 1, 1996 and applied to two types of boilers, which were also targets of the Phase 1 SO₂ program. The Phase 1 program applied to approximately 170 boilers and required those boilers to meet strict NO_x limits. Phase 2 began in 2000 and sets lower emissions limits for the Group 1 boilers and initial limits for Group 2 boilers.

The enforcement of acid rain control requirements could be draconian. The NO_x

²³In May 1992, Wisconsin Power & Light announced that it had entered into two allowance trading agreements: one with the Tennessee Valley Authority to sell 10,000 allowances at a price of between \$250 and \$400 per allowance; and another with Duquesne Power to sell 15,000 to 25,000 allowances at a price of between \$250 and \$400 per allowance. Additionally, in July 1992, Ohio Edison and Aluminum Company of America announced that they had entered into an allowance trading agreement pursuant to which Ohio Edison will purchase, at a price of between \$250 and \$350 per ton, 5,000 allowances annually over a five-year period beginning in 1995.

²⁴See CBOT, *An Overview of the Clean Air Allowance Market*. In April 1992, CBOT obtained approval from the Commodities Futures Trading Commission to establish and operate an allowance futures market. Additionally, in January 1992, CBOT submitted a proposal to EPA to administer the annual auctions and direct sales program. CBOT was approved in October 1992 to administer the annual auctions and direct sales program for a three-year term. 57 Fed. Reg. 46167 (1992). CBOT charges no fees and serves without compensation.

²⁵EPA reported substantial success for the acid rain program during 1995, declaring 100 percent compliance with required SO₂ emission reductions. Utilities cut SO₂ emissions by more than 50 percent as compared to 1980 levels, and airborne sulfate concentrations are reportedly dropping over large areas. 27 Env't Rep. (BNA) 885 (current developments) (citing EPA report entitled *1995 Compliance Results: Acid Rain Program*).

²⁶Clean Air Act § 403(f), as added by § 401 of the 1990 Clean Air Act Amendments; *see also* Clean Air Act § 403(a), as added by § 401 of the 1990 Clean Air Act Amendments.

²⁷New York has threatened to limit out-of-state transfers of allowances, for fear that a transfer from a Long Island utility to a midwest utility could exacerbate acid rain damage in the Adirondacks. Inside EPA's Clean Air Rep., Mar. 25, 1993, at 3.

²⁸Clean Air Act § 407(b), as added by § 401 of the 1990 Clean Air Act Amendments. EPA has promulgated NO_x emission limits for utility boilers. 59 Fed. Reg. 13538 (Mar. 22, 1994). The Agency's definition of "low NO_x burner technology" in this rule was overturned in *Alabama Power Co. v. EPA*, 40 F.3d 450, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 20166 (D.C. Cir. 1994). EPA published the second phase of the NO_x reduction program at 61 Fed. Reg. 67112 (Dec. 19, 1996) (to be codified at 40 C.F.R. pt. 76).

²⁹Clean Air Act § 403(c), as added by § 401 of the 1990 Clean Air Act Amendments.

and SO₂ emission limitations and allowances must be written into Title V permits for each affected unit.³⁰ Phase I units were required to submit acid rain permit applications and compliance plans by February 15, 1993, which are binding and enforceable until EPA issues a permit.³¹ Phase II permits are to be issued by the states.³² Congress provided that the full range of enforcement sanctions could be applied to a utility that did not submit an acceptable application and compliance plan by the applicable deadline, but specifically stated that EPA is not required to seek a shutdown order for such affected units.³³ Affected units must install continuous emission monitors or equivalent systems and are presumed to be emitting uncontrolled if such systems are not in place on schedule.³⁴ Units that emit in excess of their allowances are subject to automatic emission penalties of \$2,000 per ton (adjusted for inflation) that are payable without demand and do not preclude other enforcement action.³⁵ In addition, the excess emissions must be offset in future years.³⁶

There is no doubt that Congress has created a serious acid rain control program. Whether its ambitious goals can be achieved in the short time allowed and what will happen if noncompliance is widespread remain to be seen.

§ 12:58 Regulatory reform

Under intense pressure from Congresses interested in reforming administrative action to better balance the benefits of regulation and its costs, a strong perception of changing public attitudes, and a growing body of theoretical academic comment imploring EPA to allow market force rules rather than “command and control” rules to predominate, the Agency embarked upon significant regulatory experiments in

³⁰Clean Air Act § 408(a), 42 U.S.C.A. § 7651g, as added by § 401 of the 1990 Clean Air Act Amendments, 42 U.S.C.A. § 7651. *But see* Clean Air Act §§ 403(d), 416, as added by § 401 of the 1990 Clean Air Act Amendments. On December 3, 1991, EPA proposed rules governing the acid rain permit program. 56 Fed. Reg. 63098 (1991).

³¹Clean Air Act § 408(c)(1), as added by § 401 of the 1990 Clean Air Act Amendments. No federal or state permit may be issued for an affected unit until a certificate of representation has been filed stating how the benefits and obligations resulting from transfers of allowances are to be allocated if the unit has multiple owners. Clean Air Act § 408(i).

EPA has proposed to issue draft permits, approving only for the year 1995, substitution plans and reduced utilization plans submitted prior to July 16, 1993. Pending revisions to its existing regulations, EPA plans to defer action on all plans submitted after that date, due to concerns that the regulations could be interpreted to allow utilities to use substitution and reduced utilization plans to bring Phase II units into Phase I, thus creating significant numbers of excess allowances and threatening reduction of sulfur dioxide emissions intended under the Clean Air Act. 58 Fed. Reg. 43106, 43107 (Aug. 13, 1993) (notice of draft Phase I acid rain permits for 26 utilities); *see also* 58 Fed. Reg. 38370 (July 16, 1993). *Alabama Power Co. v. EPA*, No. 93-1611 (D.C. Cir.) challenged a statement set forth by EPA in the preamble of the proposed EPA action in 58 Fed. Reg. 38370 (July 16, 1993).

³²Clean Air Act § 408(d), as added by § 401 of the 1990 Clean Air Act Amendments.

³³Clean Air Act § 408(h), as added by § 401 of the 1990 Clean Air Act Amendments. In addition, compliance with allowances is to be determined after year-end, and for units that are part of a utility system, power pool or allowance pool, across the entire system or pool. Clean Air Act § 403(d).

³⁴Clean Air Act § 412(a)(d), as added by § 401 of the 1990 Clean Air Act Amendments.

³⁵Clean Air Act § 411(a), as added by § 401 of the 1990 Clean Air Act Amendments. On December 3, 1991, EPA proposed rules governing continuous emissions monitoring under the program. 56 Fed. Reg. 63002, 63291 (Dec. 3, 1991), codified at 40 C.F.R. Part 75.

³⁶Clean Air Act § 411(b), as added by § 401 of the 1990 Clean Air Act Amendments. On December 3, 1991, EPA proposed rules governing excess emissions offset planning and offset penalty requirements under the acid rain program. 56 Fed. Reg. 63336 (1991).

the mid-1990s. Spurred by speeches by the then-President and Vice-President¹ and under the loose umbrella of a new Office of Reinvention, EPA formed a series of programs trumpeting new approaches to regulation. The Agency's ambitious goal was to improve EPA's "regulatory, scientific, and analytical foundations, the effectiveness of its management systems, the responsiveness of its organizational structure, and its working relationships with states, local governments, environmentalists, community-based groups, and the business community."² Air pollution control has played a central role in these regulatory reform efforts.

The most ambitious of these regulatory reform efforts are two projects named Project XL³ and the Common Sense Initiative. Project XL was a rather loosely defined effort to find facility, industry, or geographically based projects that can achieve better environmental results than the current regulatory system at less cost.⁴ The Project XL group used facility-wide emission limitations in permits, for example, to allow a facility flexibility to meet regulatory requirements in the future.⁵ The program's promise to industry was that EPA would find ways to circumvent existing regulatory requirements if superior results could be achieved in another acceptable way. The Common Sense Initiative is a highly publicized attempt to reexamine the regulatory structure currently controlling the emissions of pollutants from six industries. On an industry-by-industry basis, the Agency is looking for ways to simplify permitting, find flexibility for operations, integrate environmental reporting, and remove obstructions to pollution prevention.⁶

Despite such agreeable goals, the Agency's regulatory reinvention efforts have encountered considerable obstacles and controversy. Industry has become increasingly unwilling to participate in these projects, complaining that the benefits of these programs are more descriptive than real.⁷ Environmentalists have questioned whether in fact environmental values will be protected.⁸ Projects undertaken in the

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¹President Clinton and Vice President Gore, Comments, Reinventing Environmental Regulation: Clinton Administration Regulatory Reform Initiative (Mar. 16, 1995). <http://www.epa.gov/reinvent/notebook/clinton.htm>.

²Fred Hansen, Deputy Administrator of EPA, Testimony before the Appropriations Committee of the United States Senate 1 (Feb. 29, 1996). <http://www.epa.gov/reinvent/notebook/hansen.htm>.

³As of January 2003, EPA was no longer accepting proposals for new XL projects. A total of 53 projects were accepted into the XL program. Then-EPA Secretary Christie Whitman announced the Bush Administration's decision to "move beyond" Project XL and NEPPS. Remarks of Christie Whitman, Administrator of the U.S. Environmental Protection Agency, at the National Environmental Policy Institute, Washington, D.C. (Mar. 8, 2001), at http://www.epa.gov/projectxl/whitman_03_08_01.htm.

⁴This description and additional information, including active, completed, and spin-off projects, can be found on the Internet at <http://www.epa.gov/projectxl/>.

⁵Such a permit has been issued for an Intel computer chip facility located in Ocotillo, Arizona. Copies of the permit, project agreement, and associated documents can be found on the Internet at http://yosemite.epa.gov/xl/xl_home.nsf/all/intel.html.

⁶EPA, Managing For Better Environmental Results 2 (1997). This report is located on the Internet at <http://www.epa.gov/reinvent/annual/>. An analysis of the Common Sense Initiative funded by EPA is available at http://www.epa.gov/sectors/pdf/pubs_finalcsi.pdf. See also Cary Coglianese & Laurie K. Allen, Building Sector-Based Consensus: A Review of the US EPA's Common Sense Initiative, in *Industrial Transformation: Environmental Policy Innovation in the United States and Europe* (2005).

⁷These difficulties are discussed in detail in United States General Accounting Office, Environmental Protection: Challenges Facing EPA's Efforts to Reinvent Environmental Regulation (July 1997) (GAO/RCED-97-155). See also Inside EPA's Clean Air Rep., July 10, 1997, at 13 (describing why oil companies abandoned the Common Sense Initiative, but had been convinced to return).

⁸Rena I. Steinzor, Regulatory Reinvention and Project XL: Does the Emperor Have Any Clothes?, 26 *Envtl. L. Rep.* (Envtl. L. Inst.) 10527 (Oct. 1996) (News & Analysis).

programs have proven controversial in the locales affected.⁹ Only time will tell if these approaches have a lasting effect upon EPA's air and other programs.

On February 14, 2002, President George Bush proposed the Clear Skies Initiative, a new measure to improve the Clean Air Act more significantly.¹⁰ The initiative aims to reduce air pollution by 70 percent and will adopt a comprehensive and integrated multi-pollutant approach to target three of the worst pollutants emitted by power plants, sulfur dioxide, nitrogen oxides, and mercury, simultaneously. Using the 1990 acid rain program as a model, the Clear Skies Initiative will adopt a market-based cap-and-trade program to achieve its objectives. The program would give electricity generators leeway in when and how they reduce air pollution by establishing maximum "caps" and requiring generators to hold an "allowance" for each ton of pollution emitted. Generators could freely trade these allowances and subsequently enjoy a great deal of flexibility under this program. As a senator, President Obama helped defeat the Clear Skies legislation.¹¹

III. FEDERAL EMISSION LIMITATIONS*

§ 12:59 In general

The 1970 Clean Air Act Amendments did not leave all stationary source emission limits to the states; the federal government was to promulgate standards for new sources and sources of hazardous air pollutants. The two types of standards were to serve distinct purposes. The new source performance standards (NSPS)¹ were to be a technology-forcing engine, pulling state implementation plans (SIPs) to higher levels of control and pushing economic development into cleaner pathways. The national emission standards for hazardous air pollutants (NESHAPs),² in contrast, were to be an entire regulatory system for dangerous pollutants that are not as widespread as the criteria pollutants; the equivalent of criteria pollutant listing, national ambient air quality standards (NAAQS), and SIPs rolled into one process. The NSPS were to shore up the process for achieving the NAAQS; the NESHAPs were to control pollution problems not addressed by the NAAQS system.

The 1990 Clean Air Act Amendments established a third set of federal standards to limit emissions of certain air pollutants. In contrast to the NSPS and NESHAPs, these standards apply not just to emission sources, but to those who produce, import, export, handle, or dispose of chlorofluorocarbons and certain other chemicals, not to prevent the build-up of harmful concentrations in the atmosphere, but to prevent the depletion of the stratospheric ozone layer.

§ 12:60 NSPS—New source performance standards

The 1970 Clean Air Act gave the federal government the job of setting performance standards for new stationary sources of air pollution. The states could regulate existing sources however they saw fit, so long as their implementation plans satisfied EPA that the air quality standards would be met. New sources, on the other hand, were to march to a different drummer, stringent national standards

⁹See EPA's compilation of the comments on the Intel project on the Internet at http://199.223.29.233/ProjectXL/xl_home.nsf/all/intel.html#_comments.

¹⁰See <http://www.epa.gov/clearskies>.

¹¹See Bob Tita, "Obama helps defeat Clear Skies Act," Chicago Business, March 9, 2005, available at <http://www.chicagobusiness.com/cgi-bin/news.pl?id=15763&seenIt=1>.

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¹Clean Air Act § 111, 42 U.S.C.A. § 7411.

²Clean Air Act § 112, 42 U.S.C.A. § 7412.

reflecting the best technology that an industry could afford. The focus of the NSPS is on industries, not pollutants. All sources in a listed industry category are covered, unless they were already under construction when the standards were proposed. All harmful air pollutants are regulated, regardless of whether other Clean Air Act standards apply.

The new source performance standards (NSPS) were intended to serve a variety of functions in the Clean Air Act scheme.¹ Congress expected the NSPS to carry much of the burden of attaining and maintaining the NAAQS. Every time an old factory was replaced with a new one equipped with NSPS controls, emissions would be reduced dramatically. Plants built in areas not violating the NAAQS would not degrade air quality much, helping to maintain the standards.² Tight controls on new sources also were expected to limit the long range transport of air pollution.³ By imposing the same requirements on new sources of a given type from coast to coast, the NSPS would eliminate the powerful incentive for states to weaken their SIPs so as to attract new industry.⁴ The division of labor between federal new source standards and state SIPs was expected to be more cost effective overall. The builders of new sources, with the advantage of knowing the NSPS in advance, could tailor the plants to the standards, saving considerably over the cost of retrofitting a similar existing plant with advanced control technology.⁵ The SIP scheme, on the other hand, left the states flexibility to take the technological (and financial) problems facing each existing source into account. The states could also use the NSPS in their implementation plans, where necessary to control major pollution problems, without having to duplicate the sophisticated and costly technological and economic analysis EPA would perform.⁶ Finally, the NSPS also provide a vehicle for regulating non-criteria pollutants.⁷ With so many jobs to perform, the new source performance standards are vital to the Clean Air Act scheme.

The role of the NSPS was somewhat diminished by the 1977 Amendments, which set separate control requirements for major new sources. The 1970 Act required

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¹See F. Anderson et al., *Environmental Protection: Law and Policy* 207 (1984).

²See Jorling, *The Federal Law of Air Pollution Control*, in *Federal Environmental Law* 1058, 1105 (E. Dolgin & T. Guilbert eds. 1974).

³F. Anderson et al., *Environmental Protection: Law and Policy* 207 (1984).

⁴Jorling, *The Federal Law of Air Pollution Control*, in *Federal Environmental Law* 1058, 1104 (E. Dolgin & T. Guilbert eds. 1974); F. Anderson et al., *Environmental Protection: Law and Policy* 207 (1984); D. Currie, *Air Pollution: Federal Law and Analysis* 3-21 (1981).

⁵See D. Currie, *Air Pollution: Federal Law and Analysis* 3-5 (1981).

⁶See Wetstone, *New Source Performance Standards*, in *Air and Water Pollution Control Law*: 1982 [Env'tl. L. Inst.] 159 (1982). Although the 1970 Amendments did not tie the schedule for promulgating SIPs to the schedule for NSPS, had the two schedules been met, a significant number of NSPS would have been out before states had to complete their first SIPs. The Administrator had 300 days from the enactment of the 1970 Amendments to promulgate the first set of NSPS. Clean Air Act § 111(b)(1), 42 U.S.C.A. § 7411(b)(1). The first SIPs were not due until more than a year after enactment. EPA had 120 days to promulgate air quality standards for criteria pollutants and the states had nine months after promulgation to submit their SIPs. Clean Air Act § 109(a)(1), 42 U.S.C.A. § 7409(a)(1).

⁷Clean Air Act § 111(d), 42 U.S.C.A. § 7411(d), authorizes EPA to require states to regulate existing sources of pollutants not regulated as criteria or hazardous pollutants, but which are regulated under a federal NSPS. The NSPS apply to all potentially harmful pollutants from industry categories by EPA, not just the criteria pollutants. If EPA regulates emissions of otherwise unregulated pollutants from NSPS sources, it is to require states to regulate emissions of those pollutants from pre-NSPS sources as well.

new source review for areas cleaner and dirtier than the air quality standards.⁸ In theory, the new source review programs established in 1977 for prevention of significant deterioration (PSD) and nonattainment areas⁹ could have made the NSPS virtually obsolete. Each program had its own technology standards that had to be at least as stringent as any applicable NSPS.¹⁰ Since all the country is either a PSD or nonattainment area, the NSPS could have been reduced to minor source standards. In fact, for years the standards imposed on many major sources built since the 1977 Amendments were the NSPS.¹¹ Because of their strong analytical base, these standards were easier for understaffed state agencies and EPA regional offices to impose than more stringent case-by-case standards.¹²

The Clean Air Act gives EPA a general blueprint to follow in developing NSPS and, as with the SIP requirements, the blueprint became more specific and complicated in 1977. Section 111 of the Act authorizes EPA to establish technology- and cost-based “standards of performance” for categories of new and modified stationary sources that significantly contribute to health- or welfare-threatening air pollution.¹³ Under the 1970 Amendments, the NSPS were to be based on “the application of the best system of emission reduction which (taking into account the cost of achieving such reduction) has been adequately demonstrated.”¹⁴ The section was amended in 1977 to require that for fossil fuel-fired power plants, the standards have to require technological emission controls, not just the use of low-sulfur fuel.¹⁵ Changes to the NSPS program are scattered through the 1990 Amendments. Most are merely conforming amendments, but two changes are major. The Amendments eliminate the technological control requirement for coal-fired power plants and mandate promulgation of NSPS for solid waste incinerators that would incorporate new hazardous air pollutant control elements along with the basic requirements of § 111. The first change is discussed below, the second in the following section on hazardous air pollutants.

§ 12:61 NSPS—The coverage of the NSPS

The NSPS process begins when EPA lists a category of stationary sources as one which “causes or contributes significantly to air pollution which may reasonably be anticipated to endanger public health or welfare.”¹ The current “causes or contributes” language was substituted for “may contribute” in 1977.² This language suggests that the NSPS should be aimed at categories of sources that are health

⁸The 1970 Amendments required state implementation plans to provide for preconstruction review of all sources that would jeopardize attainment or maintenance of the NAAQS. Clean Air Act Amendments of 1970, Pub. L. No. 91-604, § 4(a), 84 Stat. 1680, *reprinted in* United States Code Congressional and Administrative News p 1960, 1961 (Clean Air Act § 110(a)(2)(D), (4)).

⁹*See* § 12:86.

¹⁰*See* Clean Air Act § 165(a)(4), 42 U.S.C.A. § 7475(a)(4) (“best available control technology” (BACT) required for new sources in PSD areas); Clean Air Act § 169(3), 42 U.S.C.A. § 7479(3) (BACT must at least equal any applicable NSPS); Clean Air Act § 173(2), 42 U.S.C.A. § 7503(2) (“lowest achievable emission rate” (LAER) required of sources in nonattainment areas); Clean Air Act § 171(3), 42 U.S.C.A. § 7501(3) (LAER must at least equal applicable NSPS).

¹¹National Commission on Air Quality, *To Breathe Clean Air* 3.7-3-3.7-5 (1981).

¹²National Commission on Air Quality, *To Breathe Clean Air* 3.7-3-3.7-5 (1981).

¹³Clean Air Act § 111, 42 U.S.C.A. § 7411.

¹⁴Pub. L. No. 91-604, § 4(a), 84 Stat. 1683, *reprinted in* United States Code Congressional and Administrative News p 1963 (Clean Air Act § 111(a)(1)).

¹⁵Clean Air Act § 111(a)(1)(A), 42 U.S.C.A. § 7411(a)(1)(A).

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¹Clean Air Act § 111(b)(1)(A), 42 U.S.C.A. § 7411(b)(1)(A).

²Pub. L. No. 95-95, § 109(c)(1)(A), 91 Stat. 699 (1977), *reprinted in* 3 Congressional Research

threats before EPA lists them. However, the Agency may list categories that it deems likely to cause problems in the future, even if current SIP limits are projected to eliminate any NAAQS violations attributable to the industry.³

EPA has broad discretion in deciding to list categories,⁴ but is subject to statutory pressure to expand the list.⁵ The 1977 Amendments required EPA to identify all categories of major sources,⁶ those emitting more than 100 tons per year of a pollutant,⁷ and to list and regulate all the categories in three stages within four years of identification. EPA identified some eighty categories,⁸ but fell behind schedule in regulating them.⁹ The 1990 Amendments require EPA to propose standards by November 15, 1996 for all categories of major stationary sources listed prior to the Amendments.¹⁰ Standards for new categories must be proposed within a year after the category is listed, and promulgated within one year of proposal.¹¹ EPA must review standards every eight years, unless readily available information indicates review is not necessary.¹² Finally, the NSPS apply to federal facilities,¹³ but not to small rural grain elevators.¹⁴

§ 12:62 NSPS—The content of NSPS

The NSPS set uniform emission limitations for industrial categories or subcategories of sources. The standards generally must be stated in terms of maximum amounts of emissions, but for categories with substantial fugitive emissions that cannot practicably be quantified, EPA may specify work practice standards.¹ The standards are supposed to apply to all pollutants emitted by the source category,² but for most categories EPA has generally only regulated criteria pollutants and their precursors.³

The definition of a new source performance standard in the Act has changed with

Service, A Legislative History of the Clean Air Act Amendments of 1977 203 (Comm. Print 1978).

³National Asphalt Pavement Ass'n v. EPA, 539 F.2d 775, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20688 (D.C. Cir. 1976).

⁴National Asphalt Pavement Ass'n v. EPA, 539 F.2d 775, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20688 (D.C. Cir. 1976). *See also* D. Currie, Air Pollution: Federal Law and Analysis 3-16 (1981).

⁵The Senate Public Works Committee listed nineteen categories it thought should be listed in its report on the amendments. *See* S. Rep. No. 91, 91st Cong., 1st Sess. 16 (1970), *reprinted in* 1 Congressional Research Service, A Legislative History of the Clean Air Act Amendments of 1970 416 (1974).

⁶Clean Air Act § 111(f), 42 U.S.C.A. § 7411(f).

⁷Clean Air Act § 302(j), 42 U.S.C.A. § 7602(j). EPA was required to list and regulate all categories on the list in three stages, completing the entire job within four years of listing. Clean Air Act § 111(f)(1), 42 U.S.C.A. § 7411(f)(1).

⁸44 Fed. Reg. 49225 (1979).

⁹As of 1992 EPA had promulgated standards for 70 categories, 40 C.F.R. Part 60, Subparts Ca-VVV. The regulations still list fifty-nine categories for future priority action, 40 C.F.R. § 60.16, but some standards for some of the listed categories have been promulgated. The most recently proposed standards are for municipal solid waste landfills, a category not on EPA's priority list. 56 Fed. Reg. 24468 (1991), finalized at 61 Fed. Reg. 9905 (Mar. 12, 1996).

¹⁰Clean Air Act § 111(f)(1), as added by § 108(e)(2) of the 1990 Clean Air Act Amendments.

¹¹Clean Air Act § 111(b)(1)(B), as amended by § 108(e)(1)(A), of the 1990 Clean Air Act Amendments.

¹²Clean Air Act § 111(b)(1)(B), as amended by § 108(e)(1)(C), (D) of the 1990 Clean Air Act Amendments.

¹³Clean Air Act § 111(b)(4), 42 U.S.C.A. § 7411(b)(4).

¹⁴Clean Air Act § 111(i), 42 U.S.C.A. § 7411(i).

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¹Clean Air Act § 111(h), 42 U.S.C.A. § 7411(h).

²Clean Air Act § 111(a)(1), 42 U.S.C.A. § 7411(a)(1).

³*See* D. Currie, Air Pollution: Federal Law and Analysis 3-72 (1981). *But see* 40 C.F.R. § 60.32

each major set of amendments. The 1990 Amendments redefined the term to mean:

a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through application of the best system of emission reduction which (taking into account the cost of achieving such reduction, any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.⁴

The 1990 Amendments removed the requirement that NSPS entail “percentage reductions” and “technological systems of continuous emission reduction” that had been inserted in § 111 in 1977 principally to end the common practice of new power plants complying with the NSPS emission limit promulgated under the 1970 Act by purchasing low sulfur western coal.⁵ These requirements were abandoned as part of the compromise embodied in the new acid rain control provisions (Title IV) added by the 1990 Amendments.⁶ Although the NSPS are based on specific control measures, the standards themselves leave it up to the regulated source to select the method of compliance.⁷

Setting the NSPS is a complex analytical process. For each industry category, EPA must: (1) identify available technologies that control emissions from the types of sources found in that category; (2) determine what percentage reductions and emission rates can be achieved in practice with those technologies; and (3) simultaneously assess the financial and other costs associated with satisfying the possible standards. An added element of uncertainty is introduced by the fact that the standards will apply to facilities not yet in existence. EPA considers these several factors, many of them highly technical. The D.C. Circuit has subjected EPA’s decisionmaking to close and sometimes lengthy scrutiny,⁸ but has been deferential on the substantive issues.⁹

The selection of the control technology on which to base the NSPS is a process not easily defined with precision. EPA must search for the “best” technology, which could lead into the realm of the experimental, if not the theoretical.¹⁰ However, the search is constrained because the technology must be adequately demonstrated and

(standards of performance for sulfuric acid plants for sulfuric acid mist); 40 C.F.R. § 60.190 (standards of performance for primary aluminum reduction plants for fluoride); 40 C.F.R. § 60.283 (standards of performance for kraft pulp mills for total reduced sulfur).

⁴Clean Air Act § 111(a)(1), as amended by § 403 of the 1990 Amendments.

⁵H.R. Rep. No. 564, 95th Cong., 1st Sess. 131, *reprinted in* 3 Cong. Research Serv., A Legislative History of the Clean Air Act Amendments of 1977 510 (Comm. Print 1978). *See also* *Sierra Club v. Costle*, 657 F.2d 298, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20455 (D.C. Cir. 1981) (upholding EPA’s revised NSPS for coal-fired power plants). The 1977 version of the Act also stated that fossil fuel-fired power plants covered by NSPS may not achieve the standards by burning naturally clean fuels (*e.g.*, low sulfur coal); they had to achieve a percentage reduction in the amount of pollution from whatever fuel they use, but could take credit for pollution reductions from fuel cleaning (*e.g.*, coal washing). The language of old § 111 makes the percentage reduction and technological control requirements applicable to standards for non-fuel burning sources as well. Facilities other than coal-fired power plants could comply with NSPS in these categories, however, by using cleaner inputs (*e.g.*, water-based solvents that emit fewer hydrocarbons than organic solvents). Old Clean Air Act § 111(a)(1), 42 U.S.C.A. § 7411(a)(1), defined “technological system of continuous emission reduction” to include inherently low pollution processes or methods of operation. *See also* D. Currie, *Air Pollution: Federal Law and Analysis* 3-44 (1981).

⁶Section 403 of the 1990 Clean Air Act Amendments.

⁷S. Rep. No. 1196, 91st Cong., 2d Sess. 17 (1970), *reprinted in* 1 Cong. Research Serv., A Legislative History of the Clean Air Act Amendments of 1970 417 (1974).

⁸The slip opinion on *Sierra Club v. Costle*, 657 F.2d 298, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20455 (D.C. Cir. 1981), was over 250 pages long.

⁹*See, e.g.*, *Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d 427, 3 Env’tl. L. Rep. (Env’tl. L. Inst.) 20732 (D.C. Cir. 1973).

¹⁰*Sierra Club v. Costle*, 657 F.2d 298, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20455 (D.C. Cir. 1981).

the Agency must take into account the cost of compliance, the energy needed, and the environmental side effects of compliance.¹¹ In practice the Agency surveys air pollution control technologies in use in the industry category, sometimes both here and abroad,¹² in search of the most efficient controls that really work. Since the facilities intended to use the technology have, by definition, not yet been built, EPA may have to give some attention to their applicability to existing facilities.¹³ EPA is not limited to technology in routine use.¹⁴ While it may consider technology that will only become available in the future,¹⁵ it is constrained by the fact that the NSPS take effect on promulgation.¹⁶ In sum, EPA may base NSPS on the most advanced control technologies it can reasonably expect will work in the industry to be regulated.

Once it has identified one or more applicable technologies, EPA must calculate the percentage reductions and emission limits the technologies can achieve in practice. In this exercise the Agency must consider how the controls on which the standard is based will function under the full range of real operating conditions in the industry.¹⁷ If EPA tests the operational performance of controls in several plants, it must be able to demonstrate that the tests are relevant and reliable,¹⁸ and that those plants are representative of the industry in terms of the variables that effect control performance.¹⁹ The standards must be achievable continuously,²⁰ although EPA can write the standards so they do not apply to periods of time where emissions are unavoidably high, as when many industrial processes are started up.²¹ The need to demonstrate effectiveness with reference to the existing industry may prevent EPA from being too forward-looking in setting the NSPS, but EPA may set

¹¹The 1977 Amendments required consideration of energy and other impacts to codify the requirements found by the court in *Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20642 (D.C. Cir. 1973), *superseded by statute as stated in* *Am. Trucking Ass'ns, Inc. v. EPA*, 175 F.3d 1027 (D.C. Cir. 1999).

¹²EPA based the standards for coal-fired power plants on scrubbers, in part in reliance on the use of that technology in Japan. *See* D. Currie, *Air Pollution: Federal Law and Analysis* 3-24 (1981).

¹³*See* D. Currie, *Air Pollution: Federal Law and Analysis* 3-27 (1981).

¹⁴S. Rep. No. 1196, 91st Cong., 2d Sess. 16 (1970), *reprinted in* 1 Cong. Research Serv., *A Legislative History of the Clean Air Act Amendments of 1970* 416 (1974). *See also* *Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20642 (D.C. Cir. 1973), *superseded by statute as stated in* *American Trucking Ass'ns, Inc. v. EPA*, 175 F.3d 1027 (D.C. Cir. 1999).

¹⁵S. Rep. No. 1196, 91st Cong., 2d Sess. 16 (1970), *reprinted in* 1 Cong. Research Serv., *A Legislative History of the Clean Air Act Amendments of 1970* 416 (1974).

¹⁶*See* D. Currie, *Air Pollution: Federal Law and Analysis* 3-28 (1981) (EPA should not assume great advances in source design over what is currently in operation since the standards take effect on promulgation). This cautionary note is perhaps overly conservative. It seems likely that only a small share of the sources that will be governed by a particular NSPS are off the drawing board when the standard is proposed. It is not clear that the Act precludes assuming advances in production technology that are not reflected in actual plans as of the date of the proposal. Instead the Act probably only requires that any EPA projections of change in production systems be reasonable.

¹⁷*National Lime Ass'n v. EPA*, 627 F.2d 416, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20366 (D.C. Cir. 1980).

¹⁸*Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20642 (D.C. Cir. 1973), *superseded by statute as stated in* *American Trucking Ass'ns, Inc. v. EPA*, 175 F.3d 1027 (D.C. Cir. 1999).

¹⁹*National Lime Ass'n v. EPA*, 627 F.2d 416, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20366 (D.C. Cir. 1980); *Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d 427, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20732 (D.C. Cir. 1973).

²⁰*National Lime Ass'n v. EPA*, 627 F.2d 416, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20366 (D.C. Cir. 1980); *Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d 427, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20732 (D.C. Cir. 1973).

²¹*National Lime Ass'n v. EPA*, 627 F.2d 416, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20366 (D.C. Cir. 1980).

the standards at levels that no existing plants have achieved using the controls on which the standards are based.²² While the standards specify performance, not technology, the extensive analysis of alternative technologies performed in setting the standards focuses the attention of industry and regulators alike on a narrow range of control options.²³

The cost analysis required by § 111 is really an assessment of economic impact on the industry. As in the case with the effluent limitations guidelines under the Clean Water Act,²⁴ EPA essentially sets the standard at the level dictated by the most advanced technology that satisfies whatever test the statute prescribes, unless the cost of compliance will cause serious economic disruption in the industry.²⁵ EPA does not have to balance the costs against the environmental benefits.²⁶ Rather, it compares the capital and operating costs of controls with those of the new plant itself and considers whether the plants would still be economical at that price.²⁷ The standards for an economically strong industry thus may be far more costly than these imposed on an industry with a small average profit margin.

§ 12:63 NSPS—Applicability of the NSPS

Section 111 requires new sources to comply with the NSPS. The applicability of the standards thus turns on what is new and what is a source. Since the NSPS add considerably to the cost and the cleanliness of a new facility, there has been much interest in the answers to these questions.

§ 12:64 NSPS—Applicability of the NSPS—“New” source

Congress defined “new source” broadly. The term includes not only newly constructed factories or furnaces, but also any modification of an existing source, including any physical alteration and certain changes in the way the source is operated, that increases emissions or adds a new pollutant to emissions.¹ Generally, a change in fuels, other than a change which the facility was designed to accom-

²²Sierra Club v. Costle, 657 F.2d 298, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20455 (D.C. Cir. 1981).

²³The Act does allow EPA to waive the NSPS requirements, after notice and comment, for facilities that attempt to comply through innovative technologies that eventually fall short of the regulatory mark. Clean Air Act § 111(j), 42 U.S.C.A. § 7411(j). The waivers have not been used much in practice. See D. Currie, Air Pollution: Federal Law and Analysis 3-59 (1981). Indeed, the most recent action taken by EPA under this provision—an extension of a previously granted waiver for a batch digester for a kraft pulp mill—dates from April 12, 1988. 53 Fed. Reg. 12008 (1988).

²⁴See § 13:48.

²⁵Portland Cement Ass'n v. Train, 513 F.2d 506, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20341 (D.C. Cir. 1975).

²⁶Portland Cement Ass'n v. Ruckelshaus, 486 F.2d 375, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20642 (D.C. Cir. 1973), superseded by statute as stated in American Trucking Ass'ns, Inc. v. EPA, 175 F.3d 1027 (D.C. Cir. 1999).

²⁷Portland Cement Ass'n v. Ruckelshaus, 486 F.2d 375, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20642 (D.C. Cir. 1973), superseded by statute as stated in American Trucking Ass'ns, Inc. v. EPA, 175 F.3d 1027 (D.C. Cir. 1999).

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¹Clean Air Act § 111(a)(2), 42 U.S.C.A. § 7411(a)(2). Removal of an emission control device pursuant to a federally-approved state relaxation of emission control requirements imposed pursuant to § 111(d) of the Act may transform a facility into a new source. National-Southwire Aluminum Co. v. EPA, 838 F.2d 835, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20502 (6th Cir. 1988). Replacement of major components of a facility to *extend* its useful life, the cost of which is not high enough to trigger the reconstruction rule, may be a covered modification if it will increase the facility's emission rate over that associated with the highest operating level of which the facility was capable immediately prior to the replacement. Wisc. Elec. Power Co. v. Reilly, 893 F.2d 901, 20 Env't. L. Rep. (Env'tl. L. Inst.) 20414 (7th Cir. 1990). See also 57 Fed. Reg. 32313 (1992) (rules relaxing new source review requirements for

moderate prior to the applicability of a standard,² is a covered change in operation, but a mere increase in the level of operation, *e.g.*, a change from two to three shifts, is not.³ Under EPA's "reconstruction" rule, physical modification of a facility that does not result in an emissions increase is subject to the NSPS if the cost is greater than 50 percent of the cost of building a replacement facility.⁴ By controlling modifications, the NSPS avoid creating an incentive for industry to modify old plants instead of building new ones.

A source is subject to the NSPS if construction or modification was "commenced" after the publication of the proposed NSPS that will be applicable.⁵ The proposal date applies even if the standard is not finalized for years.⁶ "Commencing construction" requires undertaking a continuous program of construction or modification, or entering into a contractual obligation to do so. Thus, the fact that preliminary planning or site preparation was under way when the proposal was issued does not avoid the NSPS.⁷ To qualify as "commencing construction," a contract must be sufficiently binding to impose significant liability on the source owner for breaking the agreement.⁸ Construction of part of a plant, *e.g.*, an office building, not integrally linked to the emission source, *e.g.*, an industrial boiler, does not constitute commencing construction.⁹ If a proposed plant has several parts, each of which might be covered by NSPS, the timing of construction of each is considered separately in determining whether the NSPS apply.¹⁰ As interpreted, the "commenced construction" language provides some balance between the goals of giving notice to the industry of applicable pollution control requirements early enough to allow efficient compliance, on the one hand, and protecting against evasion of the standards with false construction starts, on the other.

§ 12:65 NSPS—Applicability of the NSPS—New "source"

That which the NSPS regulates is the new "source," so it follows that the definition of that term is critical to the application of § 111. Section 111(a)(3) defines "stationary source" as "any building, structure, facility, or installation which emits

acid rain control projects, and similar discussion in section V relating to modifications under New Source Review).

²40 C.F.R. § 60.14(e)(4).

³40 C.F.R. § 60.14(e)(2), (3). However, the rule relating to fuel changes does not apply to electric utility steam generating units, which may switch to a less polluting fuel and make changes in operating equipment needed to maintain capacity without triggering NSPS requirements. 57 Fed. Reg. 32314, 32339 (1992), (codified at 40 C.F.R. § 60.14(h)). Sections 409 and 415 of the Clean Air Act exempt certain other modifications of electric utility steam generating units from NSPS review. Clean Air Act §§ 409(d), 415(b), (c), as added by § 401 of 1990 Clean Air Act Amendments; 57 Fed. Reg. at 32339 (codified at 40 C.F.R. § 60.14(i)–(1)).

⁴40 C.F.R. § 60.15.

⁵Clean Air Act § 111(a)(2), 42 U.S.C.A. § 7411(a)(2).

⁶*United States v. City of Painesville*, 644 F.2d 1186, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20630 (6th Cir. 1981).

⁷40 C.F.R. § 60.2.

⁸*Potomac Elec. Power Co. v. EPA*, 650 F.2d 509, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20815 (4th Cir. 1981).

⁹*Potomac Elec. Power Co. v. EPA*, 650 F.2d 509, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20815 (4th Cir. 1981).

¹⁰*Sierra Pacific Power Co. v. EPA*, 647 F.2d 60, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20671 (9th Cir. 1981).

or may limit any air pollutant.”¹ This is the only definition of the key regulatory term “source” in the Act, and it is applied in other programs as well.² The Supreme Court has held that this definition was sufficiently general to leave EPA discretion to interpret “source” to mean both a large facility and each of its pollution-emitting components.³ Such flexibility is clearly needed where the same definition must serve for both the NSPS program, which generally focuses on specific pollution control apparatus, as well as Title I preconstruction permit programs, like the PSD program, where the focus is on the effects of a specific plant on its environs.⁴

As a general matter, in the NSPS program, EPA interprets the definition of “source” to include both a large facility like a factory and each of its pollution-emitting components. This is important for the “commencement of construction” question⁵ and in determining whether a change in a facility is a “modification,” which must comply with applicable NSPS. The dual definition precludes a company from evading the NSPS by cutting emissions from an existing unit in a plan to offset an emission increase from a modification. If the source was the entire plant, there would be no emission increase and no modification under § 111(a)(4). While EPA has not used the plantwide definition in the NSPS program, the Agency has been receptive to allowing multiple emission units covered by an NSPS to comply as a group with the aggregate limit, without regard to whether each unit complied with the limit.⁶

The provision of NSPS for existing sources, under § 111(d),⁷ is intended to capitalize on the comprehensiveness of NSPS. Theoretically, these standards control the emission of all pollutants from affected sources. Section 111(d) allows the standards to be extended to existing sources of otherwise unregulated pollutants. Under § 111(d), EPA may issue guidelines directing the states to apply to existing sources the NSPS for pollutants regulated for new facilities, but not regulated elsewhere under the Act, using a process similar to the state implementation plan process.⁸ In addition to the factors that normally must be considered in NSPS, the 1977 Amend-

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¹42 U.S.C.A. § 7411(a)(3).

²*Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20507 (1984) (definition applied in nonattainment area new source review program). In the hazardous air pollutants section of the 1990 Amendments, Congress specifically adopted the definition of “stationary source” in § 111. Clean Air Act § 112(a)(3), as added by § 301 of 1990 Clean Air Act Amendments.

³*Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20507 (1984).

⁴*See Citizens for Clean Air v. EPA*, 959 F.2d 839, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20669 (9th Cir. 1992).

⁵*See* § 12:63 note 1 and accompanying text.

⁶EPA considered a petition for the first such “bubble” for some time, *Petition for rulemaking to amend 60 C.F.R. Subpart B*, submitted by Central Illinois Public Service Co. (Oct. 1, 1982). The proposal called for treating two power plants governed by the 1971 NSPS as a single unit. Both now meet the 1.2 pound sulfur dioxide limit by burning low sulfur western coal. Under the bubble, one would exceed that limit by burning higher sulfur local coal, the other would do better by installing a scrubber. The average emissions of the two units would satisfy the 1.2 pound limit. EPA finally got around to granting the petition in 1987, but required the two units to achieve a 1.1 pound combined limit. 52 Fed. Reg. 28946 (1987).

⁷42 U.S.C.A. § 7411(d).

⁸For a thorough explication of the evolution and implementation of section 111(d), *see* D. Currie, *Air Pollution: Federal Law and Analysis* 3-62-3-82 (1981). *See also* 44 Fed. Reg. 29828 (1979) (notice of availability of section 111(d) guidelines for control of total reduced sulfur (TRS) from existing kraft pulp mills). Some states move slowly in developing section 111(d) standards. *See, e.g.*, 53 Fed. Reg. 38290 (1988) (nine years after publication of guidelines, final approval of compliance schedule in Georgia TRS control plan).

ments allow a state implementing § 111(d) to take into account the remaining useful life of the facilities to be regulated. This is intended to promote cost-effectiveness by assuring that expensive pollution controls are not required for sources that will only continue to operate for a short time. Once guidelines for specific industries are issued, states have nine months to submit plans for the control of emissions from existing sources in the affected categories.

Section 111(d) was not used heavily for many years.⁹ As commentators have noted, the ineffectiveness of § 111(d) is largely due to EPA's concentration on pollutants covered by the ambient standards in new source rulemakings.¹⁰ Few NSPSs address non-criteria pollutants. Recently, however, EPA has shown signs of making increased use of § 111(d).¹¹

§ 12:66 NSPS—NSPS revisions

The NSPS are to be kept up to date, but doing so is no easy matter. Section 111 provides two avenues for revisions to the NSPS. Congress mandated changes in the standards for oil, gas, and coal-burning power plants to require installation of controls instead of fuel switching.¹ The revision of the power plant NSPS was one of the most contentious and hotly contested regulatory actions EPA has undertaken under the Clean Air Act.² For other industries EPA may revise the standards "from time to time."³ With the Agency far behind schedule in writing the initial NSPS, the revisions do not receive much attention,⁴ except for small changes in measurement or monitoring requirements.⁵ EPA rarely has tightened standards to reflect new technologies.

§ 12:67 NSPS—The NSPS, technology forcing, and new-source bias

The NSPS was to be one of the keys to the technology forcing impetus of the Clean Air Act. The standards were to compel industry to use advanced controls on new sources and to demonstrate the feasibility of such controls so states could

⁹D. Currie, *Air Pollution: Federal Law and Analysis* 3-66-3-68 (1981). *See also* 40 C.F.R. part 62 (compilation of state § 111(d) standards). Those § 111(d) standards that have been promulgated can have a major impact on emissions from, and compliance costs for, the industries that they cover.

¹⁰*See* F. Anderson et al., *Environmental Protection: Law and Policy* 208 (1984); Jorling, *The Federal Law of Air Pollution Control*, in *Federal Environmental Law* 1058, 1107 (E. Dolgin & T. Guilbert eds. 1974).

¹¹*See* 54 Fed. Reg. 52188 (1989) (allowing draft or final § 111(d) emission guideline document to be published with proposed or final NSPS); 54 Fed. Reg. 52209 (1989) (proposed § 111(d) guidelines for state control of existing municipal waste combustors for which NSPS were proposed concurrently). The 1990 CAA amendments added § 129 to the CAA. Section 129 specifies that revised standards and guidelines must be developed for MWC's in accordance with the requirements of both § 111 and new § 129. Section 129 further specifies that revised standards and guidelines be developed for both large and small MWC plants and that the revised standards and guidelines must reflect more restrictive performance levels. Section 129 includes a schedule for revising the 1991 standards and guidelines. 60 Fed. Reg. 65387 (Dec. 19, 1995).

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¹Clean Air Act § 111(b)(6), 42 U.S.C.A. § 7411(b)(6).

²*See* B. Ackerman & W. Hassler, *Clean Coal/Dirty Air* (1981). *See also* D. Currie, *Air Pollution: Federal Law and Analysis* 3-23-3-28 (1981); *see also* *Sierra Club v. Costle*, 657 F.2d 298, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20455 (D.C. Cir. 1981).

³Clean Air Act § 111(b)(1)(A), 42 U.S.C.A. § 7411(b)(1)(A).

⁴*See, e.g.*, 40 C.F.R. part 60E (NSPS for incinerators, last change 1974); 40 C.F.R. part 60I (asphalt plants, last change 1974; concrete plants, last change 1975).

⁵*See, e.g.*, 40 C.F.R. § 60.73 (1985 change in emission monitoring only change for nitric acid plants NSPS after 1974).

require their use by existing sources in their SIPs.¹ Section 111's effectiveness in forcing technology is open to question.

To the extent that section 111 has forced technology, it has been in the spreading use of technologies already in existence. The coal-fired power plant standards are a good example.² The 1978 standards require coal washing and wet or dry scrubbers. Scrubbing technology was in its infancy when the 1971 standards, allowing compliance through use of low-sulfur coal, were promulgated. By 1978, however, the efficacy of wet scrubbers was well established, though dry scrubbers were more open to question.³ However, while scrubbers have come a long way in this regulatory hot house, more innovative technologies, such as fluidized-bed combustion, may have languished out in the cold.

The coal-fired power plant NSPS did help force the development of scrubbing technology, which was more effective than any other flue gas desulfurization technology in existence before the 1970 Act, however. Perhaps this is because the source category is an enormous source of criteria pollutant emissions and received direct congressional attention, in addition to Agency and public scrutiny.⁴ In other categories, the NSPS often settled for second- or third-best technologies, because of the restraint built into the process by the need to demonstrate achievability,⁵ the slow pace of revisions,⁶ and the failure of the innovative technology variances to create real incentives.⁷

Some argue that not only do the NSPS not force technology, but in combination with the other, even more onerous new source review requirements, they create a bias against construction of new sources. There is little doubt that in the period in which NSPS took effect, the pace of replacement of the country's industrial plant slowed. Companies kept plants in operation long beyond the end of their book useful lives. This phenomenon cannot necessarily be attributed to new-source bias, however. Powerful economic factors—slower growth in the domestic economy, lack of capital in the steel and utility industries, and high interest rates—all played roles as well.⁸

§ 12:68 NSPS—Implementation and enforcement

Although the NSPS are federal standards, EPA may delegate enforcement author-

[Section 12:67]

¹See § 12:59 notes 2–4 and accompanying text.

²See *Sierra Club v. Costle*, 657 F.2d 298, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20455 (D.C. Cir. 1981); D. Currie, *Air Pollution: Federal Law and Analysis* 3-22–3-28 (1981).

³See *Sierra Club v. Costle*, 657 F.2d 298, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20455 (D.C. Cir. 1981); D. Currie, *Air Pollution: Federal Law and Analysis* 3-22–3-28 (1981).

⁴Congress essentially wrote this standard in amending the Act in 1977. See Schoenbrod, *Goals Statutes or Rules Statutes: The Case of the Clean Air Act*, 30 UCLA L. Rev. 740 (1983) (proposition that the Clean Air Act is only effective where Congress shouldered the politically sensitive job of defining standards for specific industries).

⁵See § 12:61 notes 20–26 and accompanying text. See also National Commission on Air Quality, *To Breathe Clean Air* 38 (1981).

⁶See *Sierra Club v. Costle*, 657 F.2d 298, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20455 (D.C. Cir. 1981); D. Currie, *Air Pollution: Federal Law and Analysis* 3-22–3-28 (1981).

⁷See § 12:61 note 16 and accompanying text.

⁸The National Commission on Air Quality concluded that the PSD and nonattainment programs, which have regulated major industrial development since at least 1976, have not significantly slowed industrial expansion. National Commission on Air Quality, *To Breathe Clean Air* 265 (1981).

ity to the states.¹ In the 1980s, authority for implementing the NSPS flooded out to the states.² As of mid-1989, all fifty states and territories had some NSPS authority.³

After delegation, the standards (like SIPs) continue to be federally enforceable.⁴ EPA enforcement policy gives high priority to NSPS violations.⁵ The full range of federal enforcement tools, including section 120 noncompliance penalties,⁶ is available for section 111 violations.

§ 12:69 Emission standards for hazardous air pollutants

The federal scheme for regulation of hazardous air pollutants was rebuilt in the 1990 Clean Air Act Amendments. The 1970 Act had required EPA to list potentially deadly airborne substances that are not as widespread in the ambient air as the criteria pollutants and then to set standards for these “hazardous air pollutants” that would protect public health regardless of cost. That program was a failure because it required EPA to impose very costly standards on industry completely to eliminate very uncertain risks of harm, and EPA simply refused to list many pollutants. During the 1980s, facing growing pressure to expand hazardous air pollutant regulation, EPA developed an alternative to the statutory approach, an alternative that relied on risk assessment, technology-based standards, and limited analysis of costs to arrive at “reasonable” standards, but was rebuffed by the courts.

To give life to hazardous air pollutant regulation, Congress shelved the idea of zero-risk regulation and endorsed a variant of EPA’s approach. It created a new system, mandating stringent technology-based emission limitations similar to NSPS for industries emitting listed hazardous air pollutants and, unless Congress decrees otherwise after reviewing an EPA report on the subject, requiring additional controls for sources for which the residual risk exceeds a stringent national standard of acceptable risk. The 1990 Amendments took away EPA’s listing discretion, requiring the Agency to regulate 189 specified substances. In addition, Congress prescribed special rules for four special categories of hazardous air pollutant emissions: coke ovens, fossil fuel fired utility steam generating units, oil and gas wells and pipelines, and solid waste incinerators.

§ 12:70 Emission standards for hazardous air pollutants—Section 112 regulation under the 1970 act—The statutory framework

[Section 12:68]

¹Clean Air Act § 111(c), 42 U.S.C.A. § 7411(c).

²During 1983, for example, EPA made eighteen delegations of NSPS authority. Since the Agency sometimes delegates authority only for a handful of industry categories at one time, some states received multiple delegations. 48 Fed. Reg. 17356 (Apr. 22, 1983) (Puerto Rico); 48 Fed. Reg. 20693 (May 9, 1983) (Texas); 48 Fed. Reg. 28269, 28271 (June 21, 1983) (Nevada); 48 Fed. Reg. 29691 (June 28, 1983) (Iowa); 48 Fed. Reg. 30633 (July 5, 1983) (South Carolina); 48 Fed. Reg. 32075 (July 13, 1983) (Washington); 48 Fed. Reg. 36579 (Aug. 12, 1983) (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont); 48 Fed. Reg. 41407 (Sept. 15, 1983) (Hawaii); 48 Fed. Reg. 41764 (Sept. 19, 1983) (Delaware); 48 Fed. Reg. 43325 (Sept. 22, 1983) (Arizona); 48 Fed. Reg. 46535 to 46536 (Oct. 13, 1983) (Oregon, Puerto Rico); and 48 Fed. Reg. 57275 (Dec. 29, 1983) (Maryland). The delegation process continues apace. *See, e.g.*, 56 Fed. Reg. 63875 (1991) (delegation of certain NSPS categories to Connecticut, Maine, New Hampshire, Rhode Island, and Vermont); 56 Fed. Reg. 13589 (1991) (delegation of certain NSPS categories to Modoc County, Santa Barbara County, and Siskiyou County, California); 55 Fed. Reg. 39405 (1990) (delegation of certain NSPS categories to Wyoming).

³40 C.F.R. § 60.4.

⁴Clean Air Act § 111(c)(2), 42 U.S.C.A. § 7411(c)(2).

⁵*See* EPA Memorandum, Guidance on “Timely and Appropriate” EPA/State Enforcement Response for Significant Air Violators 2 (June 1984) (NSPS violators subject to expedited enforcement schedule).

⁶42 U.S.C.A. § 7420. For general discussions of EPA Clean Air Act enforcement *see* § 12:8; Ch 9 (enforcement).

As defined in 1970, the Clean Air Act section 112 national emission standards for hazardous air pollutants (NESHAPs)¹ were categorical emission limits, cut from the same regulatory cloth as the section 111 NSPS, but playing a different programmatic role. Section 112 was intended to regulate pollutants that present severe health risks, but are not as widely dispersed as the criteria pollutants.² The NESHAPs, like the NSPS, were nationally uniform emission limits set without reference to the national ambient air quality standards.³ Unlike the NSPS, however, the NESHAPs were designed to directly protect public health. To achieve this result, the NESHAPs were to be devised in a process somewhat similar to the NAAQS/state implementation plan⁴ process. Like the criteria pollutant program, the NESHAPs program began by listing target pollutants.⁵ Once EPA had listed a pollutant as hazardous, it had to propose “emission standards” within 180 days and promulgate final standards within another 180 days unless EPA found “on the basis of information presented” at hearings on the proposed standards, that the pollutant was not hazardous.⁶ EPA was to address regulation of these pollutants through uniform national emission or work practice standards set not on the basis of an NSPS-type analysis of costs and technology, but to protect the public health, with an ample margin of safety, regardless of cost.⁷ To achieve that goal, Congress was prepared for standards allowing no measurable emissions and the closing of factories for which no adequate control technologies were available.⁸

§ 12:71 Emission standards for hazardous air pollutants—Section 112 regulation under the 1970 act—Implementation history

The NESHAPs program was too tough for its own good. Apparently deprived of flexibility in regulating listed pollutants, EPA long chose to exercise its discretion to list infrequently. When it listed pollutants, EPA moved slowly to regulate and gave some weight to technological feasibility and cost. As a result, the NESHAPs program

[Section 12:70]

¹42 U.S.C.A. § 7412.

²See Clean Air Act § 112(d), 42 U.S.C.A. § 7412(d).

³See § 12:59.

⁴See §§ 12:1, 12:8.

⁵Section 112(b)(1)(A) directed the Administrator to make and subsequently, “from time to time, [revise] a list which includes each hazardous air pollutant for which he intends to establish an emission standard under this section.” This passage appeared to leave the Administrator discretion in deciding what to list, but in 1977, with only a handful of pollutants listed, Congress required EPA to evaluate the health effects of airborne radionuclides, cadmium, arsenic, and polycyclic organic matter within fixed periods of time and, upon finding harmful impacts, to list and regulate the pollutants as hazardous or criteria pollutants.

⁶Clean Air Act § 112(b)(1)(B), 42 U.S.C.A. § 7412(b)(1)(B).

⁷Initially, section 302(k) required NESHAPs to be “emission standards,” which limited “the quantity, rate, or concentration of emissions of air pollutants on a continuous basis.” EPA wrote vinyl chloride standards in terms of work practices, because most emissions came from “fugitive” sources and could not easily be measured. In 1976, in *Adamo Wrecking Co. v. United States*, 434 U.S. 275, 8 Env’tl. L. Rep. (Env’tl. L. Inst.) 20171 (1978), the Supreme Court overturned the vinyl chloride standards because they were inconsistent with the definition of “emission limit.” In 1977, Congress added a new section 112(e) to allow EPA to set work practice standards if emission standards were impractical. Work practice standards must be stated in terms of how the polluting activity is conducted, not how much pollution enters the ambient air. The NESHAPs were to protect public health with “an ample margin of safety.” Section 112 did not direct EPA to consider economic or technological feasibility in setting the standards.

⁸See Senate Consideration of the Conference Report, Discussion of Key Provisions, *reprinted in* 1 Cong. Research Serv., *A Legislative History of the Clean Air Act Amendments of 1970* 133 (1974).

was a lightning rod for lawsuits and legislative proposals from all sides.¹

Section 112 spelled out a complete program for implementing the NESHAPs. It made it illegal to build new sources or operate existing ones that will violate NESHAPs.² However, the regulated industries were given a modicum of relief, since the standards did not go into effect until ninety days after promulgation and, absent an imminent threat to the public health, could be further held in abeyance to enable hard-pressed industries a chance to comply.³ Like the NSPS, NESHAPs were implemented by qualified states, although EPA retained the authority to enforce.⁴

Section 112 saw limited use, but plenty of controversy. EPA listed no more than a handful of hazardous pollutants and was slow to regulate all those on the list. Old section 112 could be read to require EPA to impose draconian controls to completely eliminate the risks whenever EPA concluded that an air pollutant may be hazardous at any level of emission.⁵ During the 1970's, concern over the severity of the regulatory requirements, and the belief that greater public health gains were to be won through attainment of the NAAQS, discouraged EPA from pulling the section 112 listing trigger very often.⁶ The regulatory program failed to keep pace with public concern over air toxics, which was fed by growing scientific evidence of the chronic toxicity of many airborne contaminants in relatively low concentrations. During the latter half of the 1970s, pressure from environmental and public health groups pushed EPA to the point of proposing an airborne carcinogen policy.⁷ The policy would have greatly expanded the scope of section 112 regulation, but also would have openly incorporated technological and economic concerns into standard setting.⁸

By 1980, EPA had listed only seven pollutants: asbestos (1971), benzene (1977), beryllium (1971), inorganic arsenic (1980), mercury (1971), radionuclides (1979), and vinyl chloride (1975),⁹ and had regulated only four: asbestos, beryllium, mercury, and vinyl chloride.¹⁰ Proposed revisions tightening the vinyl chloride standard had

[Section 12:71]

¹See generally Wetstone, National Emission Standards for Hazardous Air Pollutants, in *Air and Water Pollution Control Law*: 1982 [Envtl. L. Inst.] 184 (1982).

²Clean Air Act § 112(c), 42 U.S.C.A. § 7412(c).

³Clean Air Act § 112(c), 42 U.S.C.A. § 7412(c).

⁴Clean Air Act § 112(d), 42 U.S.C.A. § 7412(d). For an example of an EPA enforcement action, see *United States v. Ethyl Corp.*, 761 F.2d 1153, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20589 (5th Cir. 1985). EPA regulations governing application and enforcement of NESHAPs are codified at 40 C.F.R. part 61, subpart A. Many of the relevant sections will have to be revised in light of the new permitting provisions of the 1990 Clean Air Act Amendments.

⁵For example, it is generally accepted that there is no threshold level of safe exposure to airborne carcinogens. Therefore, protection of the public with a margin of safety would seem to require cutting out all exposure by eliminating all emissions. The option of moving people away from the risk seems foreclosed by the requirement in section 112 that EPA use emission or work practice standards. Completely eliminating emissions may be very costly or impossible, short of shutting down the source in some instances. Yet science cannot tell us with certainty whether most suspect substances are carcinogenic to humans. It can only make educated guesses. Thus section 112 forced EPA to face imposing large, measurable costs of compliance without knowing very clearly the magnitude of the risks it is removing.

⁶Environmental and Energy Study Inst. & Env'tl. L. Inst., *Statutory Deadlines in Environmental Legislation: The Case Studies 3* (1985) (case study 3.b., Hazardous Air Pollutant Listing).

⁷44 Fed. Reg. 58642 (1979).

⁸44 Fed. Reg. 58642 (1979).

⁹Council on Environmental Quality, *Environmental Quality 1983: 14th Annual Report of the CEQ* 35 (1983).

¹⁰Council on Environmental Quality, *Environmental Quality 1983: 14th Annual Report of the*

been pending since 1977.¹¹ Congress, which in parallel contexts under other statutes had relied on EPA to find a way to make the statute work, did not enter the fray until 1990.¹²

Frustrated with EPA and congressional inaction, environmentalists and one state sued EPA over its failure to carry out a nondiscretionary duty to regulate the listed pollutants arsenic and radionuclides. Plaintiffs were successful in these deadline suits, although it took all the power of the judiciary to force EPA to complete the regulatory process for radionuclides.¹³ By 1984 EPA had proposed standards for radionuclides, benzene, and arsenic.¹⁴

In 1984, EPA took the offensive, launching a broader section 112 program based on risk assessment and risk management. EPA's regulatory action proved no less controversial than its earlier inaction, however. EPA acceded to court orders to regulate listed hazardous air pollutants and became less reluctant to list additional pollutants,¹⁵ but it also incorporated controversial risk assessment techniques and cost/benefit balancing into the process.¹⁶ The result of this new approach was that EPA had greater flexibility in deciding whether and how to regulate pollutants

CEQ 35 (1983).

¹¹See 42 Fed. Reg. 28154 (1977). The proposal finally was withdrawn in 1985. 50 Fed. Reg. 1182 (1985).

¹²The heart of the 1972 Federal Water Pollution Control Act Amendments' regulatory scheme is categorical, technology- and cost-based effluent limitations for new and existing sources. The effluent guideline approach is essentially the same as that for Clean Air Act new source performance standards. In FWPCA § 307(a)(1), 33 U.S.C.A. § 1317(a)(1), Pub. L. No. 92-500 § 2, 86 Stat. 856 (1972), however, Congress directed EPA to set effluent limitations for toxic water pollutants for pollutants, not industries, based on the toxicity and environmental impacts, not the availability and affordability of control technologies. In many respects the section 307(a)(1) standards were the equivalent of Clean Air Act § 112, NESHAPs. When EPA proved slow to implement the section 307(a)(1) mandate, environmentalists sued. EPA proposed using section 301 best available technology standards to regulate a list of prevalent toxics and the suit was settled on this basis. *National Resources Defense Council, Inc. v. Train*, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20588 (D.D.C. 1976). Congress adopted and expanded this scheme in amending the Clean Water Act in 1977. Pub. L. No. 95-217, §§ 42 to 47, 53(c), 91 Stat. 1582-1586, 1590 (1977).

A parallel lawsuit by environmentalists over air toxics, *Env'tl. Def. Fund v. Ruckelshaus*, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20173 (1973), did not produce a compromise toxics strategy. Congress did not prescribe a technology-based approach for toxics in the 1977 Clean Air Act Amendments, making only relatively minor changes in section 112, Pub. L. 95-95, §§ 109(d)(2), 110, 401(c), 91 Stat. 701, 703, 793 (1977), and adding section 122, Pub. L. No. 95-95, § 120(a), 91 Stat. 720 (1977).

¹³*New York v. Gorsuch*, 554 F. Supp. 1060, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20248 (S.D. N.Y. 1983) (EPA ordered to propose arsenic standards); *Sierra Club v. Gorsuch*, 551 F. Supp. 785, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20231 (N.D. Cal. 1982) (propose radionuclide standards); *Sierra Club v. Ruckelshaus*, 602 F. Supp. 892, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20080 (N.D. Cal. 1984) (promulgate radionuclide standards), 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20082 (N.D. Cal. 1984) (promulgate radionuclide standards or delist), 602 F. Supp. 892, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20101 (N.D. Cal. 1984) (Administrator held in contempt for failure to promulgate standards.).

¹⁴48 Fed. Reg. 15076 (1983) (radionuclides); 45 Fed. Reg. 26660, 83448, 83952 (1980); 46 Fed. Reg. 1165 (1981) (benzene); 48 Fed. Reg. 33112 (1983).

¹⁵EPA has acknowledged that hazardous air pollutants pose a significant national health threat. It released a final report in 1985 estimating that selected air toxics cause 1300-1700 fatal cancers per year in this country. EPA, *The Magnitude and Nature of the Air Toxics Problem in the United States: Final Report 71* (1985). The draft analysis is discussed in Thompson, *The Air Toxic Problem in the United States: An Analysis of Cancer Risks Posed by Selected Air Toxics*, 35 J. Air Pollution Control Ass'n 535 (1985). EPA also issued a final work practice for radionuclide emissions from underground uranium mines in early 1985. 50 Fed. Reg. 15386 (1985).

¹⁶See Brief for Respondent at 10-14, *Natural Res. Def. Council, Inc. v. Thomas*, Nos. 84-1387, 84-1391, 85-1567 (D.C. Cir. brief filed 12-23-85). For a general discussion of the role of risk assessment in EPA decisionmaking, see Ruckelshaus, *Risk in a Free Society*, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 10190 (1984); Doniger, *The Gospel of Risk Management: Should We Be Converted?*, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 10222 (1984).

acknowledged to be potentially hazardous. The Agency applied this analysis to the proposed benzene¹⁷ and radionuclide standards and the long-dormant vinyl chloride revisions and decided to cut them back dramatically.¹⁸ It also completed a preliminary review of over a dozen other chemicals and announced its intention to list six additional substances.¹⁹ By starting with a notice of its intention to list, rather than listing, EPA presumably expected to avoid the post-listing deadlines, buying extra time to study the sources, receptors, and impacts of the pollution.²⁰ EPA also ruled out regulating a number of substances, some of which may be carcinogenic, because the risk was not “significant” or the cost of control was disproportionately high.²¹ While satisfying EPA’s desire for greater flexibility, the new approach rather brazenly ignored aspects of the statutory mandate, and triggered new litigation.²²

§ 12:72 Hazardous air pollutant regulation under the 1990 amendments

The new section 112 completely revamps its predecessor based in significant part on EPA’s 1984 compromise program.¹ The handful of hazardous air pollutant regulations promulgated under the old provision remain in effect, until modified under the

¹⁷49 Fed. Reg. 23492 (1984) (benzene).

¹⁸49 Fed. Reg. 43909 (1984) (radionuclides); 50 Fed. Reg. 1182 (1985) (vinyl chloride).

¹⁹The intention to list included either chromium or hexavalent chromium, 50 Fed. Reg. 24317 (1985), carbon tetrachloride, 50 Fed. Reg. 32621 (1985), chloroform, 50 Fed. Reg. 39626 (1985), ethylene oxide, 50 Fed. Reg. 40286 (1985), 1,3 butadiene, 50 Fed. Reg. 41466 (1985), ethylene dichloride, 50 Fed. Reg. 41994 (1985), and cadmium, 50 Fed. Reg. 42000 (1985). EPA apparently has not added to its prelisting list since 1985, although it has stated that it is considering development of NESHAPs for organic solvent cleaners. 52 Fed. Reg. 29549 (1987). In addition, in 1984 EPA listed coke oven emissions. 49 Fed. Reg. 35560 (1984). Coke oven standards were proposed on April 23, 1987. 52 Fed. Reg. 13586 (1987).

²⁰*See*, *Natural Res. Def. Council, Inc. v. Thomas*, 855 F.2d 1067, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20174 (2d Cir. 1989) (notice of intent to list is not final agency action subject to judicial review and did not trigger non-discretionary duty to list).

²¹It decided not to regulate chlorofluorocarbon-113, 50 Fed. Reg. 24313 (1985), methyl chloroform, 50 Fed. Reg. 24314 (1985), epichlorohydrin, 50 Fed. Reg. 24575 (1985), manganese, 50 Fed. Reg. 32627 (1985), chlorinated benzenes, 50 Fed. Reg. 32628 (1985), and vinylidene chloride, 50 Fed. Reg. 32632 (1985), and has announced its intent not to regulate chloroprene, 50 Fed. Reg. 39632 (1985), and hexachlorocyclopentadiene, 50 Fed. Reg. 40154 (1985). In 1984 the Agency also ruled out regulation of polycyclic organic matter, 49 Fed. Reg. 31680 (1984), and toluene, 49 Fed. Reg. 22195 (1984). *See also* 51 Fed. Reg. 34135 (1986) (nickel subsulfide and carbonyl are known or probable carcinogens, but are not emitted in sufficient quantities to create a significant risk). EPA also began to announce its intent not to regulate specified substances under the Clean Air Act due to insufficient evidence. In such cases, EPA stated that it might change its mind if presented with further evidence of harmful effects. *See, e.g.*, 52 Fed. Reg. 32597 (1987) (zinc and zinc oxides); 52 Fed. Reg. 5496 (1987) (copper); 51 Fed. Reg. 22854 (1986) (phenol).

²²EPA as much as admitted that it was not following the statutory guidance. EPA Administrator William Ruckelshaus reportedly observed that one must “torture th[e] language” of section 112 to find support for his NESHAPs program. Brief for Petitioner at 3, *Env’tl. Def. Fund, Inc. v. Thomas*, No. 84-1524 (D.C. Cir. brief filed 10-8-85). *See also* *Natural Resources Defense Council, Inc. v. EPA*, 824 F.2d 1146, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 21032 (D.C. Cir. 1987) (vinyl chloride standards may not consider costs).

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¹In its decision vacating EPA’s proposed withdrawal of its standard for vinyl chloride, the Court of Appeals for the District of Columbia set out criteria for interpreting the mandate of § 112 which have been adopted in the residual risk section of the new amendments. *See* *Natural Res. Def. Council v. EPA*, 824 F.2d 1146, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 21032 (D.C. Cir. 1987). As required by the Court, EPA must take a two-step approach to setting standards under § 112. First, it must determine a “safe” or “acceptable” risk considering only health factors; then it must choose a standard that provides an “ample margin of safety,” considering costs, feasibility, and other relevant factors. *See* 54 Fed. Reg. 3044, 3045 (1989) (preamble to final NESHAP for certain sources of benzene).

new approach.² In addition, certain of the most stringent provisions of the old section have been given the unequivocal approval of Congress. The intense scientific and policy debate generated by the original § 112 will continue, supplemented by feverish regulatory activity.³

**§ 12:73 Hazardous air pollutant regulation under the 1990 amendments—
The regulated universe—Listed hazardous air pollutants**

The Amendments redefine the term “hazardous air pollutant” to mean any pollutant listed under new § 112. Congress started EPA off with a list of 189 hazardous air pollutants.¹ Included on the list are all thirteen substances that EPA had listed or announced its intent to list under the old provision, as well as most of the substances EPA had specifically decided not to regulate under § 112 or not to regulate at present due to lack of information.²

The Act requires EPA to review the list periodically and to add substances (other than criteria pollutants) “which present or may present, through inhalation or other routes of exposure, a threat of adverse human health effects . . . or adverse environmental effects, whether through ambient concentrations, bioaccumulation, deposition, or otherwise.”³ As a practical matter, EPA will be so busy regulating the 189 listed substances, that it will be some time before it is likely to add significantly to the list based on the new criteria.

This definition of “hazardous air pollutant” greatly expands the scope of regulation in two directions. First, EPA must address pollutants that are harmful to the environment, but not to health. Second, EPA must address pollutants that cause harm when not airborne, that is, after being deposited onto the ground or a body of water.⁴

The Act authorizes EPA to remove substances from the list, but this authority will not be easy to use. Removal must be based on an affirmative finding that there is adequate data available to demonstrate that the substance “may not reasonably be anticipated to cause *any adverse* effects to the human health or adverse

²Clean Air Act § 112(q)(1), as added by § 301 of the 1990 Clean Air Act Amendments.

³General provisions regulations for the administration of the hazardous air pollutant program were promulgated at 59 Fed. Reg. 12408 (Mar. 16, 1994) (to be codified at 40 C.F.R. pt. 61). NESHAP general provisions were first promulgated at 59 Fed. Reg. 12408 (Mar. 16, 1994). A variety of amendments to the initial rule were published based in part on settlement negotiations with parties, which had sought judicial review of the rule, and in part on EPA’s practical experience in developing and implementing NESHAP, also known as MACT standards under the general provisions. 66 Fed. Reg. 16318 (Mar. 23, 2001). Final amendments to the general provisions were published at 67 Fed. Reg. 16582 (Apr. 5, 2002). They were challenged by the Sierra Club, *Sierra Club v. EPA*, No. 02-1135 (D.C. Cir. Apr. 25, 2002), and a settlement was entered in which EPA agreed to propose a rule to make specified amendments to the general provisions. 67 Fed. Reg. 72875 (Dec. 9, 2002). Final amendments were issued at 68 Fed. Reg. 32586 (May 30, 2003). Partial reconsideration was pending due to the NRDC’s petition for reconsideration on June 29, 2003. 70 Fed. Reg. 43992 (July 29, 2005).

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¹Clean Air Act § 112(b)(1), as added by § 301 of the 1990 Clean Air Act Amendments.

²*See* § 12:70. Methyl chloroform, epichlorohydrin, manganese, vinylidene chloride, chloroprene, and hexachlorocyclopentadiene, polycyclic organic matter and toluene, all of which EPA had decided not to regulate under section 112, are on the new list, as is phenol, concerning which EPA had decided to defer a decision.

³Clean Air Act § 112(b)(2), as added by § 301 of the 1990 Clean Air Act Amendments. “Adverse environmental effect” is limited to “significant and widespread” effects which “may reasonably be anticipated.” Clean Air Act § 112(a)(7), as added by § 301 of the 1990 Clean Air Act Amendments.

⁴Clean Air Act § 112(b)(3)(B), as added by § 301 of the 1990 Clean Air Act Amendments.

environmental effects”⁵ (emphasis added). Judicial review of EPA decisions concerning listing may not be had until EPA promulgates emission standards for the listed substances.⁶

**§ 12:74 Hazardous air pollutant regulation under the 1990 amendments—
The regulated universe—Categories of major and area sources**

As required by the 1990 Amendments, for the hazardous air pollutant listed in § 112(b), EPA has published a list of all categories and subcategories of major sources (including a number of significant area source categories).¹ A major source is “any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants.”² In its proposed standards for the synthetic organic chemical manufacturing industry and seven other processes, EPA has defined “source” to include all “emission points in the organic HAP-emitting processes used to produce synthetic organic chemicals that are in a contiguous area under common control.”³ This broad definition of “source” would appear to be consistent with § 502(c), which allows a single permit to be issued for a facility with multiple sources.⁴ An area source is any other source, except for motor vehicles and nonroad vehicles that are subject to regulation under the Act’s mobile source provisions.⁵

The Act requires EPA to list all categories and subcategories of area sources that EPA determines constitute health or environmental threats “warranting action” under § 112.⁶ While EPA thus has some discretion in listing area source categories, the Amendments also require the Agency to list within five years categories of area sources accounting for 90 percent of the urban area emissions of the thirty listed substances that create the greatest risk to health in the largest number of such urban areas.⁷ In addition, EPA must list enough major and area source categories of alkylated lead compounds, polycyclic organic matter, hexachlorobenzene, mercury,

⁵Clean Air Act § 112(b)(3)(C), as added by § 301 of the 1990 Clean Air Act Amendments.

⁶Clean Air Act § 112(e)(4), as added by § 301 of the 1990 Clean Air Act Amendments.

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¹Clean Air Act § 112(c)(1), as added by § 301 of the 1990 Clean Air Act Amendments. On June 21, 1991, EPA issued and requested comment on a “preliminary draft list” of such major categories covering hundreds of industrial activities, most in the organic chemicals industry. 56 Fed. Reg. 28548 (1991). The “initial list” required by § 112(c)(1), containing 174 categories, was subsequently published on July 16, 1992. 57 Fed. Reg. 31576 (1992). EPA has indicated that it considers the listing of categories to be an ongoing process. EPA proposed revisions to the list in 1995. 60 Fed. Reg. 4624 (Jan. 24, 1995).

²Clean Air Act § 112(a)(1), as added by § 301 of the 1990 Clean Air Act Amendments. In its General Provisions rule for the hazardous air pollutant program, 59 Fed. Reg. 12408 (Mar. 16, 1994), EPA requires the aggregation of all plant site emissions of hazardous air pollutants to compare against source emission thresholds. It also includes fugitive emissions of hazardous air pollutants in the calculation. Both positions were upheld in *National Mining Ass’n v. EPA*, 59 F.3d 1351, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 21390 (D.C. Cir. 1995). The Agency’s definition of “potential to emit” did not fare as well; the court overturned that portion of EPA’s rule requiring source limitations to be “federally enforceable” in order to be recognized under the hazardous air pollutant program. EPA was hoping to finalize rule amendments to address this decision by mid-1998, but has not yet done so. *See* 61 Fed. Reg. 68384, and 68388 n.1 (Dec. 27, 1996).

³57 Fed. Reg. 62607, 62613 (1992).

⁴Clean Air Act § 502(c), as added by § 501 of the 1990 Clean Air Act Amendments.

⁵Clean Air Act § 112(a)(2), as added by § 301 of the 1990 Clean Air Act Amendments.

⁶Clean Air Act § 112(c)(3), as added by § 301 of the 1990 Clean Air Act Amendments.

⁷Clean Air Act § 112(c)(3), as added by § 301 of the 1990 Clean Air Act Amendments.

polychlorinated biphenyls, furans and dioxins within five years of enactment to account for 90 percent of emissions of those substances.⁸

In listing area sources, EPA addressed the procedural unwieldiness of certain parts of the Amendments. Section 112(c)(2) requires EPA to set emission standards for every category of sources listed under § 112(c)(1). Categories emitting carcinogenic hazardous air pollutants can be deleted from the list only on a showing that no major source or group of area sources emits such pollutants in amounts that cause an increased lifetime cancer risk of greater than one in one million to the individual most exposed.⁹ Consequently, EPA had to decide whether to list area sources for which information gaps existed, and then use the deletion criteria of § 112(c) if the listing proved incorrect.¹⁰ Choosing the better part of valor, EPA concluded that an area source category can be listed only after the Agency makes a specific finding that the category presents a threat of adverse health or environmental effects.¹¹ Accordingly, the initial list contains only eight area source categories.¹²

§ 12:75 Hazardous air pollutant regulation under the 1990 amendments—Technology-based emission limitations

In developing emission limitations for categories of major sources, EPA is to refer to a new, variable formulation for technology-based standards: “maximum achievable control technology” (MACT). The definition of MACT is the “maximum degree of reduction in emissions of the hazardous air pollutants subject to this section (including a prohibition on such emissions, where achievable) that the Administrator, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable for new and existing sources in the category or subcategory to which such emission standard applies”¹ The standards give EPA remarkably broad power over American industry, since they may be based on process changes, materials substitutions, enclosure of processes, collection, capture and treatment of stack or fugitive emissions or design, equipment, work practice or operational standards or a combination of measures.² In setting standards for publicly owned treatment works (POTWs), EPA may require “process or product substitutions or limitations.”³ For area sources, EPA may choose to base standards on “generally available control technology” instead of MACT.⁴

The core of the MACT analysis (as with other technology-based standards under the Act) is a review of the emission control achievements of other sources. For new sources, the reference point is the best-controlled source that EPA determines is

⁸Clean Air Act § 112(c)(6), as added by § 301 of the Clean Air Act Amendments.

⁹Clean Air Act § 112(c)(9), as added by § 301 of the 1990 Clean Air Act Amendments.

¹⁰56 Fed. Reg. 28548, 28550 (1991) (soliciting public comment on this question).

¹¹57 Fed. Reg. 31576, 31583 (1992).

¹²57 Fed. Reg. 31576, 31592 (1992).

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¹Clean Air Act § 112(d)(2), as added by § 301 of the 1990 Clean Air Act Amendments.

²Clean Air Act § 112(d)(2), as added by § 301 of the 1990 Clean Air Act Amendments.

³Clean Air Act § 112(n)(3), as added by § 301 of the 1990 Clean Air Act Amendments; 57 Fed. Reg. 31576, 31585 (July 16, 1992). EPA has similar authority to regulate consumer products under the ozone nonattainment provisions of Title I. *See* Clean Air Act § 183(e), as added by § 103 of the 1990 Clean Air Act Amendments. The same is true under the stratospheric ozone protection provisions of Title VI.

⁴Clean Air Act § 112(d)(5), as added by § 301 of the 1990 Clean Air Act Amendments. The Amendments further provide that hazardous air pollutant standards applicable to a source shall be superseded by more stringent applicable NSPS, LAER, or BACT standards. Clean Air Act § 112(d)(7).

similar.⁵ For existing sources in categories with more than thirty sources, the reference point is the average emission reduction achieved by the best 12 percent of the sources, excluding those that first came into compliance with LAER standards less than eighteen months before proposal or thirty months before promulgation of the MACT standard.⁶ For sources in categories with less than thirty sources, EPA is to base the standard on the average emission reduction achieved by the five best-performing sources in the category.

Although the standard is technology-based, EPA may consider one health-related issue. The Agency may take account of the air quality thresholds for non-carcinogenic pollutants below which there are believed to be no adverse effects.⁷ The Act does not explain how this factor is to be weighed and the answer is not obvious. The provision might be interpreted to allow EPA to set standards more stringent than the technology analysis would support if necessary to bring air quality below the threshold levels, but that would not be consistent with the requirement elsewhere in the Amendments that EPA conduct extensive studies before regulating the residual risk remaining after implementation of MACT standards. It would be more consistent with the rest of new § 112 if this provision were read to allow EPA to set standards less stringent than the technological reference points would suggest, if the resulting air quality would be below the adverse effects thresholds for the pollutants involved. Whether close reading of the entire legislative history or EPA's analysis of the Act supports this reading remains to be seen.

The Amendments set a schedule for promulgating hazardous air pollutant standards that is leisurely compared to the superseded requirements. Before the Amendments, § 112 standards had to be in effect within twelve months of listing. The new deadlines for promulgation, at which time the standards were to take effect,⁸ are:

- (i) November 15, 1992—forty source categories and subcategories that EPA determines have the highest priority;⁹
- (ii) December 31, 1992—coke oven batteries;¹⁰
- (iii) November 15, 1994—25 percent of listed categories and subcategories;
- (iv) November 15, 1995—POTWs;¹¹
- (v) November 15, 1997—50 percent of listed categories and subcategories;
- (vi) November 15, 2000—all listed categories and subcategories (except that for categories listed after November 15, 1998, for which standards shall be promulgated within two years after listing).¹²

The details of the schedule for promulgating hazardous air pollutant standards that Congress outlined were to be published by EPA by November 15, 1992.¹³ The order in which EPA is to address various listed categories is to be determined on the

⁵Clean Air Act § 112(d)(3), as added by § 301 of the 1990 Clean Air Act Amendments.

⁶EPA has delineated a controversial modeling method to define the average emission reductions by the best 12 percent of existing sources. It is explained in the hazardous organics NESHAPS (HON) rulemaking. 59 Fed. Reg. 19401, 19414 to 17 (Apr. 22, 1994).

⁷Clean Air Act § 112(d)(4), as added by § 301 of the 1990 Clean Air Act Amendments.

⁸Clean Air Act § 112(d)(10), as added by § 301 of the 1990 Clean Air Act Amendments. Existing sources have ninety days to comply and EPA may grant waivers extending the compliance deadline for up to two additional years. Clean Air Act § 112(f)(4).

⁹Clean Air Act § 112(e)(1), as added by § 301 of the 1990 Clean Air Act Amendments.

¹⁰Clean Air Act § 112(d)(8), as added by § 301 of the 1990 Clean Air Act Amendments.

¹¹Clean Air Act § 112(e)(5), as added by § 301 of the 1990 Clean Air Act Amendments.

¹²Clean Air Act § 112(c)(5), as added by § 301 of the 1990 Clean Air Act Amendments.

¹³Clean Air Act § 112(e)(3), as added by § 301 of the 1990 Clean Air Act Amendments. EPA announced its schedule for the promulgation of MACT rules on November 15, 1993. 58 Fed. Reg. 63941 (Dec. 3, 1993) (covering 166 major sources and eight area sources). On October 14, 1998, EPA published

basis of the potential harmfulness of the pollutants involved, the volume of emissions and proximity to vulnerable human or environmental receptors characteristic of each category, and regulatory efficiency.¹⁴ The schedule itself is not subject to judicial review, but the deadlines EPA sets for itself, and the congressional deadlines, may be enforced in citizen suits.¹⁵

§ 12:76 Hazardous air pollutant regulation under the 1990 amendments— Residual risk regulation

Congress did not require any consideration of health effects in setting MACT standards, but made it likely that a second tier of risk-based regulation will be added for major sources.¹ Unless EPA can persuade Congress that residual risk regulation is not warranted, EPA will have to develop standards to provide an ample margin of safety to protect public health, as required by § 112 prior to the 1990 Amendments, or to prevent an adverse environmental effect, taking into account costs, energy, safety, and other relevant factors.² In order to avoid any confusion about the interpretation of § 112 prior to the Amendments, Congress expressly let stand EPA's interpretation of the two-step approach mandated by the vinyl chloride decision.³

The question will be decided on the basis of four studies. By May 15, 1993, the National Academy of Sciences was required to submit a report to Congress and EPA evaluating EPA's risk assessment methodology and recommending changes, if warranted.⁴ By November 15, 1993, EPA was required to report to Congress on the results of studies of the health and environmental effects of deposition of hazardous air pollutants into the Great Lakes, Chesapeake Bay and coastal waters and the adequacy of existing legal authority to address such effects.⁵ By November 15, 1994, a newly created Risk Assessment and Management Commission was required to report to Congress on the appropriate uses of risk assessment and management under the Act.⁶ By November 15, 1996, EPA was required to provide a comprehensive report to Congress on the residual risk to health caused by emissions from sources in compliance with MACT standards and recommend amendments to address such risk as EPA believes exists.⁷ If Congress does not act, EPA must promulgate residual risk standards to protect public health with an ample margin of safety and prevent adverse environmental effects.⁸

a proposed rule establishing a "Generic MACT Standards" program for EPA to use to establish NESHAPs under § 112. As part of the program, EPA would make MACT determinations for certain small categories by reference to previously established MACTs. 63 Fed. Reg. 55178 (Oct. 14, 1998), finalized at 64 Fed. Reg. 34854 (June 29, 1999).

¹⁴Clean Air Act § 112(e)(3), as added by § 301 of the 1990 Clean Air Act Amendments.

¹⁵Clean Air Act § 112(e)(3), (4), as added by § 301 of the 1990 Clean Air Act Amendments.

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¹Area sources are not covered. Clean Air Act § 112(f)(5), as added by § 301 of the 1990 Clean Air Act Amendments.

²Clean Air Act § 112(f)(2)(A), as added by § 301 of the 1990 Clean Air Act Amendments.

³Clean Air Act § 112(f)(2)(B), as added by § 301 of the 1990 Clean Air Act Amendments. The Conference Committee Managers Report indicates that the "two-step" approach is required.

⁴Clean Air Act § 112(o), as added by § 301 of the 1990 Clean Air Act Amendments.

⁵Clean Air Act § 112(m), as added by § 301 of the 1990 Clean Air Act Amendments. This study is not linked directly to the residual risk decision, but deposition effects will have to be addressed in residual risk decisions.

⁶§ 303 of the 1990 Clean Air Act Amendments.

⁷Clean Air Act § 112(f)(1), as added by § 301 of the 1990 Clean Air Act Amendments.

⁸Clean Air Act § 112(f)(2), as added by § 301 of the 1990 Clean Air Act Amendments. The stan-

The methodology for setting residual risk standards is to be based in whole or part on the results of the studies prescribed by the Amendments. Unless Congress determines otherwise, the Amendments require that residual risk standards for carcinogens be promulgated if risk assessment shows that the residual cancer risk to the hypothetical “maximum exposed individual” is greater than one in a million, with the standards set at levels that would bring the risk below that threshold.⁹ Congress adopted this standard despite evidence provided by EPA in the benzene rulemaking that the reduction in residual cancer risks to no greater than one in one million would be disproportionately costly.¹⁰

The Amendments also direct EPA to set the residual risk standards below the health-based level, if necessary to prevent adverse environmental effects.¹¹ In assessing the need for environmental standards, EPA is to consider cost, energy, safety and other relevant factors, but the Amendments do not specify how EPA is to weigh these factors.¹²

§ 12:77 Hazardous air pollutant regulation under the 1990 amendments— Implementation of hazardous air pollutant standards

In addition to existing and new sources in the covered major and area source categories, the new hazardous air pollutant standards will be applicable to most modified and all reconstructed sources. A modification is any change in a major source that results in an increase in hazardous air pollutant emissions in greater than a de minimis amount, unless the increase in emissions is offset by equal or greater decreases in emissions of the same or a more hazardous pollutant.¹ Modifications are subject to the standards for existing sources, while reconstructions must satisfy the new source standards.²

The 1990 Amendments set two independent triggers for the obligation to comply with the new hazardous air pollutant standards. One trigger is the effective date of the standards themselves. The standards apply to new major sources and reconstructions of major sources on which construction is begun after that date. Existing major sources must comply by a deadline specified by EPA in the standards, which cannot be later than three years after the effective date.³ The second trigger date is the effective date of the state permit program under Title V (which for these

dards must be promulgated within eight years of promulgation of MACT standards, except that the Amendments allow nine years for categories for which MACT standards were promulgated within two years of enactment.

⁹Clean Air Act § 112(f)(2)(A), as added by § 301 of the 1990 Clean Air Act Amendments.

¹⁰See 54 Fed. Reg. 38044 (1989).

¹¹Clean Air Act § 112(f)(2)(A), as amended by § 301 of the 1990 Clean Air Act Amendments.

¹²Clean Air Act § 112(f)(2)(A), as amended by § 301 of the 1990 Clean Air Act Amendments.

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¹Clean Air Act § 112(g)(1), as added by § 301 of the 1990 Clean Air Act Amendments. Though guidance was required by statute to have been released by May 15, 1992, EPA deferred promulgation of guidance on this offset provision. 58 Fed. Reg. 42760, 42762 (1993). This guidance was proposed by EPA in its § 112(g) rulemaking. 59 Fed. Reg. 15503, 15549 to 15563 (Apr. 1, 1994).

²Clean Air Act § 112(g)(2)(A), as added by § 301 of the 1990 Clean Air Act Amendments. The Amendments specify that after the effective date for a permit program under new Title V, such modifications must meet the MACT standards for existing sources, while new and reconstructed sources must meet the standards for new sources. Presumably the same distinction between standards for modified and reconstructed sources applies before the permit programs take effect. The deadline for Title V permit programs to take effect was November 15, 1995, but hazardous air-pollutant standards were in effect for some industries before that date and will apply to new sources, unless they qualify for an exemption.

³Major new sources and reconstructions commenced after proposal of standards must comply with the standards, except that, if the final standards are more stringent than the proposal, they may

purposes may be no earlier than May 15, 1994 and must be no later than November 15, 1995).⁴ If EPA has not promulgated standards for a listed category by that date, permit writers must write source-specific hazardous air pollutant limitations into individual permits, effective immediately for new sources, reconstructions and modifications, and with a compliance schedule of up to three years for existing sources.⁵ The permit writer must apply the statutory MACT standards to the specific source in deriving the emission limits.⁶ If EPA later promulgates categorical standards applicable to the facility, the new limits will be written into the permit at the next renewal date.⁷

The Amendments prescribe for exceptions and extensions to the compliance schedules outlined above. Existing sources may be granted one-year extensions from the MACT standards or two-year extensions from residual risk standards if necessary in order to install controls.⁸ Existing sources that reduce emissions of hazardous air pollutants by 90 percent (95 percent for particulates) from a baseline level (generally emission levels for 1987 or later) before proposal of MACT standards under § 112 may obtain a six-year extension of the MACT compliance date.⁹ The President may grant national security exemptions of up to six years total, apparently from either the MACT or residual risk standards.¹⁰ In addition, sources that comply with BACT or LAER limits for the same pollutant or pollutant stream regulated by new hazardous air pollutant standards have five years from compliance with the BACT or LAER standards before they must comply with the new § 112 standards.¹¹ Finally, new sources on which construction commenced between proposal of MACT standards and proposal of residual risk standards have ten years from the date construction commenced to comply with the residual risk standards.¹²

§ 12:78 Hazardous air pollutant regulation under the 1990 amendments— Regulation of special source categories

The Amendments to § 112 require EPA to give special attention to several categories of sources. Coke oven batteries that comply with EPA emission limits and work

defer compliance with the final standards for up to three years, provided that they comply with the proposed standards in the interim. § 112(i)(2), as added by § 301 of the 1990 Clean Air Act Amendments.

⁴Clean Air Act §§ 112(j)(1), 501(d), as added by §§ 301, 501 of the 1990 Clean Air Act Amendments.

⁵Clean Air Act § 112(j)(5), as added by § 301 of the 1990 Clean Air Act Amendments.

⁶Clean Air Act § 112(j)(5), as added by § 301 of the 1990 Clean Air Act Amendments. Guidance for the promulgation of permit emission limitations that are equivalent to MACT standards is codified at 40 C.F.R. pt. 63, subpt. B (59 Fed. Reg. 26429 (May 20, 1994)).

⁷Clean Air Act § 112(j)(6), as added by § 301 of the 1990 Clean Air Act Amendments. Unlike the Clean Water Act, the Amendments do not include an “anti-backsliding” provision limiting substitution of categorical limits for more stringent source-specific limits.

⁸Clean Air Act § 112(f)(4)(B), (i)(3)(B), as added by § 301 of the 1990 Clean Air Act Amendments. An extension of the residual risk standard also requires a showing that no imminent endangerment will result. Clean Air Act § 112(f)(4)(B). An additional three-year extension may be granted to mining waste operations upon a showing of need for extra time to dry and cover the waste. Clean Air Act § 112(i)(3)(B).

⁹Clean Air Act § 112(i)(5), as added by § 301 of the 1990 Clean Air Act Amendments. If the standards were proposed before January 1, 1994, a source that achieves the early reductions before promulgation also may obtain the six-year extension if it satisfies additional conditions. On June 13, 1991, EPA proposed a rule governing the early reduction program, 56 Fed. Reg. 27338 (1991), finalized at 57 Fed. Reg. 61970 (Dec. 29, 1992), and on August 27, 1991, noticed the availability of a draft “Procedures for Establishing Emissions for Early Reduction Compliance Extensions.” 56 Fed. Reg. 42305 (1991).

¹⁰Clean Air Act § 112(i)(4), as added by § 301 of the 1990 Clean Air Act Amendments.

¹¹Clean Air Act § 112(i)(6), as added by § 301 of the 1990 Clean Air Act Amendments.

¹²Clean Air Act § 112(i)(7), as added by § 301 of the 1990 Clean Air Act Amendments.

practice standards (or default standards specified in the statute) may be exempted from compliance with residual risk standards until January 1, 2020.¹ For electric utility steam generating units, EPA was required to study whether there will be a need for § 112 standards after the industry has complied with acid rain controls and report to Congress by November 15, 1993. If it finds that such controls are “appropriate and necessary,” EPA must promulgate § 112 standards.² In addition, the Amendments contain special provisions for oil and gas wells and pipeline facilities and for solid waste incinerators. Sources of the first type may not be aggregated to form a major source, and, with one narrow exception,³ may not be regulated as area sources under § 112. However, EPA must assess the hazards to public health and the environment from hydrogen sulfide emissions associated with oil and gas extraction, and transmit to Congress any recommendation for a control strategy based on § 111.⁴ Section 112(n) also requires EPA to promulgate standards for solid waste incinerators under § 111 that contain certain elements of the new § 112 program.⁵

§ 12:79 Hazardous air pollutant regulation under the 1990 amendments—Solid waste incinerator standards

Section 129 of the 1990 Amendments requires EPA to establish a hybrid regulatory program for solid waste incinerators that is to include most of the elements of the new hazardous air pollutant program, but is to be implemented under the NSPS program. Emission standards and guidelines are to be promulgated for total and fine particulate matter, opacity, sulfur dioxide, hydrogen chloride, oxides of nitrogen, carbon monoxide, lead, cadmium, mercury, dioxins and dibenzofurans under §§ 111(a) and 111(d), but are to be based on a variant of the MACT criteria (tailored to incinerators), not the traditional NSPS criteria.¹ The incinerator criteria may authorize EPA to base emission standards on, among other measures, removal of certain materials from the incinerators’ waste feeds.² In addition, the incinerator

[Section 12:78]

¹Clean Air Act § 112(d)(8), (i)(8), as added by § 301 of the 1990 Clean Air Act Amendments.

²Clean Air Act § 112(n)(1), as added by § 301 of the 1990 Clean Air Act Amendments. EPA also may conduct studies and promulgate special requirements for publicly owned treatment works, oil and gas extraction wells (to control hydrogen sulfide), and facilities using hydrofluoric acid. Clean Air Act § 112(n)(3), (5), (6).

³Clean Air Act § 112(n)(4), as added by § 301 of the 1990 Clean Air Act Amendments. EPA may regulate oil and gas wells located in certain urban areas where the agency determines that emissions of hazardous pollutants from these sources pose “more than a negligible risk of adverse effects to public health.” “Negligible risk” is not defined.

⁴Clean Air Act § 112(n)(5), as added by § 301 of the 1990 Clean Air Act Amendments.

⁵Clean Air Act § 129, as added by § 305 of the 1990 Clean Air Act Amendments. *See* § 12:78.

[Section 12:79]

¹Clean Air Act § 129(a)(2), as added by § 305(a) of the 1990 Clean Air Act Amendments. The criteria for incinerator standards vary from the hazardous air pollution MACT criteria in that they make no reference to prohibitions on emissions. The incinerator standards, like the MACT standards, however, are to be set for new sources with reference to the best performing similar source and, for existing sources, at a level no worse than that achieved by the top 12 percent of similar sources that have not recently installed LAER controls. The incinerator rule provides for standards based on removal or destruction of pollutants before, during, or after combustion, while the MACT criteria include other kinds of waste reduction measures such as substitution of materials.

²*See* Clean Air Act § 129(a)(2), as added by § 305(a) of the 1990 Clean Air Act Amendments. The reference in the incinerator criteria to “removal of pollutants before combustion” seems broad enough to include source separation. *See also* *Citizens for Clean Air v. EPA*, 959 F.2d 839, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 20669 (9th Cir. 1992) (Agency not required to examine source separation as BACT during permit review of municipal incinerator because issue not raised in sufficient detail by plaintiffs.).

NSPS must include siting requirements.³ Like the hazardous air pollutant program, however, EPA is required to analyze the need for residual risk standards for incinerators under § 112(f) and establish such standards if warranted.⁴ The residual risk analysis may address only those pollutants specified in § 129(a)(4), however.⁵

The new § 129 program is applicable to several categories of solid waste incinerators. The Amendments specifically refer to incinerators burning municipal waste; hospital, medical or infectious waste; commercial or industrial waste, and “other” solid waste.⁶ The “other” category is not defined, but § 129 does exclude from its coverage hazardous waste incinerators permitted under the Resource Conservation and Recovery Act, certain metals-recovery facilities, small power production and cogeneration plants that are qualifying facilities under the Federal Power Act (if they burn a homogenous waste fuel such as tires or waste oil, but not refuse-derived fuel), and air curtain incinerators that burn yard waste, wood wastes, or clean lumber.⁷

Section 129 establishes separate implementation requirements for the incinerator NSPS. The Act sets a schedule for promulgating § 111 standards and § 111(d) guidelines for each category of regulated incinerators.⁸ For new sources and modifications (defined to include NSPS modifications and reconstructions), the standards take effect six months after promulgation.⁹ Existing sources generally will not have to comply with standards set out in the § 111(d) guidelines until the deadline specified in the approved state plan for implementing guidelines, but they must comply within five years after the standards are promulgated.¹⁰ Although the incinerator NSPS will be quite stringent, they do not preempt more stringent state

EPA’s ultimate decision to remove materials separation as a requirement in new source performance standards for municipal incinerators was upheld in *New York v. Reilly*, 969 F.2d 1147, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 21306 (D.C. Cir. 1992). The court was satisfied with EPA’s conclusions that both air and non-air benefits of materials separation were not sufficiently quantifiable.

³Clean Air Act § 129(a)(3), as added by § 305(a) of the 1990 Clean Air Act Amendments. In addition, the NSPS must require use of certified operators who have satisfied training requirements to be specified by EPA. Clean Air Act § 129(d).

⁴Clean Air Act § 129(h)(3), as added by § 305(a) of the 1990 Clean Air Act Amendments.

⁵Clean Air Act § 129(h)(3)(B), as added by § 305(a) of the 1990 Clean Air Act Amendments.

⁶Clean Air Act § 129(a)(1)(B), (C), (D), and (E), as added by § 305(a) of the 1990 Clean Air Act Amendments.

⁷Clean Air Act § 129(g)(1), as added by § 305(a) of the 1990 Clean Air Act Amendments.

⁸Clean Air Act § 129(a)(1), as added by § 305(a) of the 1990 Clean Air Act Amendments. Standards for large (more than 250 tons per year) municipal waste units were due by November 15, 1991 and for small municipal units by November 15, 1992. EPA promulgated NSPS for large municipal waste incinerators on February 11, 1991, 56 Fed. Reg. 5488 (1991), and published § 111(d) guidelines the same day, 56 Fed. Reg. 5514 (1991). The NSPS apply to units for which construction or modification commenced after December 20, 1989, the date the standards were proposed. *See* 54 Fed. Reg. 52209 (1989). The schedule for other categories is: hospital, medical, and infectious waste, by November 15, 1992; commercial or industrial waste, by November 15, 1994; other waste, on a schedule to be published by EPA by May 15, 1992. EPA published the NSPS for hospital, medical, and infectious waste on September 15, 1997 (62 Fed. Reg. 48348). EPA published advance notice of proposed rulemaking for the NSPS for commercial and industrial waste on December 28, 1994 (59 Fed. Reg. 66850), and now hopes to publish the proposed rule in November 1999. 63 Fed. Reg. 22671 (Unified Agenda, Apr. 27, 1998), finalized at 65 Fed. Reg. 75338 (Dec. 1, 2000).

⁹Clean Air Act § 129(f)(1), as added by § 305(a) of the 1990 Clean Air Act Amendments. The standards take effect six months after *promulgation*, and apply to all sources on which construction is commenced after *proposal* of applicable standards. Clean Air Act § 129(g)(2). Thus, sources on which construction is completed before the rule becomes final will have time to adjust to any surprises in that rule.

¹⁰Clean Air Act § 129(f)(2), as added by 1990 Clean Air Act Amendments § 305(a). The states must submit § 111(d) plans within one year of promulgation and, if EPA is not satisfied with the plan or any revisions, it must promulgate a federal implementation plan within two years of promulgation. Clean

regulations.¹¹ Facilities subject to the incinerator NSPS¹² must obtain Title V permits, which may be issued for twelve years, but are subject to review and possible revocation at least every five years.¹³

A related provision in the Amendments gives EPA more time to resolve the question of whether ash from municipal waste incinerators should be regulated as hazardous waste. Section 306 of the Amendments states that until November 15, 1992, such ash should not be so regulated, but after that date the question again is open.

§ 12:80 Prevention of accidental releases

The new § 112 also creates a comprehensive regulatory program to prevent the accidental release of specific substances and to minimize the adverse consequences of such releases as occur.¹ The program applies to owners and operators of “stationary sources”—including, generally, all buildings and stationary activities “from which an accidental release may occur”²—which produce, process, handle, or store a regulated substance.³ Once state permit programs are in place, it appears that stationary sources regulated under § 112(r) will have to be registered,⁴ but they will not require a permit solely because of their regulation for accidental releases.⁵

Under the new program, EPA was required to produce an initial list of at least 100 substances which pose the greatest risk to human health or the environment from accidental releases.⁶ The Amendments list sixteen substances which had to be included in EPA’s list. EPA was required to establish a threshold quantity for each substance and, by November 15, 1993, promulgate regulations for the prevention and detection of, and for responding to, accidental releases.⁷ Among other things, owners and operators of regulated stationary sources are required to develop and register with EPA a risk management plan for detecting, preventing, or minimizing

Air Act § 129(b)(2), (3). Such plans must require compliance “as expeditiously as practicable” but no later than the earlier of three years after approval of the state plan or adoption of a federal plan or five years after promulgation. Clean Air Act § 129(f)(2).

¹¹Clean Air Act § 129(h), as added by § 305(a) of the 1990 Clean Air Act Amendments. On the other hand, the incinerator NSPS do take precedence over less stringent BACT or LAER requirements, should any be applicable under Parts C or D. Clean Air Act § 129(h)(5). Units covered by the incinerator NSPS are expressly exempted from the acid rain provisions of the Act, provided that less than 20 percent of their fuel is fossil fuel. Clean Air Act § 129(h)(4).

¹²The Court partially overturned EPA’s applicability criteria for its municipal waste combustor NSPS in *Davis County Solid Waste Management & Energy Recovery Special Serv. Dist. v. EPA*, 101 F.3d 1395, 27 Env’tl. L. Rep. (Env’tl. L. Inst.) 20476 (D.C. Cir. 1996), remedy modified on reh’g, 108 F.3d 1454, 27 Env’tl. L. Rep. (Env’tl. L. Inst.) 20721 (D.C. Cir. 1997). The court held that EPA improperly required aggregation of all municipal solid waste capacity at an entire facility to trigger its new source performance standards under § 129 of the 1990 Amendments; it should have focused only on the capacity of the specific municipal waste combustor unit involved.

¹³Clean Air Act § 129(e), as added by § 305(a) of the 1990 Clean Air Act Amendments.

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¹Clean Air Act § 112(r), as added by § 301 of the 1990 Clean Air Act Amendments. EPA’s comprehensive regulations implementing the Accidental Release Prevention Program were promulgated on June 20, 1996. 61 Fed. Reg. 31667 (June 20, 1996). The program is codified at 40 C.F.R. Part 68.

²Clean Air Act § 112(r)(2)(C), as added by § 301 of the 1990 Clean Air Act Amendments.

³Clean Air Act § 112(r)(1), as added by § 301 of the 1990 Clean Air Act Amendments.

⁴Clean Air Act § 112(1)(2), as added by § 301 of the 1990 Clean Air Act Amendments.

⁵Clean Air Act § 112(r)(7)(F), as added by § 301 of the 1990 Clean Air Act Amendments.

⁶Clean Air Act § 112(r)(3), as added by § 301 of 1990 Clean Air Act Amendments. EPA’s list of regulated substances under the accidental release program was promulgated on January 31, 1994. 59 Fed. Reg. 4478 (Jan. 31, 1994).

⁷Clean Air Act § 112(r)(5), (7)(A), (B), as added by § 301 of the 1990 Clean Air Act Amendments.

accidental releases.⁸

When EPA determines that an actual or threatened release of a regulated substance may cause an imminent and substantial endangerment to human health or welfare or to the environment, it has broad authority to seek an injunction or is sue an appropriate order, after giving notice to the affected state.⁹

Finally, section 304 of the 1990 Amendments required the Department of Labor, in coordination with EPA, to issue a chemical process safety standard under the Occupational Health and Safety Act to protect workers from hazards associated with accidental releases. As required by the Amendments,¹⁰ the standard includes a list of 100 highly hazardous chemicals, with threshold quantities.¹¹ Chemicals on the list are drawn from a variety of lists of hazardous chemicals used in other regulatory programs.¹² Under the OSHA standard, coverage is triggered by the presence of a threshold quantity of a substance in a single process at one point in time; quantities of substances at various locations in a plant are not aggregated.¹³

§ 12:81 Stratospheric ozone protection

The 1990 Clean Air Act Amendments established a broad new program to drastically reduce emissions of compounds believed to contribute to depletion of stratospheric ozone.¹ Congress listed harmful chemicals in two classes and set schedules for the curtailment and ultimate elimination of the production and consumption of each class. EPA must establish several new programs to ensure that this objective is met and the entire effort must be reconciled with the requirements of the Montreal Protocol on Substances that Deplete the Ozone Layer.

§ 12:82 Stratospheric ozone protection—Listing of ozone depleting substances

The new § 602 lists specific substances in two classes. Class I substances include

⁸Clean Air Act § 112(r)(7)(B)(ii), as added by § 301 of the 1990 Clean Air Act Amendments.

⁹Clean Air Act § 112(r)(9), as added by § 301 of the 1990 Clean Air Act Amendments. *See* 56 Fed. Reg. 24393 (1991) (guidance on use of EPA order authority under § 112(r)(9)).

Section 112(r) also creates the Chemical Safety and Hazard Investigation Board, which is required to investigate and report to the public in writing on any accidental release causing serious injury or property damage. Clean Air Act § 112(r)(6)(A), (C), (F), as added by § 301 of the 1990 Clean Air Act Amendments. However, no part of the conclusions, findings, or recommendations of the Board can be used as evidence in an action for damages arising out of any matter mentioned in such report. Clean Air Act § 112(r)(6)(G), as added by § 301 of the 1990 Clean Air Act Amendments. Whether the Board's reports will be admissible for other purposes, *e.g.*, to establish a course of conduct, remains to be seen. Section 112(r)(6)(L), (M), and (N) give the Board authority to obtain information to assist its investigations.

The Board must also issue periodic reports to Congress and federal and state agencies, and may include in its reports proposed rules for EPA and OSHA, which EPA and OSHA are required to *consider*. Clean Air Act § 112(r)(6)(C)(ii), (I), (J), (K), as added by § 301 of the 1990 Clean Air Act Amendments. The Board must also promulgate accidental release reporting regulations. Clean Air Act § 112(r)(C)(iii), (O), as added by § 301 of the 1990 Clean Air Act Amendments.

¹⁰Section 304 of the 1990 Clean Air Act Amendments.

¹¹57 Fed. Reg. 6304 (1991). *See* 57 Fed. Reg. 7847 (1991); 57 Fed. Reg. 23060 (1991); 57 Fed. Reg. 38600 (1991).

¹²57 Fed. Reg. 6304, 6364 (1991).

¹³57 Fed. Reg. 6304, 6403 (1991), codified at 29 C.F.R. § 1910.119(a). *See also* 57 Fed. Reg. 6364 (1991).

[Section 12:81]

¹Clean Air Act §§ 601–618, as added by § 602 of the 1990 Clean Air Act Amendments. The Amendments repealed the Act's existing provisions for stratospheric ozone protection, which were found in §§ 150–159.

widely-used substances, chlorofluorocarbons, halons, carbon tetrachloride, and methyl chloroform.¹ The Class II list includes numerous hydrochlorofluorocarbons.² Isomers of the listed substances also are included.³

The statutory lists may be expanded by administrative action, but cannot be shortened except by Congress. EPA is required to include all the congressionally listed substances in its initial regulatory list.⁴ EPA may add substances to either list at any time and at least every three years must add to the lists any substances that it has determined meet the listing criteria in the statute.⁵ The key criterion is that substances that have a potential to deplete stratospheric ozone that is at least two-tenths as strong as that of chlorofluorocarbon-11 must be included on the Class I list.⁶ Whenever EPA adds a substance to the list, it must identify its ozone depleting potential.⁷ Citizens may petition EPA to add substances to the lists and EPA must either propose to do so or publish a denial of the petition within one year of receipt of the petition.⁸

§ 12:83 Stratospheric ozone protection—Monitoring and reporting

The 1990 Amendments provide for the collection and reporting of three types of information necessary to the implementation of the ozone protection program. Those who produce, import or export listed substances must report periodically to EPA the quantity of each substance produced, imported, or exported during the preceding reporting period.¹ In addition, each producer, importer, or exporter must provide EPA with information on the quantities of listed substances handled during a baseline year, which is specified for those Class I substances listed in the statute and is to be specified by EPA for Class I substances later added to the list, as well

[Section 12:82]

¹Clean Air Act § 602(a), as added by § 602 of the 1990 Clean Air Act Amendments. The Class I list is divided into five groups.

²Clean Air Act § 602(b), as added by § 602 of the 1990 Clean Air Act Amendments.

³One isomer, 1,1,2 trichloroethane is excluded. Clean Air Act § 602(a), as added by § 602 of the 1990 Clean Air Act Amendments.

⁴Clean Air Act § 602(a), (b), as added by § 602 of the 1990 Clean Air Act Amendments. EPA published its initial list on January 22, 1991, covering only the substances listed by Congress. 56 Fed. Reg. 2420 (1991).

⁵Clean Air Act § 602(c), as added by § 602 of the 1990 Clean Air Act Amendments.

⁶Substances with weaker ozone depletion potential are to be added to the Class II list if EPA finds that they are “known or may reasonably be anticipated to cause or contribute to harmful effects on the stratospheric ozone layer.” Clean Air Act § 602(b), as added by § 602 of the 1990 Clean Air Act Amendments.

⁷Clean Air Act § 602(e), as added by § 602 of the 1990 Clean Air Act Amendments. In addition, EPA is required, within one year of listing, also to identify the global warming potential of each substance. The Amendments specifically state that this exercise is not intended to authorize EPA to launch a regulatory initiative to combat global warming.

⁸Clean Air Act § 602(c)(3), as added by § 602 of the 1990 Clean Air Act Amendments. The petition must be supported with data on the ozone depletion potential of the substances addressed therein. If EPA finds that such data are lacking, it “shall use” its information gathering powers to obtain it. It is unclear whether Congress intended this language to be read literally, thereby seemingly empowering citizens to compel EPA to study substances simply by submitting petitions with insufficient data.

[Section 12:83]

¹Clean Air Act § 603(a), as added by § 602 of the 1990 Clean Air Act Amendments. “Production” does not include the manufacture of a substance that is consumed in the manufacture of other chemicals or the reuse or recycling of a substance. Clean Air Act § 601(11), as added by § 602 of the 1990 Clean Air Act Amendments.

as all Class II substances.² The Amendments direct EPA, the National Aeronautics and Space Administration, and the National Oceanic and Atmospheric Administration to report periodically to Congress on the measured and projected effects of the new program on domestic and worldwide use of listed chemicals, concentrations of ozone depleting chemicals in the troposphere, and levels of stratospheric ozone.³

§ 12:84 Stratospheric ozone protection—Phase-out of production and consumption

The core of the new Title VI program is found in §§ 604 and 605, which set timetables for eliminating all nonessential uses of listed substances. The statutory timetables may be shortened by EPA if it finds that greater haste is: (1) needed to protect public health and the environment, (2) economically practicable, or (3) required by amendments to the Montreal Protocol.¹ Citizens may petition EPA for adoption of an accelerated schedule.² Production of Class I substances must be phased out in prescribed stages ending generally on January 1, 2000 (two years later for methyl chloroform).³ Each producer is limited to a fixed (and declining) percentage of its baseline year production in each succeeding year. Consumption of Class I substances must be phased out on the same schedule.⁴ On March 6, 1991, EPA promulgated a rule setting 1991 production and consumption limits for individual companies.⁵

For Class II substances, the Amendments prescribe a somewhat different regime. After January 1, 2015, use of Class II substances is prohibited unless they have been recycled, are completely consumed in use, or are used as refrigerants in appliances manufactured before 2020.⁶ Producers of Class II substances must limit production to their baseline year quantities after January 1, 2015, and cease production after January 1, 2030.⁷ Thus, the Act anticipates that Class II substances will be the initial substitutes for some Class I substances. It allows increases in production of Class II substances for a period after Class I substances have been banned, but requires that a second generation of substitutes be developed by 2030.

Neither Class I nor Class II substances need be completely banned under the Amendments. Several exceptions are provided for essential uses in medical devices, aviation safety systems, fire suppression equipment, and certain other applications.⁸

²Clean Air Act § 601(2), as added by § 602 of the 1990 Clean Air Act Amendments. The baseline year is 1986 for chlorofluorocarbon-11 (“CFC-11”), CFC-12, -113, -114, -115 and halon-1211, -1301 and -2402. For the rest of the Class I substances, the baseline year is 1989. For other substances, EPA is to specify a representative year.

³Clean Air Act § 603(d), as added by § 602 of the 1990 Clean Air Act Amendments. EPA also must report to Congress on the control of methane emissions from industrial and agricultural sources. 1990 Clean Air Act Amendments § 603(a).

[Section 12:84]

¹Clean Air Act § 606, as added by § 602 of the 1990 Clean Air Act Amendments.

²Clean Air Act § 606(b), as added by § 602 of the 1990 Clean Air Act Amendments.

³Clean Air Act § 604(a), (b), as added by § 602 of the 1990 Clean Air Act Amendments. EPA has amended the Clean Air Act’s ozone phase-out rule schedule. 58 Fed. Reg. 65018 (Dec. 10, 1993).

⁴Clean Air Act § 604(c), as added by § 602 of the 1990 Clean Air Act Amendments. “Consumption” is defined as production plus imports minus exports to countries that have signed the Montreal Protocol. Clean Air Act § 601(6), as added by § 602 of the 1990 Clean Air Act Amendments.

⁵56 Fed. Reg. 9518 (1991), finalized at 57 Fed. Reg. 33754 (June 30, 1992).

⁶Clean Air Act § 605(a), as added by § 602 of the 1990 Clean Air Act Amendments.

⁷Clean Air Act § 605(b), as added by § 602 of the 1990 Clean Air Act Amendments.

⁸Clean Air Act §§ 604(d), (g) and 605(d), as added by § 602 of the 1990 Clean Air Act Amendments. EPA also may allow continued production for export to developing countries that have signed the

§ 12:85 Stratospheric ozone protection—Auxiliary programs

The Amendments establish several programs intended to support the phase-out rules. Section 607 directs EPA to provide for issuance of transferable allowances for production of listed substances, envisioning the establishment of a market to moderate the inefficiency inherent in rigid quotas.¹ The Amendments also direct EPA to promulgate recycling and emission control rules governing the servicing and disposal of appliances, industrial refrigeration equipment, and motor vehicle air conditioners.² EPA must ban nonessential products containing listed substances, including, at a minimum, CFC-propelled plastic party streamers and noise horns³ and must identify and promote the use of safe alternatives to listed substances.⁴ Finally, EPA must promulgate regulations for the labeling of most consumer products and for shipping and storage containers containing CFCs that state that the product or container contains a “substance which harms the public health and environment by destroying ozone in the upper atmosphere.”⁵

IV. OPERATING PERMITS AND STATIONARY SOURCE EMISSION REGULATION*

§ 12:86 Overview

This treatise considers stationary source emission limitations the way Congress established them, in separate packages. This makes some sense, because each of the Clean Air Act's several programs for stationary source regulation has its own inherent logic. Each can produce standards somewhat different from its counterparts, even for identical sources, because the standards vary with the size of the source and when and where it was built. As a result, the regulatory program can be sensitive to both the variation in the nature of air quality problems from region to region and to differences in the levels of control attainable in new and old sources.

In the aggregate, the several stationary source programs present a bewildering array of possibilities. A single type of source, for example, a coal-fired power plant, could be subject to numerous regulatory regimes, not counting the 1990 Amendments' Acid Rain program, or the recent Clean Air Interstate Rule, the Clean Air Mercury Rule, or the Clean Air Visibility Rule. Plants built before 1970 are subject to SIP limits, but these may be very different in a given state depending on whether the facility is located in an attainment area for particulates and sulfur dioxide or a

Montreal Protocol, and the President may allow certain uses of CFC-114 and halon-1211, -1301, and -2402, if required for national security and consistent with the Montreal Protocol. Clean Air Act §§ 604(e), (f), and 605(d)(2), as added by § 602 of the 1990 Clean Air Act Amendments. It is reported that reductions in the manufacture and use of ozone-depleting chemicals are proceeding at a pace greater than expected. Good News, for Once, on Ozone, N.Y. Times, August 30, 1993 (editorial).

[Section 12:85]

¹Clean Air Act § 607, as added by § 602 of the 1990 Clean Air Act Amendments. Each trade in such allowances must result in a more rapid reduction in total production, however, and the ozone depletion potential of the traded substances must balance. EPA promulgated a final rule relating to CFC allowances on July 30, 1992. 57 Fed. Reg. 33754 (1992), amending 40 C.F.R. part 82.

²Clean Air Act §§ 608, 609, as added by § 602 of the 1990 Clean Air Act Amendments. The first of these rules, governing automobile air conditioner servicing, was promulgated on July 14, 1992. 57 Fed. Reg. 31242, amending 40 C.F.R. part 82.

³Clean Air Act § 610, as added by § 602 of the 1990 Clean Air Act Amendments. EPA proposed regulations banning nonessential uses of CFCs on January 16, 1992. 57 Fed. Reg. 1984 (1992), finalized at 59 Fed. Reg. 13044 (March 18, 1994).

⁴Clean Air Act § 612, as added by § 602 of the 1990 Clean Air Act Amendments.

⁵Clean Air Act § 611, as added by § 602 of the 1990 Clean Air Act Amendments. EPA's proposed rule was published on May 4, 1992. 57 Fed. Reg. 19169 (1992).

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nonattainment area. Coal-fired power plants also could be subject to either of two NSPS, one for those for which construction began after August 17, 1971, and the other for those whose construction began after September 18, 1978. If the plant was a major source built in a nonattainment area after enactment of the 1977 Amendments, the applicable standard would be LAER, while a similar plant built the same day in an attainment area would be subject to BACT. If its emissions affect visibility in areas such as national parks, the visibility program may dictate other emission limits. Just to complete the package, power plants were almost subject to NESHAPs for radionuclides. Coal-fired power plants are not entirely typical, because they are one of the central concerns of the Clean Air Act and recent regulatory initiatives, but they illustrate quite well the variety of emission control regimes possible under the Act.

To some extent this picture of diversity is simplified by the limited number of control options available for each source category. It may be that BACT, LAER, NSPS and Part D SIP limits are identical for a given source category because there is only one advanced control option available. In such cases, there still might be considerable variation in other regulatory demands, such as emission and air quality monitoring and reporting requirements.

The variety of potential regulatory requirements for stationary sources has several implications. It is self-evident that anything this complex has to be subject to inefficiencies. Training new staff becomes a considerable undertaking for the regulator and the regulated alike. A single state agency may have to apply all the different types of power plant standards, and a single utility might have to comply with them. Complexity limits the possibility of meaningful public participation. Obtaining permits for a new source becomes more difficult. There can be little doubt that the complexity of the existing Clean Air Act scheme for stationary source regulation has its costs, although measuring those costs is another matter.

The variability of stationary source requirements is an impediment to regulatory efficiency and accountability, because it is very difficult to determine exactly what requirements are applicable to a specific source. The 1990 Amendments address this problem by requiring the states to establish operating permit programs essentially for all sources that are subject to congressionally mandated emission limits. Based on the Clean Water Act model, the new permits will catalogue all applicable emission limitations, and draft permits should indicate the programmatic origin of each limitation.¹ The permit proceedings will provide a single opportunity for the authorized state agency, EPA, other affected states, the permit applicant, and the public to consider the appropriate control requirements for a source.

The new operating permit program extends to a wide range of sources. All “major sources,” generally including those with the potential to emit more than 100 tons per year of any regulated air pollutant, must obtain permits.² In nonattainment areas for which the Act now mandates lower major source thresholds, smaller sources will also be covered.³ Affected sources under the Acid Rain program and major hazardous air pollutant sources must also obtain permits.⁴ In addition, the permit sec-

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¹57 Fed. Reg. 32250, 32304 (codified at 40 C.F.R. § 70.6(a)(1)).

²Clean Air Act § 502(a), as added by § 501 of the 1990 Clean Air Act Amendments; 57 Fed. Reg. at 32297(codified at 40 C.F.R. § 70.3(a)(1)).

³Clean Air Act § 502, as added by § 501 of the 1990 Clean Air Act Amendments; 57 Fed. Reg. at 32297(codified at 40 C.F.R. § 70.3(a)(1)). See §§ 12:40 to 12:42.

⁴Clean Air Act § 502(a), as added by § 501 of the 1990 Clean Air Act Amendments; 57 Fed. Reg. at 32297(codified at 40 C.F.R. § 70.3(a)(3), (4)).

tion is applicable to any source subject to NSPS under § 111,⁵ any source required to have a preconstruction PSD or NSR permit,⁶ and any additional source category designated by EPA by regulation.⁷ However, except for solid waste incineration units, EPA has at least temporarily given states the discretion to exempt non-major sources from permit requirements,⁸ and in 2005, permanently exempted five source categories of nonmajor sources.⁹ The regulations also allow the permitting authority to issue general permits covering numerous similar sources.¹⁰ Through the use of exemptions and general permits, EPA hopes to ease the burden the new program would face from potentially as many as 350,000 non-major sources entering the permit system.¹¹

Congress set out its requirements for the program in some detail, which EPA has carried into the regulations.¹² Permits must include all applicable federal and state emission limits and provide for monitoring, inspection, and reporting.¹³ The permits must require compliance certifications and all applications and reports also must be certified.¹⁴ Permits may have a term of up to five years (twelve years for solid waste incineration units), but those for major sources that have a term of over three years also must include a “reopener” provision, requiring that the permit be modified if more stringent new emission standards are promulgated.¹⁵ The states must prescribe permit fees high enough to recover the cost of developing and implementing the permit programs.¹⁶

The processing of any individual permit will involve EPA, the state, other affected

⁵Clean Air Act § 502(a), as added by § 501 of the 1990 Clean Air Act Amendments; 57 Fed. Reg. at 32297(codified at 40 C.F.R. § 70.3(a)(2)). *See* § 12:59.

⁶Clean Air Act § 502(a), as added by § 501 of the 1990 Clean Air Act Amendments; 57 Fed. Reg. at 32297(codified at 40 C.F.R. § 70.3(a)(1)). *See* § 12:86.

⁷Clean Air Act § 502(a), as added by § 501 of the 1990 Clean Air Act Amendments; 57 Fed. Reg. at 32297(codified at 40 C.F.R. § 70.3(a)(5)).

⁸57 Fed. Reg. at 32297 to 32298 (codified at 40 C.F.R. § 70.3(b)(1)). The regulations also contain a permanent discretionary exemption for all sources and categories that would be required to obtain a permit solely because they are subject to 40 C.F.R. part 60, subpart AAA (Standards of Performance for New Residential Wood Heaters) and 40 C.F.R. § 61.145 (NESHAPS for Asbestos, Standard for Demolition and Renovation).

⁹70 Fed. Reg. 75320 (Dec. 19, 2005). The categories are perchlorethylene dry cleaning, chromium electroplating and anodizing, ethylene oxide sterilization, halogenated solvent cleaning, and secondary aluminum production.

¹⁰57 Fed. Reg. at 32305 (codified at 40 C.F.R. § 70.5(d)).

¹¹57 Fed. Reg. at 32262.

¹²EPA has made available two types of draft model operating permits under Title V of the 1990 Amendments to the Clean Air Act: specific conditions permits, which contain specific applicable requirements to source categories subject to particular requirements under the Act; and general conditions permits, which contain generally applicable requirements drawn from 40 C.F.R. pt. 70 (EPA’s operating permits rules). 58 Fed. Reg. 25639 (Apr. 27, 1993). EPA designed the models to allow for incorporation of specific requirements, where applicable, into the general permit to assemble a complete permit for a particular source.

¹³Clean Air Act § 502(b), as added by § 501 of the 1990 Clean Air Act Amendments; 57 Fed. Reg. at 32304(codified at 40 C.F.R. § 70.7(a)(1)(3)). The permitting authority may also choose to include other state or local requirements that are not “federally enforceable,” and these should be clearly marked as such in the permit.

¹⁴Clean Air Act § 503(b)(2), as added by § 501 of the 1990 Clean Air Act Amendments. This certification requirement has significant implications for enforcement. *See* § 12:48. notes 8–9 and accompanying text.

¹⁵Clean Air Act § 502(b)(9), as added by § 501 of the 1990 Clean Air Act Amendments; 57 Fed. Reg. at 32304(codified at 40 C.F.R. § 70.7(f)).

¹⁶The Act requires states to collect fees of at least \$25 per ton of regulated pollutant, but does not require the states to set maximum permit fees over \$100,000 per source. Clean Air Act § 502(b)(3)(B)(i), (iii), as added by § 501 of the 1990 Clean Air Act Amendments.

states, the permit applicant and the interested public. The state must submit for comment permit applications and proposed and final permits to EPA, contiguous states whose air quality may be affected, and all states that are within fifty miles of the permitted source.¹⁷ The neighboring states may make recommendations, and EPA may object to the permit.¹⁸ The state may not issue a permit over EPA's objection and must revise the permit within 90 days to respond to such objection or EPA will take over issuance of the permit.¹⁹ The state must provide notice and an opportunity to comment at a hearing to the interested public.²⁰ The public may challenge the final permit or petition EPA to veto the permit on the basis of issues raised during the public comment period.²¹ There is no precedent for this petition authority in the other federal environmental permit programs, and it effectively delays the date on which a permit becomes definitely final until the deadline for citizen petitions or EPA's response has passed.²² The above requirements also apply to permit renewals and non-minor modifications.²³

EPA has attempted to provide a modicum of flexibility with respect to certain minor permit changes. Administrative permit changes, like the correction of typographical errors, but also changes in ownership or control, do not require notice to the public or affected states.²⁴ "Minor modifications" in the source or sources covered by the permit also do not require notice to the public.²⁵ The regulations authorize the states to allow a source to implement a minor modification as soon as the application for the modification is filed,²⁶ but the source is subject to an enforcement action if its application is rejected.²⁷ The state may also utilize special procedures to process groups of a source's applications for minor permit modifications.²⁸

The regulations require the permit to state that no permit revision is required for any "approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes" provided for in the permit.²⁹ Similarly, for internal trades, the permit must, at the applicant's request, contain terms and conditions for the "trading of emissions increases and decreases" within the permitted facility to the extent applicable law allows such trades without a case-

¹⁷Clean Air Act § 505(a), as added by § 501 of the 1990 Clean Air Act Amendments.

¹⁸Clean Air Act § 505(a)(2)(B) (state recommendations), § 505(b)(1) (EPA objections), as added by § 501 of the 1990 Clean Air Act Amendments.

¹⁹Clean Air Act § 505(b)(3), as added by § 501 of the 1990 Clean Air Act Amendments; 57 Fed. Reg. at 32307, 32310(codified at 40 C.F.R. §§ 70.7(a), 70.8).

²⁰Clean Air Act § 502(b)(6), as added by § 501 of the 1990 Clean Air Act Amendments.

²¹Clean Air Act § 502(b)(6) (judicial review), § 505(b)(2) (citizen petitions), Clean Air Act § 502(b)(6) (judicial review), Clean Air Act § 505(b)(2) (citizen petitions), as added by § 501 of the 1990 Clean Air Act Amendments.

²²The citizen petition must be filed within sixty days of the end of a forty-five-day period that begins when EPA receives a copy of the proposed permit or notification from the permitting state that it is rejecting recommendations from a neighboring state for changes in the permit. Clean Air Act § 505(b). At this time the permit may have been issued as final and effective, but may be recalled by EPA. Clean Air Act § 505(b).

²³Clean Air Act § 505(a), as added by § 501 of the 1990 Clean Air Act Amendments.

²⁴57 Fed Reg. at 32307(codified at 40 C.F.R. § 70.7(d)).

²⁵57 Fed Reg. at 32307 to 308; 40 C.F.R. § 70.7(d).

²⁶57 Fed Reg. at 32308; 40 C.F.R. § 70.7(e)(2)(v).

²⁷57 Fed Reg. at 32308; 40 C.F.R. § 70.7(e)(2)(v).

²⁸57 Fed Reg. at 32308 to 309; 40 C.F.R. § 70.7(e)(3).

²⁹57 Fed Reg. at 32305; 40 C.F.R. § 70.6(a)(8).

by-case approval.³⁰

Once issued, the new operating permit should be the exclusive reference point for compliance and enforcement, but that will not always be the case. Congress provided that compliance with the permits would constitute compliance only with the Act's permit requirement itself and any other provisions specifically implemented or ruled out in the permit and it may be difficult to persuade the states to include blanket waivers in the new permits.³¹ The regulations state that unless the permit specifically states that a "permit shield" exists, it shall be presumed not to exist.³²

The Act sets out an ambitious schedule for establishing the required permit programs. EPA was required to promulgate rules governing the state programs by November 15, 1991.³³ States must submit programs for EPA approval by November 15, 1993, and EPA must act on the submittals within one year.³⁴ EPA may impose nonattainment sanctions on a state that does not comply with the schedule and was required to promulgate and implement a federal permit program by November 15, 1995, for any state that will not have an approved program in place by that date.³⁵ The permit program takes effect when approved or promulgated by EPA, and the obligation to have a permit accrues at the same time.³⁶ The Act does provide, however, that a source shall not be deemed to be in violation of this new requirement if it submits a proper permit application within one year of the program's effective date.³⁷ As noted above, the states (or EPA) must include source-specific hazardous air pollutant standards and other requirements in permits if EPA has not promulgated the required categorical emission standards by its deadline.³⁸ If the Clean Water Act experience is a model, many permits will be based on such standards, especially if the EPA categorical standards are challenged in court.

When the new permit program is in place, the regulatory process should become more manageable for EPA, the states and the regulated industries. Getting to that point could be extraordinarily difficult, however.³⁹ Many states already had operating permit programs, but most if not all, need to be upgraded to meet the new EPA

³⁰57 Fed. Reg. at 32305; 40 C.F.R. § 70.6(a)(10).

³¹If the permit does not impose a provision of the SIP or a federal regulation applicable to the permitted source's category, compliance with the permit does not shield the source from an action to enforce such provision, unless the permit specifically states that the provision is not applicable. If the provision in fact is not applicable to the specific source, that should be a defense in the action, but defending enforcement actions is a costly way to define the scope of a facility's compliance obligations. The obvious answer is for the state to specifically deem not applicable all regulations not implemented in the permit, but some states may prefer to let the permittee bear the risk associated with any uncertainty concerning the applicability of provisions not covered by the permit.

In addition, not all applicable compliance requirements may ultimately be included in the permits. Changes in "affected units" sulfur dioxide allowances resulting from transfers may not be recorded. *See* § 12:56.

³²57 Fed. Reg. at 32306(codified at 40 C.F.R. § 70.6(f)).

³³Clean Air Act § 502(b), as added by § 501 of the 1990 Clean Air Act Amendments. EPA missed the deadline, promulgating rules on July 21, 1992. 57 Fed. Reg. 32250 (1992), codified at 40 C.F.R. part 70.

³⁴Clean Air Act § 502(d), as added by § 501 of the 1990 Clean Air Act Amendments.

³⁵Clean Air Act § 502(d)(2)(B), (3), as added by § 501 of the 1990 Clean Air Act Amendments.

³⁶Clean Air Act § 503(a), as added by § 501 of the 1990 Clean Air Act Amendments.

³⁷Clean Air Act § 503(c), as added by § 501 of the 1990 Clean Air Act Amendments.

³⁸§ 12:58. *See* 57 Fed. Reg. at 32297(codified at 40 C.F.R. § 70.2) ("regulated air pollutants" include hazardous air pollutants for which an equivalent emission limitation by permit is required under § 112(j)).

³⁹By the mid-1990s, the operating permit program had become a focus for political forces who view the 1990 Amendments to the Clean Air Act as both stultifying and wasteful of industry resources. Under intense pressure, and anxious to avoid a reopening of the Act by a hostile Congress, EPA began

requirements. The new permit programs must be put in place at the same time as sweeping new acid rain and air toxics requirements. The exploding workload will put a tremendous strain on EPA and state air program resources.

§ 12:87 The substantive and procedural requirements imposed on industrial facilities by Title V of the 1990 Clean Air Act Amendments, applicable regulations, and key EPA guidance documents¹

All companies today, whether large or small, need to be aware of the types and amounts of their air emissions. Based on the types and amounts of emissions, these sources may be required to obtain operating permits under the Clean Air Act's (CAA's) Title V Program. This section provides a detailed discussion of the Title V Operating Permit Program and a review of the contents required in a Title V permit.

Title V Operating Permit Program

Background

The 1990 CAA Amendments introduced a comprehensive operating permit scheme for stationary sources. Prior to 1990, only new or modified sources were required to obtain permits under federal law, although many states required permits for existing sources. The operating permit program under the CAA Amendments was modeled on the Clean Water Act's national pollution discharge elimination system permitting scheme implemented beginning in 1972.

The primary goal of the CAA operating permit (or Title V) program is to

to retreat from policy positions taken earlier in the program's development. *See, e.g.*, VI Clean Air Rep. (Inside EPA) 3 (Sept. 21, 1995) (Congress pressures EPA for one year delay in implementation of Title V permit program); Letter from Mary Nichols EPA Assistant Administrator for Air and Radiation, to William H. Lewis, Morgan Lewis and Bockius (May 31, 1995), *reprinted in* Clean Air Rep. (Inside EPA) (June 15, 1995)(special report) (detailed response to industry concerns regarding implementation of the 1990 Amendments to the Clean Air Act); EPA, White Paper for Streamlined Development of Part 70 Permit Applications (July 10, 1995), *reprinted in* 26 Env't Rep. (BNA) 573 (July 14, 1995). The Agency's change of heart included an enhanced effort to incorporate existing state operating permit programs into the federal system, rather than requiring entirely new programs. 60 Fed. Reg. 45530 (Aug. 31, 1995)(reproposal). EPA also proposed to streamline the process for permit revisions in order to allow sources to maintain flexibility in their operations. 60 Fed. Reg. 45531 (Aug. 31, 1995). These proposed drafts, however, have never been finalized in the rule.

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incorporate all the requirements applicable to a covered facility into one document. This approach serves several purposes. The program provides a vehicle for easier enforcement; a single data set for all parties (government, the regulated entity, and the public) to refer to; increased consistency between environmental media; and a uniform national approach to permitting. The program also allows the development of a baseline data set for improved state implementation plan (SIP) development and emissions trading and offset programs.²

The Title V program establishes the minimum requirements for an operating permit program, and the states are allowed to include more stringent requirements if they desire.³ The permitting program is procedural; it does not impose any new air pollution control requirements but may impose additional monitoring, recordkeeping, reporting, and certification requirements.⁴ The permitting program is designed to be self-sufficient by imposing permit fees to cover costs. By the 1993 statutory deadline under CAA § 502(d), 48 states had their own permit program. Today, all states have an approved operating permitting program.⁵ In some cases, these programs are administered by local authorities or even tribal bodies.

The federal regulations governing state operating permits are found at 40 C.F.R. Part 70. If a state does not have a fully approved permit programs, then the U.S. Environmental Protection Agency (EPA) is required to administer the operating permit program under the federal regulations found at 40 C.F.R. Part 71. Regardless of whether the facility is subject to the state or federal permitting program, the Title V permits are all federally enforceable.

Applicability and Scope

Current Scope of the Program: Major Sources, Affected Facilities, and Municipal Waste Combustors

The Part 70 regulations allow permitting authorities to limit the scope of the Title V program to major sources, affected facilities under Title IV, municipal waste combustors regulated under § 129(a), and categories designated by the Administrator.⁶ Most permitting authorities have limited their program to these categories. Understanding the scope of these categories is critical to a proper understanding of Title V applicability.

Federal law requires sources in the following categories to potentially obtain a Title V permit per CAA § 502(a):

- any source subject to the hazardous air pollutant provisions at CAA § 112, except those subject solely to § 112(r) (accidental release provision).
- a major stationary source as defined under the definitions section of CAA § 302(j) (i.e., any source that emits or has the potential-to-emit (PTE) 100 tons per year (tpy) of any air pollutant).
- an “affected source” under the acid rain program in subchapter IV of the CAA (i.e., any one of the listed units in table A of CAA § 404 or as provided in CAA § 405).
- any source subject to the new source performance standards (NSPS) found in CAA § 111.

²U.S. Environmental Protection Agency, Final Rule Operating Permits Program, 57 Fed. Reg. 32249 (July 21, 1992).

³42 U.S.C.A. §§ 7416, 7661e(a), CAA §§ 116, 506(a); 40 C.F.R. § 70.1(c).

⁴40 C.F.R. § 70.1(b).

⁵Regina P. Cline, All Pending Title V Permits Scheduled for Completion by 2001, EPA Official Says, Daily Env't Rep. (BNA), June 23, 1999, at A-4.

⁶40 C.F.R. § 70.3(a).

- any source required to have a permit under the prevention of significant deterioration (PSD) and nonattainment area requirements found in Parts C and D of CAA subchapter I (i.e., those requiring a PSD or new source review (NSR) permit).⁷
- any source designated by the Administrator of EPA.

Unlike the preconstruction review program that preceeded Title V, the statute does not differentiate between new, modified, reconstructed, or existing major sources—all must obtain permits.⁸

• *Major Source.* The CAA defines a major source in several different ways, depending on context. The Act itself generally defines a major source as “any stationary facility or source of air pollutants which directly emits, or has the potential to emit, one hundred tons per year or more of any air pollutant (including any major emitting facility or source of fugitive emissions of any such pollutant, as determined by rule by the Administrator)” in § 302(j).⁹ This definition introduces the fundamental concept that any “source” that has the potential to emit 100 tons or more of any regulated air pollutant, excluding fugitive emissions (except for sources in 27 listed categories) is subject to Title V control. The only exception is if such a source accepts enforceable limits on its operations that reduce its potential to emit below Title V thresholds. Such a source is typically referred to as a synthetic minor or conditional major source. The use of conditions to create a synthetic minor source is discussed later in the Article.

The second definition of major source includes any source regulated as a major stationary source under the PSD and nonattainment area major NSR preconstruction review programs. While the 250 and 100 ton PSD thresholds do not expand the universe of sources subject to Title V, the definition of major for certain nonattainment areas classification is lower, as seen in the table below.

Nonattainment Classification	Ozone volatile organic compounds (VOCs) and nitrogen oxide (NO_x)	Particulate Matter less than 10 microns (PM₁₀)	Carbon Monoxide (CO)
Marginal	100 tpy VOCs		
	100 tpy NO _x		
Moderate	100 tpy VOCs	100 tpy PM ₁₀	100 tpy CO
	100 tpy NO _x		
Serious	50 tpy VOC	70 tpy PM ₁₀	50 tpy CO if stationary sources > 25% of inventory
Severe	25 tpy VOC		
	25 tpy NO _x		
Extreme	10 tpy VOC		

⁷For example, in ozone nonattainment areas, major source classification is based on the area classification and emission. In marginal or moderate areas, a potential-to-emit (PTE) of 100 tons per year (tpy) of nitrogen oxides or volatile organic compounds is considered major, while in serious areas the threshold drops to a PTE of 50 tpy, and in severe areas the PTE amount is 25 tpy. A limited sliding scale applies to carbon monoxide and particulate matter less than 10 microns as well, although with different threshold amounts.

⁸James T. O'Reilly et al., Clean Air Permitting Manual 16-25 (1997).

⁹42 U.S.C.A. § 7602(j).

	10 tpy NO _x		
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Thus, sources emitting amounts as small as 10 tpy may be subject to Title V operating requirements in extreme ozone nonattainment areas.

The third definition of major source arises from the hazardous air pollutant (HAP) program. A major source is defined as any source that emits 10 tpy of any single HAP or 25 tpy of any combination of HAPs. Unlike the definition of major source under § 302(j) and the preconstruction review program, fugitive emissions are considered in determining the source's potential to emit in the HAP program.

The fourth definition of major source involves radionuclides. The definition in the regulations states “[f]or radionuclides, ‘major source’ shall have the meaning specified by the Administrator by rule.”¹⁰ The Administrator has yet to specify a meaning for major source by rule.

A major source includes a group of stationary sources from the same industrial group that are located on contiguous or adjacent properties and are under common control.¹¹ The same industrial group means the sources have the same two-digit Standard Industrial Classification (SIC) code. In determining major source status under the § 302(j) definition, fugitive emissions¹² are included in the determination if the facility falls within the 27 categories listed in 40 C.F.R. § 70.2. The 27th category includes all sources regulated under the NSPS or national emission standards for hazardous air pollutants (NESHAPs) under CAA §§ 111 and 112, respectively, but the fugitive emissions are counted only for those air pollutants regulated by the category under CAA §§ 111 or 112. Additionally, sources subject to NSR under Parts C and D may be aggregated even with different SIC codes if they are support facilities “integrally related with the primary activity of the site.”¹³ Sources that are temporary or operated by contractors must be included in the emissions for major source determinations.¹⁴

A source may be broken down into emission units or groups of emission units for purposes of structuring the Title V permit. However, every emission unit at a Title V source must be covered by a Title V permit.

The determination of whether the source is major or nonmajor is crucial. For major sources, *all* applicable requirements for *all* emissions units must be included in the permit.¹⁵ For example, if a source is considered a major source for a single criteria pollutant, then each regulated pollutant emitted from that source must be addressed in the permit, including NSPS, HAP standards under § 112, and any SIP requirements. In contrast, nonmajor sources subject to the permitting provisions need only address those requirements for those units that triggered Title V coverage.¹⁶

- *Affected Sources.* Sources subject to Title IV of the CAA pertaining to acid depo-

¹⁰40 C.F.R. § 70.2(1)(ii).

¹¹40 C.F.R. § 70.2.

¹²Fugitive emissions are “those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening.” 40 C.F.R. § 70.2. This definition is identical to the fugitive emission definition found in the NSR program. Note that emissions that are “actually collected” are not fugitive. Memorandum from Thomas C. Curran, U.S. EPA, Interpretation of the Definition of Fugitive Emissions in Parts 70 and 71, at 2 (Feb. 10, 1999).

¹³See 45 Fed. Reg. 52675, 52695 (Aug. 7, 1980); 54 Fed. Reg. 48870 (Nov. 28, 1989).

¹⁴Letter from John S. Seitz, U.S. EPA, to Lisa J. Thorvig, Minnesota Pollution Control Agency (Nov. 16, 1994).

¹⁵40 C.F.R. § 70.3(c)(1).

¹⁶40 C.F.R. § 70.3(c)(2).

sition control (acid rain) are also subject to Title V as affected sources.¹⁷ The statute defines “affected source” as “a source that includes one or more affected units,” which means “a unit that is subject to emission reduction requirements or limitations under this subchapter [Acid Deposition Control].”¹⁸

- *Municipal Waste Combustors.* The CAA requires that “solid waste incineration units” or municipal waste combustors “operate pursuant to a permit issued under” Title V.¹⁹ This requirement becomes effective either 36 months after promulgation of performance standards for municipal waste combustors or upon the effective date of the state’s Title V permit program, whichever is later.²⁰ Since all states have approved Title V permit programs and performance standards have been promulgated, municipal waste combustors are subject to the Title V permitting process.

- *Other Sources Designated by the Administrator.* The Administrator is authorized to designate other sources that must obtain a Title V operating permit. Thus far, the Administrator has only designated decorative chromium electroplating sources as other sources under Title V. However, the Administrator then rescinded this category.

- *Nonmajor and Exempt Sources.* Despite the broad reach of Title V’s permitting requirement, EPA has, by rule, allowed permitting authorities to temporarily defer most nonmajor sources from the Title V program until EPA has completed a rulemaking to determine “how the program should be structured for nonmajor sources and the appropriateness of any permanent exemptions.”²¹ This option is not available, however, for “affected sources” under the acid rain program or solid waste incinerators subject to CAA § 129. Exemptions for nonmajor sources subject only to § 111 or 112 are determined when a new standard is promulgated. These exemptions and deferrals are justified by EPA on the basis that immediate compliance would be impractical and infeasible, and that the vast majority of nonmajor sources are small businesses not currently regulated that would require great amounts of resources due to their lack of expertise and experience.²² In 2005, EPA finalized an exemption for five categories of nonmajor sources.²³

EPA has also exempted sources and source categories subject to the standards for residential wood heaters and asbestos demolition and renovation from Title V requirements provided that their regulation under 40 C.F.R. Part 60, subpart AAA, and 40 C.F.R. § 61.145 would be the sole reason for Title V applicability.²⁴ States, however, may require these sources to obtain permits if the state chooses.

Sources subject to a one-time reporting requirement provision under the CAA may not be required to obtain an operating permit. If an individual nonmajor source subject to 40 C.F.R. Parts 60, 61, or 63 meets two conditions, the source will not be subject to Title V requirements.²⁵ The first condition is that the “source’s only applicable requirement is a one-time or ongoing notification, reporting, or record keep-

¹⁷42 U.S.C.A. § 7651g, CAA § 408.

¹⁸42 U.S.C.A. § 7651a(1), (2), CAA § 402(1), (2).

¹⁹42 U.S.C.A. § 7429(e), CAA § 129(e).

²⁰42 U.S.C.A. § 7429(e), CAA § 129(e).

²¹40 C.F.R. § 70.3(b)(1).

²²U.S. EPA, Final Rule Operating Permits Program, 57 Fed. Reg. 32249, 32561 to 32562 (July 21, 1992).

²³70 Fed. Reg. 75320 (Dec. 19, 2005). The categories are perchlorethylene dry cleaning, chromium electroplating and anodizing, ethylene oxide sterilization, halogenated solvent cleaning, and secondary aluminum production.

²⁴40 C.F.R. § 70.3(b)(4).

²⁵Memorandum from Steven J. Hitte, U.S. EPA, on Title V Applicability of One-Time “Reporting” Provisions for Nonmajor Sources (Apr. 19, 1999).

ing requirement,” and the second condition is that this requirement “exists to show that the source’s actual emissions are below a certain threshold established by the standard.”²⁶ EPA summarizes by stating that:

We interpret the Clean Air Act and the regulations at parts 70 and 71 to mean that [the one-time reporting requirement sources] are “not subject to standards or regulations under section 111” for purposes of title V permitting Therefore, these sources are not required to apply for title V permits on the basis of their record keeping and reporting requirements as a matter of federal law.²⁷

An example of such a condition is certain volatile organic liquid storage vessels subject solely to a dimensional recordkeeping requirement under the NSPS in 40 C.F.R. Part 60, Subpart Kb.

Interpretation Issues

Some subjects of Title V are not clearly defined and still leave room for interpretation by EPA, state agencies, permittees, and sometimes the courts. When subjects are not clearly defined under Title V of the CAA, other titles of the Act are used to clarify or justify certain definitions.

• *Stationary Sources.* Section 302(z) of Title V defines “stationary source” generally as “any source of an air pollutant except those emissions resulting directly from an internal combustion engine . . . or nonroad vehicle.”²⁸ In the regulations, a stationary source “means any building, structure, facility, or installation that emits or may emit any regulated air pollutant or any pollutant listed under section 112(b) of the Act.”²⁹

White Paper Number 2, published by EPA on March 5, 1996, allows a source that is “familiar” to the permitting authority to stipulate that it is a major source or that it is subject to federal requirements as specified.³⁰ This policy alleviates the need for the source to gather and provide information to determine the applicability of the Title V program. “Familiarity” means the permitting authority has had previous review experience or has an “otherwise adequate” familiarity level with the facility’s operation. Examples provided by EPA include having previously issued a permit to the facility or having a current emissions inventory.³¹ However, this “does not affect the requirement to provide information for other purposes under part 70,” such as monitoring and recordkeeping or emission descriptions.³²

The items to be included in the permit differs for major and nonmajor sources. Under 40 C.F.R. § 70.3(c)(1), an operating permit for a major source must include “all applicable requirements for all relevant emissions units in the major source.” In other words, all the source’s requirements under the CAA must be included. However, the next paragraph states that nonmajor source permits are only required to contain the applicable requirements that “cause the source to be subject to the

²⁶Memorandum from Steven J. Hitte, U.S. EPA, on Title V Applicability of One-Time “Reporting” Provisions for Nonmajor Sources, at 1 (Apr. 19, 1999).

²⁷Memorandum from Steven J. Hitte, U.S. EPA, on Title V Applicability of One-Time “Reporting” Provisions for Nonmajor Sources, at 2 (Apr. 19, 1999).

²⁸42 U.S.C.A. § 7602(z), CAA § 302(z).

²⁹40 C.F.R. § 70.2.

³⁰U.S. EPA, White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program 34 (1996) [hereinafter White Paper Number 2].

³¹U.S. EPA, White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program 32 (1996).

³²U.S. EPA, White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program 32 (1996).

part 70 program.”³³ EPA has taken the position that the national ambient air quality standards (NAAQS) for criteria pollutants implemented through a SIP is not an “applicable requirement” to be included in an operating permit.³⁴

● *Potential-to-Emit.* A source’s emissions are determined by its PTE for purposes of Title V applicability. “Potential-to-emit” is defined at 40 C.F.R. § 70.2 as:

the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation is enforceable by the Administrator.³⁵

This definition mirrors the PTE definition for the NSR and PSD programs and is also used for the § 112 program. While the NSR and PSD programs were implemented before 1990, the § 112 and Title V programs were added in the 1990 CAA Amendments.

In January 1995, EPA issued a guidance document to serve as an interim, transitionary gap-filler for two years due to the difficulties in acquiring a federally enforceable limit (a requirement) because of slow state program implementation.³⁶ The guidance listed five manners in which to create a federally enforceable PTE limit.³⁷

- federally enforceable state operating permit implemented through SIP and EPA enforceable;
- state limits imposed by the SIP and approved by EPA;
- general permits;
- federally enforceable state construction permits (i.e., NSR and minor NSR); or
- Title V permits.

The policy also allows sources that actually emit less than half the major source threshold requirement to be treated as nonmajor sources for the interim period.

On July 21, 1995, the U.S. Court of Appeals for the D.C. Circuit remanded the PTE definition with regards to the § 112 program and the “federally enforceable” requirement.³⁸ The D.C. Circuit then remanded and vacated the PTE rules for the NSR and PSD programs.³⁹ In light of these cases, EPA issued a memorandum in January 1996 on effective limits on PTE.⁴⁰ EPA stated that the three “overarching considerations” governing PTE limit effectiveness are: (1) enforceability as a practi-

³³40 C.F.R. § 70.3(c)(2).

³⁴See David P. Novello, Overview of the Title V Operating Permit Program, in *The Clean Air Act Handbook* 450-51 (Robert J. Martineau, Jr. & David P. Novello eds., 1998).

³⁵40 C.F.R. § 70.2.

³⁶Memorandum from John S. Seitz, U.S. EPA, on Options for Limiting the Potential to Emit of a Stationary Source Under Section 112 and Title V of the Clean Air Act (Jan. 25, 1995).

³⁷Memorandum from John S. Seitz, U.S. EPA, on Options for Limiting the Potential to Emit of a Stationary Source Under Section 112 and Title V of the Clean Air Act (Jan. 25, 1995); see David P. Novello, Overview of the Title V Operating Permit Program, in *The Clean Air Act Handbook* 448-49 (Robert J. Martineau, Jr. & David P. Novello eds., 1998).

³⁸*Nat’l Mining Ass’n v. EPA*, 59 F.3d 1351, 1364, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 21390, 21397 (D.C. Cir. 1995). The court remanded the matter to EPA for an explanation as to “how its refusal to consider limitations other than those that are ‘federally enforceable’ serves the statute’s directive to ‘consider controls’ when it results in a refusal to credit controls imposed by a state or locality even if they are unquestionably effective.”

³⁹*Chemical Mfgs. Ass’n v. EPA*, 1995 WL 650098, Nos. 89-1514, 89-1516 (D.C. Cir. 9-15-95).

⁴⁰Memorandum from Steven A. Herman & Mary D. Nichols, U.S. EPA, on “Effective” Limits on Potential to Emit: Issues and Options (Jan. 31, 1996).

cal matter; (2) compliance incentive effectiveness; and (3) state program effectiveness.⁴¹ This memo discussed two options to ensure compliance effectiveness: (1) state or locally enforceable limits or (2) streamlined federal enforceability. As EPA notes, the “central question arising from the court decisions is whether sufficient compliance incentives exist if EPA and citizens cannot directly enforce PTE limits in federal court.”⁴² EPA wanted to explore these two options with stakeholders for a future rulemaking on PTE limits and enforceability.

Nonetheless, the D.C. Circuit felled the last PTE definition later that year by vacating the definition as applied to the Title V program.⁴³ The 1995 transition policy, originally to be in effect for only two years, was extended until a rule could be promulgated, and the term “federally enforceable” in the PTE definition for purposes of operating permits has been redefined to mean “federally enforceable or legally and practicably enforceable by a State or local air pollution control agency” at least for purposes of federal law.⁴⁴

● *Fugitive Emissions.* As with the PSD and nonattainment NSR programs, fugitive emissions are counted under Title V to determine major source status only for certain source categories. The categories are listed under the definition for major source and are the same categories under the PSD program.⁴⁵ Under the definition, a major stationary source is a source that “directly emits or has the potential to emit, 100 tpy or more of any air pollutant (including any major source of fugitive emissions of any such pollutant, as determined by rule by the Administrator).”⁴⁶ However, fugitive emissions of a stationary source will not be considered in determining whether it is a major stationary source unless the source belongs to one of the listed categories.⁴⁷ In addition to the 26 specific categories, the list also includes all other stationary source categories regulated by a standard promulgated under section 111 or 112 of the Act, but only with respect to those air pollutants that have been regulated for that category.⁴⁸ Therefore, the Title V permitting process requires source categorization to determine the scope of the source and whether fugitive emissions should be counted toward the total emissions.

● *Regulated Air Pollutants.* A source must emit a “regulated pollutant” to be subject to the Title V program. Additionally, emissions of regulated pollutants determine the permit fees imposed on a source under the permitting program. Regulated air pollutants are defined at 40 C.F.R. § 70.2, including:⁴⁹

- NO_x and VOCs;
- pollutants with promulgated NAAQS (PM₁₀, PM less than 2.5 microns in diameter, sulfur dioxide, ozone, nitrogen dioxide, CO, and lead);
- pollutants subject to NSPS under CAA § 111;
- air toxics subject to CAA § 112; and
- Class I and II substances under the stratospheric ozone program in CAA Title VI.

⁴¹Memorandum from Steven A. Herman & Mary D. Nichols, U.S. EPA, on “Effective” Limits on Potential to Emit: Issues and Options, at 3-4 (Jan. 31, 1996).

⁴²Memorandum from Steven A. Herman & Mary D. Nichols, U.S. EPA, on “Effective” Limits on Potential to Emit: Issues and Options, at 5 (Jan. 31, 1996).

⁴³Clean Air Implementation Project v. EPA, 1996 WL 393118, No. 96-1224 (D.C. Cir. 1996).

⁴⁴U.S. EPA, Extension of January 25, 1995 Potential to Emit Transition Policy (Aug. 27, 1996).

⁴⁵40 C.F.R. § 70.2.

⁴⁶40 C.F.R. § 70.2.

⁴⁷40 C.F.R. § 70.2.

⁴⁸40 C.F.R. § 70.2.

⁴⁹40 C.F.R. § 70.2; Memorandum from Lydia N. Wegman, U.S. EPA, Definition of Regulated Air Pollutant for Purposes of Title V (Apr. 26, 1993) [hereinafter Wegman Memo].

Note that “if a pollutant is regulated for one source category by a standard or other requirement, then the pollutant is considered a regulated air pollutants [sic] for *all* source categories.”⁵⁰ The exception to this rule is when a pollutant is regulated under § 112(g)(2) as a case-by-case maximum achievable control technology (MACT) determination under the toxics program. Additionally, states may add air pollutants for regulation if they choose.

There are several exclusions when applying this definition to *fee calculations only*. For purposes of determining a permit fee under 40 C.F.R. § 70.9(b)(2), carbon monoxide, pollutants regulated solely by virtue of classification as a Class I or II substance under CAA Title VI, and pollutants regulated solely because they are subject to CAA § 112(r) prevention of accidental release provisions are not counted in the fee determination.⁵¹

As previously discussed, all major sources are subject to the Title V permit requirements, and therefore it is important to determine what constitutes a “regulated air pollutant” for major source classification under CAA § 302(j). The definition itself is written broadly,⁵² but EPA has determined that a narrow interpretation is consistent with congressional intent and limits the definition to all pollutants *subject to regulation* (i.e., control of emissions) under the CAA.⁵³ This approach parallels the interpretation given under the PSD program.⁵⁴

Avoiding Title V: Synthetic Minors

A source that wishes to avoid Title V coverage altogether may opt for state non-Title V programs or other EPA programs that limit the PTE or provide enforceable limitations and/or criteria that enable the source to avoid Title V applicability. For example, a new source otherwise subject to best achievable control technology or lowest achievable emission rate under PSD or NSR programs that limits the emissions to below the major source threshold amounts may escape Title V coverage (as well as PSD and NSR LAER coverage).⁵⁵ Sources that do so are referred to as synthetic minor sources. This approach often receives greater scrutiny by the permitting authority than a Title V permit, and detailed monitoring, recordkeeping, and reporting requirements are typically imposed to ensure synthetic minor source status. If the source fails to comply with those synthetic limitations or it is shown that the limitations were fraudulent, then EPA or the state may bring an enforcement action for operating without a permit, which may be applied retroactively from the date when the source should have acquired the permit.⁵⁶ Additionally, a source may choose to obtain a Title V permit⁵⁷ and use the enforceable limitations in the operating permit to preclude coverage in other programs, such as NSR. This carries the same scrutiny and risk of enforcement for fraudulent permitting, however.

⁵⁰Memorandum from Lydia N. Wegman, U.S. EPA, Definition of Regulated Air Pollutant for Purposes of Title V, at 3 (Apr. 26, 1993) (emphasis in original).

⁵¹40 C.F.R. § 70.2.

⁵²Under CAA § 302(g), “the term ‘air pollutant’ means any air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive . . . substance or matter which is emitted into or otherwise enters the ambient air. Such term includes any precursors to the formation of any air pollutant.” 42 U.S.C.A. § 7602(g), CAA § 302(g).

⁵³Memorandum from Lydia N. Wegman, U.S. EPA, Definition of Regulated Air Pollutant for Purposes of Title V, at 4 (Apr. 26, 1993).

⁵⁴Memorandum from Lydia N. Wegman, U.S. EPA, Definition of Regulated Air Pollutant for Purposes of Title V, at 5 (Apr. 26, 1993).

⁵⁵See James T. O’Reilly et al., Clean Air Permitting Manual S-35 (1997).

⁵⁶James T. O’Reilly et al., Clean Air Permitting Manual S-35 (1997).

⁵⁷Sources that are not automatically included in the coverage are not excluded from applying for an operating permit if they desire, so long as they have the potential to become a major source.

Application Requirements

General Requirements

Permit applications should “contain information to the extent needed to determine major source status, to verify the applicability of part 70 or applicable requirements, . . . and to compute a permit fee (as necessary).”⁵⁸ A source that is subject to a permit program must obtain a permit on the date of permit program approval or the date the source falls under the purview of the permit program.⁵⁹ A source must apply for an operating permit within one year of when the source becomes subject to the program after EPA grants full, partial, or interim approval of the state program.⁶⁰ If a source requires a PSD or NSR permit under the preconstruction review programs of Parts C or D or must meet the requirements of § 112(g) (i.e., hazardous air pollutant source modifications), the source must obtain an operating permit or permit revision within one year of commencing operation after the state obtains either full, partial, or interim approval for their program.⁶¹ Sources subject to the acid rain Phase II program were required to submit an application by January 1, 1996, for sulfur dioxide and January 1, 1998, for nitrogen oxides.⁶²

Permit renewals must be filed at least six months before permit expiration, and this requirement may be extended out to 18 months if a state chooses.⁶³

- *General.* A permit application must contain:⁶⁴
 - identifying information for the facility, such as name, address, telephone number, contact individual at site, and owner;
 - a description of the source’s products and processes by SIC code;
 - all emissions for a major source;
 - all emissions of regulated air pollutant;
 - description of all points of emissions and emissions rates;
 - description of fuels, raw materials, production rates, and operating schedules;
 - identification and description of air pollution control equipment and compliance monitoring devices;
 - limitations on source operations or work practice standards;
 - description of all applicable requirements;
 - description of applicable test methods for each requirement;
 - explanation of proposed exemptions;
 - a compliance plan that includes:
 1. a statement that sources currently in compliance will continue to comply;
 2. a statement that sources becoming subject to requirements will meet those requirements; and
 3. a statement and plan of how sources not in compliance will achieve compliance;
 - a compliance schedule, including certification reports at least every six months; and
 - certification by a responsible official that the application is true, accurate, and complete.

⁵⁸U.S. EPA, White Paper for Streamlined Development of Part 70 Permit Applications 6 (1995) [hereinafter White Paper Number 1].

⁵⁹42 U.S.C.A. § 7661b(a), CAA § 503(a).

⁶⁰42 U.S.C.A. § 7661b(c), CAA § 503(c); 40 C.F.R. § 70.5(a)(1).

⁶¹42 U.S.C.A. § 7661b(c), CAA § 503(c); 40 C.F.R. § 70.5(a)(2).

⁶²42 U.S.C.A. § 7651g(d), CAA § 408(d); 40 C.F.R. § 70.5(a)(1)(iv).

⁶³40 C.F.R. § 70.5(a)(1)(iii).

⁶⁴40 C.F.R. § 70.5(c).

EPA's White Paper Number 1, released on July 10, 1995, offers guidance as to how each of these requirements can be met.⁶⁵ For example, the guidance "enables and encourages" the use of:

- tons per year (tpy) estimates for emissions units only where meaningful and these may be based on generally available information rather than new studies or testing;
- emissions descriptions rather than estimates for emissions not regulated at the source (unless required for fee calculations, permit shield, major source determinations, or plantwide applicability determinations);
- checklists for emissions from insignificant activities;
- exclusions for trivial or insignificant activities;
- group treatment for certain activities;
- the operating permit process to reconcile existing NSR and federally enforceable terms with the Title V permit;
- citations for applicable requirements with qualitative descriptions for emissions units; and
- certifications of compliance status which do not require re-evaluation of previous applicability decisions.⁶⁶

Permit revision applications need only contain information relevant to the change.⁶⁷

"Unless the permitting authority requests additional information or otherwise notifies the applicant of incompleteness within 60 days of receipt of the application, the application shall be deemed complete."⁶⁸ The applicant has a duty to supplement and correct the application when the applicant becomes aware of incorrect information.

The permitting authority has 18 months to act on a completed permit application.⁶⁹ The failure of the permitting authority to act within the specified time period is deemed a final action by the agency and subject to review in state court.⁷⁰ CAA § 503(d) provides an application shield that protects a source from violations for operating without a permit between the time a completed application is submitted and the time a final decision is made by the permitting authority.⁷¹

The requirement of certification by a responsible official⁷² is not a superficial one. This signature is often known as the "designated felon" signature because the responsible official is legally responsible in an enforcement action. Therefore, the responsible official should be someone who understands the Title V process and the judgment calls that underlie the information in the permit.⁷³

• *Conditions.* Under Title V permits, facilities must agree to conditions regarding emissions. The stipulations are based on prohibitions under the state programs that are written into facility permits. One of the main conditions in permits is the prohibition against circumvention. Facilities are not allowed to use any plan, activity, or device to conceal or appear to minimize emissions in order to circumvent any state

⁶⁵U.S. EPA, White Paper for Streamlined Development of Part 70 Permit Applications 6 (1995).

⁶⁶U.S. EPA, White Paper for Streamlined Development of Part 70 Permit Applications 2, 3 (1995).

⁶⁷40 C.F.R. § 70.5(a)(2).

⁶⁸40 C.F.R. § 70.7(a)(4).

⁶⁹40 C.F.R. § 70.7(a)(2).

⁷⁰42 U.S.C.A. § 7661a(b)(7), CAA § 502(b)(7).

⁷¹See 40 C.F.R. § 70.7(b).

⁷²The definition of "responsible official" is found at 40 C.F.R. § 70.2.

⁷³See Shannon S. Broome & Charles H. Knauss, Preparing the Title V Permit Application, in *The Clean Air Act Handbook* 485-86 (Robert J. Martineau & David P. Novello eds., 1998).

or federal regulations. Also, facilities are not allowed to circumvent any emission control devices that are required under the permit. Other prohibitions can include:

- violating any provision of the CAA or regulations;
- operating air emission sources without a permit (with exceptions);
- operating a source out of compliance with emission standards unless authorized by permit;
- open burning (with exceptions);
- falsifying information in permits or reports; and
- creating a nuisance such as odors.

Each state program usually includes prohibitions or conditions such as these, but they can also include other stipulations involving specific areas, such as the burning of used oil. The applicable stipulations should be included in the individual facility's permit.

● *Insignificant Units and Activities.* EPA may approve a list of “insignificant activities and emissions levels” that do not have to be included in a permit application as long as the omitted information is not required for applicable requirement determinations nor for fee calculations.⁷⁴ This policy is a significant exception for many businesses, given the expanded definition of regulated air pollutant. EPA realized that “in many cases these pollutants are emitted in amounts of no significance to air quality management,” and that it would be “unduly burdensome” to require applicants to quantify and account for all emissions.⁷⁵ The compilation of this list is solely the responsibility of the states so that states can address their unique air quality management issues effectively,⁷⁶ although EPA must ultimately approve the list. EPA has published a list of examples of activities that it considers trivial and insignificant to serve as a starting point for states.⁷⁷ The basis for a state's determination that an activity is “insignificant” was a common issue that EPA comments on in appropriate Title V programs, and these activities must still be included in the Title V permit.

● *Generic Applicable Limits.* In addition to specific limitations incorporated into a facility's Title V permit, states also include generic applicable limitations that apply to all sources subject to Title V. One of the most widely used generic limitation is the opacity standard. An opacity standard generally prohibits the visible emission of smoke and other particulate matter. For example, under the Illinois code, visible emissions cannot exceed an opacity of 30%, even during startups and malfunctions.⁷⁸ Another way that states impose generic limitations is through the use of process weight rates. Under the Colorado Air Quality Control Commission Regulations, owners and operators of all manufacturing processes must limit the emissions of particulate matter (and sulfur dioxide if applicable) from the process into the atmosphere depending on the process rate weight of the equipment.⁷⁹ Agencies provide tables containing the process weight rates for facilities to use. The process weight

⁷⁴40 C.F.R. § 70.5(c). This means the information must not be necessary to determine: (1) which requirements apply; (2) whether the source is in compliance with applicable requirements; or (3) whether the source is major. U.S. EPA, White Paper for Streamlined Development of Part 70 Permit Applications 8-9 (1995).

⁷⁵Memorandum from Lydia N. Wegman, U.S. EPA, Definition of Regulated Air Pollutant for Purposes of Title V, at 5 (Apr. 26, 1993).

⁷⁶Memorandum from Lydia N. Wegman, U.S. EPA, Definition of Regulated Air Pollutant for Purposes of Title V, at 6 (Apr. 26, 1993).

⁷⁷U.S. EPA, White Paper for Streamlined Development of Part 70 Permit Applications, at Attachment A (1995).

⁷⁸35 Ill. Admin. Code §§ 212.123(a) & 212.124(a).

⁷⁹5 Colo. Code Regs. § 1001-3 (2002) (Regulation No. 1, § III.C); 5 Colo. Code Regs. § 1001-8 (2002)

rate is generally defined as “the actual weight or engineering approximation thereof of all materials except liquid and gaseous fuels and combustion air introduced into any process per hour.”⁸⁰

● *Trivial Activities.* Pursuant to EPA’s White Paper Number 1, certain activities may be treated as trivial activities and presumptively omitted from Title V permit applications.⁸¹ These activities are presumed to have either no or negligible emissions—much lower than “insignificant” emissions—or are otherwise not correctly Title V. By omitting these trivial activities from the permit application and permit, the facility does not have to count emissions from these activities in their emissions inventories. Based on this list, many states have adopted a list of trivial activities into their air permitting regulations. States can either use the list provided by EPA or modify the list as appropriate since EPA’s list is “intended to exclude many similar activities” from Title V permitting.⁸² The following is a sampling of what EPA considers trivial activities:⁸³

- emissions from mobile sources and landscaping equipment;
- air-conditioning and ventilating units used for human comfort;
- non-commercial food preparation;
- consumer use of office equipment and products;
- janitorial services and laundry activities;
- bathroom vent emissions and tobacco smoking rooms and areas;
- plant maintenance and upkeep activities not associated with manufacturing;
- portable electrical generators;
- hand-held equipment for buffing, polishing, cutting, drilling, etc.;
- storage tanks that will not emit any VOC or HAP;
- vents from continuous emissions monitors and other analyzers;
- equipment used for surface coating, painting, spraying operations that do not emit any VOC or HAP;
- bench-scale laboratory equipment;
- process water filtration systems and demineralizers with water tanks and vents;
- boiler water treatment operations, not including cooling towers;
- fire suppression systems; and
- steam vents and safety relief valves, steam leaks, cleaning operations, sterilizers.

Emissions Inventory

The most onerous task of preparing an operating permit application is completing the emissions inventory, which can take up to one-half of the time needed to prepare the application.⁸⁴ The AP-42 Manual provides emission factors that can be used in calculating PTE, but sources should understand that the AP-42 emission factors

(Regulation No. 6, Part B, § III).

⁸⁰35 Ill. Admin. Code § 211.5250.

⁸¹U.S. EPA, White Paper for Streamlined Development of Part 70 Permit Applications, at Attachment A (1995).

⁸²U.S. EPA, White Paper for Streamlined Development of Part 70 Permit Applications, at Attachment A (1995).

⁸³U.S. EPA, White Paper for Streamlined Development of Part 70 Permit Applications, at Attachment A (1995).

⁸⁴Compiling Inventory Biggest Task in Permit Application, Consultant Says, 26 Env’t Rep. (BNA) 446 (1995).

represent averages.⁸⁵ Quantifying emissions with averages requires balancing the risk of underestimating and possibly violating the permit if there is a corresponding permit limit with overestimating and the payment of higher permit fees and/or subjection to more stringent control requirements. “[S]ources should include disclaimers in the inventory for those results that are calculated and not based on actual measured emissions” that may help serve as evidence in establishing compliance.⁸⁶

Compliance Requirements

States also require facilities to provide compliance-related information in their permit applications. Compliance-related information usually includes a compliance plan, what type of monitoring will be used, and compliance certification.

- *Compliance Plan.* All sources subject to the Title V permitting requirements must submit a compliance plan with its application.⁸⁷ The compliance plan must contain: the compliance status of the source; a statement that the source will continue to comply with requirements it is in compliance with; a statement that the source will timely comply with new requirements; a description of how the source will achieve compliance if there is current noncompliance; and a compliance schedule.⁸⁸ For sources not in compliance with any requirements, the compliance schedule will consist of enforceable actions with milestones for remedial measures that will lead to compliance.⁸⁹ The schedule must include deadlines for the remedial actions and a date for full compliance. This schedule must be at least as strict as any administrative order or judicial consent decree.⁹⁰ Even with a compliance schedule in place a source can still be subject to an enforcement action for violating the underlying requirement. For sources required to have a compliance schedule, the facility must submit certified progress reports to the agency at least every six months according to the compliance schedule.⁹¹

- *Compliance Certification.* Part 70 of the regulations also requires that facilities submit a compliance certification with their permit applications.⁹² Thus, for each applicable requirement, the applicant must certify, under penalty of law, whether or not the source is in compliance. The compliance certification must include: a certification of compliance with all applicable requirements by a responsible corporate official; a statement of the methods used for determining compliance; a schedule for submitting compliance certifications during the permit term; and a statement regarding the compliance status of the source with any enhanced monitoring and compliance certification requirements.⁹³

For certification, a facility must review the CAA, all local, state and federal regulations, all permit requirements, and all SIP provisions to determine which requirements are Title V “application requirements” and whether or not the facility

⁸⁵See Clara G. Poffenberger, The Role of Emission Factors in Permitting and Enforcement, in *The Emission Inventory: Key to Planning, Permits, Compliance, and Reporting* 7-9 (Air & Waste Mgmt., 1996).

⁸⁶Rolf R. von Oppenfeld, Diane M. Evans, & J. Christopher Vamos, Minimizing the Risks Created by an Emissions Inventory, in *The Emission Inventory: Key to Planning, Permits, Compliance, and Reporting* 138 (Air & Waste Mgmt., 1996).

⁸⁷40 C.F.R. § 70.5(c)(8).

⁸⁸40 C.F.R. § 70.5(c)(8)(i), (ii), and (iii).

⁸⁹40 C.F.R. § 70.5(c)(8)(iii)(C).

⁹⁰40 C.F.R. § 70.5(c)(8)(iii)(C).

⁹¹40 C.F.R. § 70.5(c)(8)(iv).

⁹²40 C.F.R. § 70.5(c)(9).

⁹³40 C.F.R. § 70.5(c)(9)(i), (ii), (iii), and (iv).

is in compliance with these applicable requirements. If the facility is not in compliance with all the requirements, then it must submit a compliance plan to meet those requirements, as stated above. Compliance certification will be based on emissions data submitted with the application that demonstrate compliance during a particular time period. If a facility is uncertain whether it will remain in compliance for the permit period, the facility may want to be proactive and submit a compliance plan to implement changes in the future to ensure total compliance.

The compliance certification must be certified by a responsible corporate official who must certify that based on information and belief after reasonable inquiry, the statements and information in the document are true, accurate, and complete.⁹⁴ Under the definitions, a responsible corporate official means:

a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either: (i) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or (ii) the delegation of authority to such representatives is approved in advance by the permitting authority.⁹⁵

Monitoring Requirements

Under the operating permit rules, Title V sources must meet three basic reporting and recordkeeping requirements: periodic monitoring; reporting; and compliance certification. Periodic monitoring is the basic requirement for Title V reporting, while compliance assurance monitoring (CAM) increases the monitoring, reporting, and recordkeeping requirements for major sources subject to the rule.

● *Compliance Assurance Monitoring.* Certain emission units at Title V sources are subject to additional requirements under the CAM rule. Under the final CAM rule, sources must submit a CAM plan for monitoring the performance of pollutant-specific emissions units (PSEUs).⁹⁶ CAM obligations are triggered if the major source satisfies all of the following criteria:

- is subject to a federally enforceable emissions limitation or standard for a pollutant for which the source is major;
- achieves compliance with such emissions limitation or standard by use of a control device;
- has the potential to emit, before controls, an amount greater than or equal to the amount in tons pre-year required for the site to be classified as a major source under Title V; and
- is not otherwise exempt from CAM.⁹⁷

● *Periodic Monitoring.* All Title V sources must conduct periodic monitoring for every applicable requirement using the terms, test methods, units, averaging periods, and statistical methods consistent with the requirements in 40 C.F.R. § 70.6(a)(3). The requirements for periodic monitoring are discussed further in this Article in the permit contents section.

Permit and Application Shields

Permit and application shields allow the facility to submit and have reviewed an

⁹⁴40 C.F.R. § 70.5(d).

⁹⁵40 C.F.R. § 70.2.

⁹⁶U.S. EPA, Compliance Assurance Monitoring, 62 Fed. Reg. 54900 (Oct. 22, 1997) (codified at 40 C.F.R. Part 64).

⁹⁷40 C.F.R. § 64.2(a), (b).

application for a permit without being in violation of operating without a permit. However, this allowance is not automatic and the owner or operator needs to take the necessary steps to obtain a permit or application shield.

- *Application Shield.* If an applicant has submitted a timely and complete application for a Title V permit, and the agency has not yet acted on that permit, the source's failure to have the permit is not a violation of the CAA unless the delay in final action is due to the failure of the applicant to timely submit required information to the permitting authority.⁹⁸ The application shield does not, however, affect the requirement that any source have a preconstruction permit under title I of the Act.⁹⁹ Thus, the application shield will not protect a source that is constructing if the construction requires a preconstruction review permit.

- *Permit Shield.* When a source has a permit, compliance with the permit is deemed compliance with all "applicable requirements" as of the date of permit issuance if: (1) the permit specifically includes and identifies the applicable requirements; or (2) the permitting authority makes an explicit determination that other provisions (referred to in the determination) are not applicable.¹⁰⁰ The permit shall not shield or otherwise lessen the Administrator's authority under § 7603 (emergency orders), liability for previous violations, applicable requirements of the acid rain program, compliance with EPA information requests, or the authority of the director to requirement compliance with new applicable requirements adopted after the permit is issued.¹⁰¹ A permit that does not expressly state that a permit shield exists is presumed not to provide a shield.¹⁰² Therefore, the owner or operator needs to be sure to request a permit shield.

Streamlining Applications

A source may choose to streamline its application and permit by grouping multiple requirements into a single set of terms.¹⁰³ "The overall objective would be to determine the set of permit terms and conditions that will assure compliance with all applicable requirements for an emissions point or group of emissions points so as to eliminate redundant or conflicting requirements."¹⁰⁴ Streamlining an application requires cooperation and mutual assent from both the applicant and the permitting authority. This approach may be used in the initial formulation of the draft permit and as a way to alter an already completed application without a formal amendment.

Streamlining requires a demonstration of adequacy. This adequacy determination is discussed in detail in EPA's White Paper Number 2, but to summarize, the streamlined requirements must assure "compliance with all applicable requirements it subsumes."¹⁰⁵ Streamlining involves an eight-step process for the applicant and permitting authority:

- **Step One—Compare all applicable requirements to be streamlined and those that are currently applicable, distinguishing between compliance, monitoring,**

⁹⁸42 U.S.C.A. § 7661b(d), CAA § 503(d).

⁹⁹40 C.F.R. § 70.5(a)(6).

¹⁰⁰See 42 U.S.C.A. § 7661c(f), CAA § 504(f); 40 C.F.R. § 70.5(f)(1).

¹⁰¹See 42 U.S.C.A. § 7661c(f), CAA § 504(f); 40 C.F.R. § 70.5(f)(3).

¹⁰²40 C.F.R. § 70.5(f)(2).

¹⁰³U.S. EPA, White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program 6 (1996). CAA § 504(a) and (f) provide the legal authority for streamlining. 42 U.S.C.A. § 7661d(a), (f), CAA § 504(a), (f).

¹⁰⁴U.S. EPA, White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program 6 (1996).

¹⁰⁵U.S. EPA, White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program 11 n.9 (1996). The procedures for adequacy determination are discussed, at 8-11.

and work practice provisions.

- Step Two—Determine most stringent emissions standard for each emission unit pollutant combination.
- Step Three—Propose a single set of permit terms to include most stringent emissions limitation and applicable monitoring, reporting, and recordkeeping.
- Step Four—Certify compliance.
- Step Five—Develop a compliance schedule.
- Step Six—Propose a permit shield for streamlined requirements.
- Step Seven—Permitting authority determines adequacy of proposal.
- Step Eight—Permitting authority must note use of streamlining to EPA and the public.¹⁰⁶

Permitting Process

Preparing and evaluating an operating permit is a time consuming and complicated job for both the applicant and the permitting authority. For the permit application, the source must assemble background information and emissions data, develop compliance and monitoring plans, assess past compliance, and anticipate future requirements. Submitting the application is only the beginning because the source should continue to work with the permitting authority during review of the application and drafting of the permit.

Trigger Dates, Due Dates, and the Application Shield

A Part 70 Operating Permit program becomes effective as a matter of law on the date of EPA approval or the EPA promulgation date.¹⁰⁷ After a program becomes effective, sources are given a certain amount of time to apply for a permit. Generally, a permit application must be submitted within 12 months after a source becomes subject to the permit program, though a permitting authority may establish an earlier deadline for application submissions.¹⁰⁸ In addition, a modified source that qualifies as a major source must submit an application within 12 months of commencing operation or earlier if required.¹⁰⁹ A source with a Title V permit that is modified so that it becomes subject to a new program must revise the permit within the specified time frame. However, if the permit prohibits such a modification, the source must obtain the permit revision before commencing operation.¹¹⁰

Title V permits cannot be issued for more than five years except permits for municipal waste incineration units.¹¹¹ When a permit expires, the source's right to operate is terminated unless a timely and complete renewal application has been submitted.¹¹² A source is required to submit its renewal application six months prior to the expiration date, and a state can require an earlier submission but not earlier than 18 months before expiration.¹¹³

After a source submits its permit application or renewal application, the source is covered under the application shield. This means that if a source submits a timely and complete application while it awaits final action by the permitting authority,

¹⁰⁶U.S. EPA, White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program 14-16 (1996).

¹⁰⁷42 U.S.C.A. § 7661a(h), CAA § 502(h).

¹⁰⁸40 C.F.R. § 70.5(a)(1)(i).

¹⁰⁹40 C.F.R. § 70.5(a)(1)(ii).

¹¹⁰40 C.F.R. § 70.5(a)(1)(ii).

¹¹¹40 C.F.R. § 70.6(a)(2).

¹¹²40 C.F.R. § 70.7(c)(1)(ii).

¹¹³40 C.F.R. § 70.5(a)(1)(iii).

the source cannot be held in violation of operating without a permit.¹¹⁴ However, the application shield ceases to apply if the source fails to submit any additional information deemed to be needed to complete the application by the specified deadline.¹¹⁵ If the state does not issue or deny the renewal permit prior to the expiration of the original permit, then the agency can either extend the permit term until the renewal permit is issued or denied, or state that all terms and conditions of the permit, including the permit shield, will remain in effect until the renewal permit is issued or denied.¹¹⁶

Public Notice and Comment and Public Participation

“[A]ll permit proceedings . . . shall provide adequate procedures for public notice including an opportunity for public comment and a hearing on the draft permit.”¹¹⁷ “Adequate procedures” includes notice by publication in general circulation newspapers and by the permitting authority’s mailing list. The notice must identify the source facility and include information regarding how to obtain the draft permit, application, and any other relevant information to the permit process. A hearing is not automatically required, but may be required under certain rules, such as when a specified number of interested parties request a hearing. The permitting authority must provide at least 30 days for public comment on the “draft permit” and give at least 30 days notice prior to any scheduled public hearing.

EPA Opportunity to Object

Under CAA § 505(a)(1), the state permitting authority must transmit to EPA (usually the region office) a copy of the permit application, draft permit, proposed permit, and final permit. Upon an agreement with EPA, a summary of the application and compliance plan may be provided rather than the whole application.¹¹⁸

Section 505(b) governs EPA objections. If EPA determines that the permit does not comply with the CAA or the SIP, then EPA must notify both the state permitting authority and the applicant in writing of its objections. These objections must be made within 45 days of receipt of the “proposed permit.” EPA can also send comments (*i.e.*, suggestions rather than mandates) to the permitting authority, and the permitting authorities’ response is part of the permitting record. If there is no objection, then the permit may be issued by the permitting authority. Within 60 days after this 45-day review period, any person may petition EPA to object to the permit. The petition must “be based only on objections . . . that were raised with reasonable specificity during the public comment period provided by the permitting agency”.¹¹⁹ EPA has 60 days to grant or deny the petition. Any denial is subject to judicial review. Note that a petition itself does not affect the permit if it has already been issued.

A permit may not be issued if EPA objects. The permitting authority must either modify, terminate, or revoke the permit within 90 days.¹²⁰ If this time period passes without such action, EPA may issue or deny the permit. The initial 90-day period may be extended for another 90 days if EPA determines that further information is

¹¹⁴40 C.F.R. § 70.7(b).

¹¹⁵40 C.F.R. §§ 70.5(a)(2), 70.7(b).

¹¹⁶40 C.F.R. § 70.4(b)(10).

¹¹⁷40 C.F.R. § 70.7(h); *see* 42 U.S.C.A. § 7661b(e), CAA § 503(e).

¹¹⁸40 C.F.R. § 70.8(a).

¹¹⁹42 U.S.C.A. § 7661d(b)(2), CAA § 505(b)(2).

¹²⁰42 U.S.C.A. § 7661d(b)(3), (c), CAA § 505(b)(3), (c).

required.¹²¹ Only the final action to issue or deny a permit is judicially reviewable.

For nonmajor source categories, EPA may waive the § 505 notification requirements.¹²²

Affected State Review

The state permitting authorities must receive and review the Title V permitting applications for completeness and accuracy. Besides providing copies of permit applications to EPA for review, the agency must notify all affected states of each draft permit submitted for public comment. Affected states are states within 50 miles of the permitted source and other adjacent states whose air quality may be affected.¹²³ After reviewing the draft permit, the affected states may make recommendations to the permitting authority, and if the permitting authority does not adopt the recommendations, then the authority must provide its reasoning in writing to the affected state and EPA.¹²⁴

Judicial Review

States that receive approval to run an operating permit program must provide judicial review. In these states, state court review is the sole means of review—no challenges may be brought in federal court except for EPA's failure to veto.¹²⁵ Review is available to the applicant, anyone who participated in the public participation process, and "any other person who could obtain judicial review of such actions under State laws."¹²⁶ This list includes anyone who would have Article III standing under the U.S. Constitution. Challenges to the permit must be filed within 90 days of final permit action or within 90 days of when new grounds arise. This 90-day limit may be shortened by the state. Note that this deadline may arise before completion of a petition to the EPA Administrator for permit review and denial under CAA § 505(b)(2). "Thus, a state court challenge may have to be filed without waiting for an EPA response if the right to judicial review is to be preserved."¹²⁷

In 1994, EPA disapproved Virginia's state permit program for failing to provide for adequate judicial review.¹²⁸ Virginia had attempted to limit judicial review to those who had "pecuniary and substantial" interests. The U.S. Court of Appeals for the Fourth Circuit upheld EPA's disapproval and ruled that the Virginia proposal did not comply with the CAA.¹²⁹

After the expiration of the applicable review provisions for the permit, permit

¹²¹42 U.S.C.A. § 7661d(e), CAA § 505(e).

¹²²40 C.F.R. § 70.8(a)(2).

¹²³40 C.F.R. § 70.2.

¹²⁴40 C.F.R. § 70.8(b)(2).

¹²⁵See 42 U.S.C.A. § 7661a(b)(6), CAA § 502(b)(6). If, after the EPA review period for a permit, any person petitions EPA for failure to object to the permit and EPA denies the petition, the denial may be reviewed in the U.S. Court of Appeals per CAA § 307. Note that the EPA denial will be from the EPA Environmental Appeals Board, to whom the Administrator has delegated petition review authority. See *generally* Nancy Firestone & Elizabeth Brown, *Ensuring the Fairness of Agency Adjudications: The Environmental Appeals Board's First Four Years*, 2 *Envtl. Law* 291, 321 (1996).

¹²⁶40 C.F.R. § 70.4(3)(x).

¹²⁷Arnold W. Reitze Jr., *Air Pollution Control Law: Compliance & Enforcement* 217 (Envtl. L. Inst. 2001).

¹²⁸U.S. EPA, *Clean Air Act Disapproval of Operating Permits Program; Virginia*, 59 *Fed. Reg.* 31183, 31184 (June 17, 1994).

¹²⁹*Virginia v. Browner*, 80 F.3d 869, 26 *Envtl. L. Rep.* (Envtl. L. Inst.) 21245 (4th Cir. 1996). Virginia subsequently received interim approval in 1997.

terms and conditions may not be challenged in a subsequent enforcement action.¹³⁰

General Permits

CAA § 504(d) allows permitting authorities to issue general permits covering numerous similar sources. A source covered under a general permit is still subject to the substantive requirements of 40 C.F.R. Part 70 and must still file an application with the permitting authority.¹³¹ A general permit may not be used for affected sources under the acid rain program.¹³² There must be public participation (i.e., notice and comment) in the formulation of the general permit, but not for a source application under the general permit. The permit program must be submitted to EPA for approval under either SIP or CAA § 112 authority.¹³³ The general permit program must require that:

- general permits apply to a specific and narrow category of sources;
- sources opting for general permit coverage provide notice and reporting requirements;
- general permits restrict PTE through specific and technically accurate limits;
- general permits contain specific compliance monitoring requirement;
- general permit limits are based on practically enforceable averaging times; and
- violations of the general permit are violations of state and federal law and may result in major source coverage.¹³⁴

“The primary purpose . . . is to provide an alternative means for permitting sources for which the procedures of the normal permitting process would be overly burdensome, such as area sources under section 112.”¹³⁵ General permits may be used to cover source categories and small businesses as well as discrete emissions units at industrial complexes and major sources.¹³⁶

EPA has listed three main considerations for sources that desire to be covered under a general permit:

First, categories of sources covered by a general permit should be generally homogenous in terms of operations, processes, and emissions. All sources in the category should have essentially similar operations or processes and emit pollutants with similar characteristics. Second, sources should not be subject to case-by-case standards or requirements. . . . Third, sources should be subject to the same or substantially similar requirements governing operations, emissions, monitoring, reporting, or recordkeeping.¹³⁷

Note that regardless of any permit shield provisions, if a source is later determined to not qualify for the general permit (e.g., submission of false or misleading data), the source is subject to enforcement for operating without an operating permit.¹³⁸ Individual sources may be issued an individual permit or a certification letter by the

¹³⁰U.S. EPA, Final Rule Operating Permits Program, 57 Fed. Reg. 32249, 32265 (July 21, 1992); *Sierra Club v. Georgia Power Co.*, 443 F.3d 1346, 1356 n.15 (11th Cir. 2006).

¹³¹42 U.S.C.A. § 7661c(d), CAA § 504(d); 40 C.F.R. Part 70.6(d).

¹³²40 C.F.R. § 70.6(d)(1).

¹³³Memorandum from Kathie A. Stein, U.S. EPA, Guidance on Enforceability Requirements for Limiting Potential to Emit through SIP and § 112 Rules and General Permits (Jan. 25, 1995).

¹³⁴Memorandum from Kathie A. Stein, U.S. EPA, Guidance on Enforceability Requirements for Limiting Potential to Emit through SIP and § 112 Rules and General Permits (Jan. 25, 1995).

¹³⁵57 Fed. Reg. 32250-01, 32275.

¹³⁶57 Fed. Reg. 32250-01, 32275.

¹³⁷57 Fed. Reg. 32250-01, 32278.

¹³⁸40 C.F.R. § 70.6(d)(1).

permitting authority. Revisions to general permits follow the same revision procedures as other Part 70 permits. Additionally, the issuance or denial of a general permit by the permitting authority to a source is not a “final action” subject to judicial review.¹³⁹

Temporary Sources

A source that changes location at least once during the term of a permit may be eligible for a temporary source permit. This is a “single permit authorizing emissions from similar operations by the same source owner or operator at multiple temporary locations.”¹⁴⁰ Affected sources, however, are not eligible for a temporary source permit. These permits must contain conditions that provide for: (1) compliance with 40 C.F.R. Part 70 requirements; (2) compliance with all applicable requirements at each location; and (3) the owner or operator to notify the permitting authority at least 10 days in advance of a location change.¹⁴¹

Title V Interface With Other Programs

The Accidental Release Prevention Program

Permitting authorities under Title V have certain responsibilities regarding the accidental release prevention program.¹⁴² The Title V permitting authority does not review the adequacy of the accidental release prevention plan but only the content of the plan as required under 40 C.F.R. Part 68. The air permitting authority defined specific responsibilities in 40 C.F.R. § 68.215(e). These are:

- verifying the source has registered a risk management plan;
- verifying the source has submitted a source certification;
- ensuring compliance through records review or inspections; and
- initiating enforcement actions when necessary.

Registering the plan and ensuring compliance through a records review can both be accomplished by accessing EPA’s RMP*Info database, which is available to the implementing agency from EPA. Ensuring source certification is achieved through checking the Title V permit application. The permitting authority may delegate these responsibilities, but “in no circumstance can a permitting authority absolve itself of the responsibility for ensuring that the activities are performed.”¹⁴³ Any fees associated with implementing these responsibilities are recoverable under the Title V fees program.

New Source Review

One of the fundamental principles behind the operating permit program is to put all the source’s requirements into one document. With that goal in mind, permitting authorities may integrate the preconstruction review requirements under NSR into the operating permit.¹⁴⁴ Therefore, if NSR follows the procedural and compliance-related requirements of the operating permit program (e.g., EPA and affected state review), then an “existing [T]itle V permit can be administratively revised to reflect

¹³⁹40 C.F.R. § 70.6(d)(2).

¹⁴⁰40 C.F.R. § 70.6(e).

¹⁴¹40 C.F.R. § 70.6(e).

¹⁴²See Memorandum from Steven J. Hitte, U.S. EPA, on Title V Program Responsibilities Concerning the Accidental Release Prevention Program (Apr. 20, 1999).

¹⁴³U.S. EPA, Frequently Asked Questions and Responses Regarding Title V Program Responsibilities of the Accidental Release Prevention Program (1999).

¹⁴⁴U.S. EPA, Final Operating Permits Program, 57 Fed. Reg. 32249, 32258 (July 21, 1992).

the results of the integrated NSR process.”¹⁴⁵ However, the probability remains high that the NSR program will lack substantially similar requirements, and that the source will require a Title V permit review for its preconstruction permit under NSR.

Hazardous Air Pollutants and § 112

One of the requirements of the state program submittal to EPA is a legal opinion affirming that the state has the authority to implement the CAA § 112 air toxics program.¹⁴⁶ This means the state must be able to accept delegation to impose and enforce MACT, generally achievable control technology, and residual risk analyses. The state must also be capable of implementing case-by-case MACT determinations for sources where EPA fails to issue a categorical standard within 18 months of the deadline. However, sources that *only* emit HAPs may be covered by a general permit, if applicable.

Section 112(g)(2) and (3) states that no person shall construct, reconstruct, or modify a HAP major source without ensuring that the MACT determinations are met and included in the operating permit. As of October 16, 2000, states could enact an “equivalency by permit” program that allows states to include permit terms and conditions that supplant federal HAP standards through the Title V permit.¹⁴⁷

Acid Rain Program

The acid rain provisions in Title IV are to be implemented through the Title V operating permit program in conjunction with the acid rain permit program.¹⁴⁸ For “affected sources” under Title IV, the Title V permit must include prohibitions against emissions beyond the allowances granted in accordance with Title IV, and the operating permit application must include the standardized acid rain forms if applicable. Additionally, permits “issued to implement [Title IV] shall be issued for a period of 5 years, notwithstanding [Title V].”¹⁴⁹ CAA § 403(f) states that allowances “may be received, held, and temporarily or permanently transferred” under the acid rain program regardless of the operating permit as long as the affected unit does not emit more than the allowances grant. Nothing in the Title V provisions may affect allowances for affected units,¹⁵⁰ and the acid rain provisions cannot affect compliance with requirements under other sections of the CAA.¹⁵¹

CAIR and CAMR

The Clean Air Interstate Rule (CAIR)¹⁵² and the Clean Air Mercury Rule (CAMR)¹⁵³ provisions are to be implemented through the Title V operating permit program, similar to the Acid Rain program. Emission reduction requirements begin under CAIR on January 1, 2009 and under CAMR on January 1, 2010, although required monitoring equipment must be in place one year before these dates. Under CAIR, Title V permits must be opened by June 2007 to add these requirements, and states are actively promulgating state rules in 2006 to implement in CAIR and CAMR.

¹⁴⁵U.S. EPA, Final Operating Permits Program, 57 Fed. Reg. 32249, 32259 (July 21, 1992).

¹⁴⁶U.S. EPA, Final Operating Permits Program, 57 Fed. Reg. 32249, 32258 (July 21, 1992).

¹⁴⁷U.S. EPA, Hazardous Air Pollutants: Amendments to the Approval of State Programs and Delegation of Federal Authorities, 65 Fed. Reg. 55810 (Sept. 14, 2000); 40 C.F.R. § 63.94.

¹⁴⁸42 U.S.C.A. §§ 7651g(a), 7661e(b), CAA §§ 408(a), 506(b).

¹⁴⁹42 U.S.C.A. § 7651g(a), CAA § 408(a).

¹⁵⁰42 U.S.C.A. § 7651g(b), CAA § 408(b).

¹⁵¹42 U.S.C.A. § 7651b(f), CAA § 403(f).

¹⁵²70 Fed. Reg. 25162 (May 12, 2006).

¹⁵³70 Fed. Reg. 28606 (May 18, 2006).

Title V Operating Permit Content

Given the extensive list of requirements that Title V permits must address, it is not surprising that the permit contents are considerably more detailed and exacting, particularly on monitoring, recordkeeping, and reporting, than most other permits. This part of the Article examines the detailed content requirements for a Title V permit. Section 504 of the CAA Amendments of 1990 states that:

[e]ach permit issued . . . shall include enforceable emission limitations and standards, a schedule of compliance, a requirement that the permittee submit to the permitting authority, no less often than every 6 months, the results of any required monitoring, and such other conditions as are necessary to assure compliance with applicable requirements of this chapter, including the requirements of the applicable implementation plan.¹⁵⁴

The final rule for the operating permit program enumerates nine requirements for permit content:

- a fixed term or duration;
- limits and conditions to assure compliance with all applicable requirements;
- a schedule of compliance;
- inspection, monitoring, recordkeeping, reporting, and compliance certification requirements to ensure compliance with permit terms and conditions;
- reopening conditions for major sources;
- provisions for permit revision, termination, modification, or reissuance;
- provisions ensuring operational flexibility allowing for minor changes without a “revision” under certain circumstances;
- provision that nothing in the Title V permit affects allowances under the acid rain program; and
- provision that all alternative operating scenarios be identified by the source and included in the permit.¹⁵⁵

Each term or condition in the permit must reference the authority for that term.¹⁵⁶ Additionally, the permit must include standard provisions for inspection and entry, a severability clause, and similar boilerplate language.¹⁵⁷

Emission Limits

Emissions limits in permits “translate generally applicable standards and duties into source-specific emission limitations.”¹⁵⁸ The permit must contain the limitation on emissions as determined by the applicable standard. Applicable standards include, at a minimum, limits imposed by NSPS issued for sources under CAA § 111, sources subject to regulation under the HAP regime in § 112, incineration standards under § 129, limits under the acid rain and ozone sections (Titles IV and VI, respectively), reviews of major sources and new sources for PSD under § 165, limits under the SIPs, and any other applicable standard. The actual numeric limitations are found scattered throughout the *Federal Register*, *Code of Federal Regulations*, and state regulations codified into the SIP. The NAAQS generally are not included in the emissions limitations for major sources; these requirements are implemented through the SIP. NAAQS generally are not “applicable requirements” for Title V operating permit purposes. However, NAAQS and requirements under

¹⁵⁴42 U.S.C.A. § 7661c(a), CAA § 504(a).

¹⁵⁵U.S. EPA, Final Rule Operating Permits Program, 57 Fed. Reg. 32249, 32298 (July 21, 1992).

¹⁵⁶40 C.F.R. § 70.6(a)(1)(i).

¹⁵⁷See 40 C.F.R. § 70.6(a)(5) to (6).

¹⁵⁸David P. Novello, Overview of the Title V Operating Permit Program, in *The Clean Air Act Handbook* 456 (Robert J. Martineau, Jr. & David P. Novello eds., 1998).

visibility standards are considered “applicable requirements” for temporary sources.¹⁵⁹

One issue that frequently arises is differences between currently applicable state law and regulations and those approved for inclusion in the SIP.¹⁶⁰ These differences arise because states and local air pollution control authorities are constantly in the process of revising their regulations and submitting some, but not all, of these revisions to EPA for inclusion in the SIP. In many cases, there will be delays between when a SIP revision is submitted and when EPA approves it.¹⁶¹ Whether a rule is SIP-approved is important because EPA “only recognizes and can only enforce the SIP-approved rules.”¹⁶² How the differences between state law requirements and SIP-approved requirements are handled depends on several factors.

If the permitting authority is only including federally applicable requirements in its Title V permit program, which is permissible, although rare, only the approved SIP language would be included in the permit because the revised state law or regulation is not part of the SIP and hence not a federally enforceable requirement that must be included in the permit. There is no question about state-only requirements because they are not included in the permit under such an approach.

If the permitting authority is including both state and federally applicable requirements in its Title V permit program, which is usually the case, the permitting authority may elect to take one of the following approaches. First, permit authorities may base the permit on the state rule if the rule has been submitted for SIP approval and is equivalent to or more stringent than the currently enforceable SIP requirement.¹⁶³ Second, if the state rule is less stringent than the SIP or differs significantly, then the permit must incorporate the SIP-approved rule *and* the state rule until the state rule is approved in the SIP.¹⁶⁴ Third, if the state rule is not intended to be included in the SIP, or if the permitting authority does not wish to make the state rule federally enforceable, the state rule may be included in the permit and designated a “state-only” condition. As a state-only condition, it would not be enforceable by EPA or citizens groups under the federal CAA. Moreover, these approaches are complicated by the fact that it can often be quite difficult to determine precisely which rules constitute a state’s SIP.

Regardless of the approach taken, the permitting authority must identify the origin and authority for each term and condition included in the permit and identify any differences in the form included in the permit from that set forth in the underlying applicable requirement.¹⁶⁵ Where the applicable SIP or standard allows an “equivalency” determination, the permit must contain provisions to ensure that any resulting emissions limit has been demonstrated to be quantifiable, accountable, enforceable and based on replicable procedures.¹⁶⁶ Finally, where other applicable requirements under the federal CAA are more stringent than acid rain provisions

¹⁵⁹57 Fed. Reg. at 32564.

¹⁶⁰U.S. EPA, White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program 3 (1996).

¹⁶¹While delays are typically less than 18 months in most regions, it is not unknown for a program revision to be pending for years.

¹⁶²U.S. EPA, White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program 2 (1996).

¹⁶³U.S. EPA, White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program 3 (1996).

¹⁶⁴U.S. EPA, White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program 3 (1996).

¹⁶⁵40 C.F.R. § 70.6(a)(1)(i).

¹⁶⁶40 C.F.R. § 70.6(a)(1)(iii).

under Title IV, the permit must include both as federally enforceable conditions.¹⁶⁷

Permit Duration

An operating permit under Title V may be issued for a term up to five years.¹⁶⁸ For affected sources under the acid rain program of Title IV, the permit shall issue for a five-year term.¹⁶⁹ Solid waste incinerators subject to regulation under CAA § 129(e) may have an operating permit for a period up to 12 years, with a review every five years.¹⁷⁰ Prior to permit expiration, a source should submit an application for permit renewal.

Monitoring, Recordkeeping, and Reporting

The permit content requirements for monitoring, recordkeeping, and reporting are found at 40 C.F.R. § 70.6(a)(3).¹⁷¹ Emissions units at sources are often subject to different requirements under different emissions regulations, and the monitoring requirements of each standard to which the source is subject must be included in the permit.¹⁷²

These monitoring requirements break down into three major divisions: (1) monitoring required by a specific applicable requirement, such as an NSPS, NESHAP, or SIP provision; (2) CAM applicable to certain large emissions units using control devices; and (3) periodic monitoring or “gap-filling” requirements where there is either no monitoring or inadequate monitoring in the applicable requirement(s) and CAM does not apply.

Monitoring, Recordkeeping, and Reporting Required by an Applicable Requirement

The Title V program is very clear that all monitoring and testing requirements set forth in an applicable requirement must be specified in the permit.¹⁷³ If more than one monitoring or testing recordkeeping or reporting requirement applies to a particular emissions unit or operation, sources and permitting authorities have the option of “streamlining” those requirements. Streamlining is permissible if the new, single set of monitoring or testing requirements “is adequate to assure compliance to least to the same extent as the monitoring or testing applicable requirements that are not included in the permit as a result of such streamlining.”¹⁷⁴ Streamlining is often used for opacity standards (where visible emissions observation for a lower opacity standard gives clear assurance that a higher opacity standard is also being met) and other standards to minimize duplicative monitoring, recordkeeping, and reporting.

Compliance Assurance Monitoring

Compliance assurance monitoring or CAM applies to emissions units that, before controls, have potential emissions in excess of the applicable “major source” threshold. CAM is authorized by § 504(b) of the federal CAA. The applicability of CAM, the development of a CAM plan, and related issues are discussed below.

Some standards require little or no testing, such as certain NSPSs or SIP provisions, although they may have a testing reference method. In these cases, the

¹⁶⁷40 C.F.R. § 70.6(a)(1)(ii).

¹⁶⁸42 U.S.C.A. § 7661a(b)(5)(B), CAA § 502(b)(5)(B); 40 C.F.R. § 70.6(a)(2).

¹⁶⁹42 U.S.C.A. § 7651g(a), CAA § 408(a); 40 C.F.R. § 70.6(a)(2).

¹⁷⁰40 C.F.R. § 70.6(a)(2).

¹⁷¹The statutory authority exists at 42 U.S.C.A. § 7661c(b), CAA § 504(b).

¹⁷²See 40 C.F.R. § 70.6(3)(i)(A).

¹⁷³40 C.F.R. § 70.6(a)(3)(i)(A).

¹⁷⁴40 C.F.R. § 70.6(a)(3)(i)(A).

permit must require some form of periodic monitoring, even if noninstrumental testing or monitoring is involved, and recordkeeping itself may satisfy the monitoring requirement.¹⁷⁵ CAM satisfies the periodic monitoring requirements.

The permitting authority maintains broad discretion in establishing these periodic monitoring requirements.¹⁷⁶ Continuous emissions monitoring is not required under Title V if “alternative methods are available that provide sufficiently reliable and timely information for determining compliance.”¹⁷⁷ The permit may also allow streamlining of the monitoring requirements as long as the monitoring or testing assures compliance.¹⁷⁸ Testing requirements must be EPA approved. For insignificant emissions units,¹⁷⁹ if a regular program of monitoring would not “significantly enhance” compliance assurance, then no monitoring is required.¹⁸⁰

The permit must include all recordkeeping requirements. Records for monitoring must include:

- the date, place, and time of sampling or measurements;
- the date analyses were performed;
- who performed analyses;
- analytical techniques or methods used;
- results of analyses; and
- operating conditions at the time of sampling or measurement.¹⁸¹

Reports of monitoring must be submitted at least every six months, and records must be retained for five years. Any deviation from permit requirements must also be reported in these six-month reports, and all of these reports and records must be signed and certified by a responsible official.

On October 22, 1997, EPA published the CAM rule.¹⁸² The CAM rule is designed to fulfill monitoring requirements contained in Title V (and Title VII).¹⁸³ Sources subject to the rule must follow established criteria in monitoring the operation and maintenance of control equipment so as to provide reasonable assurance of compliance with applicable emission standards, and report to state and local regulators whether or not they are in compliance. The CAM requirements satisfy the periodic monitoring requirements.

• *Applicability.* Whether a facility is subject to the CAM rule is determined on a pollutant-by-pollutant basis for each “emissions unit” (*i.e.*, to each pollutant-specific emissions unit, or PSEU). The CAM rule adopts by reference the Part 70 definition of “emissions unit” to mean “any part or activity of a stationary source that emits or has the potential to emit any regulated pollutant or any pollutant listed under section 112(b) of the Act [Hazardous Air Pollutants].”¹⁸⁴

In addition, the CAM rule only applies to those PSEUs that use a “control device”

¹⁷⁵40 C.F.R. § 70.6(a)(3)(i)(B).

¹⁷⁶U.S. EPA, White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program 32 (1996).

¹⁷⁷42 U.S.C.A. § 7661c(b), CAA § 504(b).

¹⁷⁸40 C.F.R. § 70.6(a)(3)(A).

¹⁷⁹U.S. EPA, White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program 29 n.21 (1996).

¹⁸⁰U.S. EPA, White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program 32 (1996).

¹⁸¹40 C.F.R. § 70.6(a)(3)(ii)(A).

¹⁸²See U.S. EPA, Compliance Assurance Monitoring, 62 Fed. Reg. 54900 (Oct. 22, 1997) (codified at 40 C.F.R. Part 64); U.S. EPA, Technical Guidance Document: Compliance Assurance Monitoring (1998).

¹⁸³See 42 U.S.C.A. §§ 7414(a)(1), (a)(3), 7661b, 7661c, CAA §§ 114(a)(1), (a)(3), 503, 504.

¹⁸⁴40 C.F.R. §§ 64.1, 70.2.

to achieve compliance with an “applicable emission limitation or standard.” The rule narrowly defines “control device” to mean “equipment, other than inherent process equipment, that is used to destroy or remove air pollutant(s) prior to discharge in the atmosphere,” while “applicable emission limitation or standard” is broadly defined to mean “any applicable requirement that constitutes an emission limitation, emission standard, standard of performance, or means of emission limitation as defined under the Act.”¹⁸⁵ However, CAM requirements do not apply to inherent process equipment “necessary for the proper or safe functioning of the process, or material recovery equipment.”¹⁸⁶ In order to determine if the equipment is not a control device, the owner or operator must determine if:

1. the primary purpose of the equipment is to control air pollution;
2. the material recovery equipment makes economic sense or is it so costly that it would be deemed a pollution control device; and
3. the equipment would still be installed if there were no air quality regulations in place.

If the equipment is not primarily for air pollution control, it is cost effective, and it would still be installed even without the regulations, then it is inherent process equipment and not subject to the CAM requirements. Further, if the unit can reset its emission limit without the control device, then it is also not subject to CAM. Other CAM exemptions include emissions limits promulgated after November 15, 1990, under the NSPS or NESHAP programs, the federal acid rain program, and for minor sources under Title V.¹⁸⁷ However, “applicable requirement” parallels the Title V definition and therefore limits the CAM rule to federally enforceable requirements.¹⁸⁸

As stated previously, units using control devices must have “potential pre-control device emissions” equal to or greater than the applicable major source threshold. Note that any emission reductions achieved by the control device are not taken into account, even if the owner or operator generally is allowed to do so under the regulatory definition of “potential-to-emit.”¹⁸⁹ However, enforceable operating hour restrictions, throughput restrictions, control device efficiency factors, and similar enforceable restrictions are taken into account. These restrictions may help a unit escape the CAM applicability threshold.

To summarize, sources that satisfy all of the following criteria are subject to CAM:

- the source is subject to Part 70 or Part 71 for any pollutant (i.e., major source);
- the emissions unit is subject to a limitation or standard for the applicable regulated air pollutant (or a surrogate thereof) for which the source is major;
- the emissions unit uses a control device to achieve compliance with any such emission limitation or standard;
- the emissions unit has “potential pre-control device emissions” required to classify the unit as a major source; and
- the emissions unit is not otherwise exempt from CAM.¹⁹⁰

The CAM rule also provides several exemptions with respect to certain emission limitations or standards for which the underlying requirements already establish

¹⁸⁵ 40 C.F.R. § 64.1.

¹⁸⁶ 40 C.F.R. § 64.1.

¹⁸⁷ 40 C.F.R. § 64.2(a)(3) & (b)(1).

¹⁸⁸ 40 C.F.R. § 64.1.

¹⁸⁹ See 40 C.F.R. § 64.2(a)(3).

¹⁹⁰ 40 C.F.R. § 64.2.

adequate monitoring and with respect to certain municipally owned utility units. The exempted emission limitations or standards are as follows:

- emission limitations or standards proposed by EPA after November 15, 1990, under the NSPS or HAPs programs;
- Title VI stratospheric ozone protection requirements;
- Title IV acid rain program requirements;
- requirements that apply solely under an approved emissions trading program;
- emission cap requirements under Title V; or
- emission limitations or standards for which a Title V permit specifies a continuous compliance determination method that does not use an assumed control factor.

The CAM rule also exempts backup utility power emissions units¹⁹¹ that are municipally owned if the owner or operator provides documentation in a Title V operating permit application that:

- the utility unit is exempt from all monitoring requirements in 40 C.F.R. Part 75;
- the utility unit is operated for the sole purpose of providing electricity during periods of peak electrical demand or emergency situations and will be operated consistent with that purpose throughout the permit term; and
- the utility unit's actual emissions, based on the average annual emissions over the last three years of operation (or shorter time period for units with fewer than three years of operation), are less than 50% of the amount in tons per year required for a source to be classified as a major source and are expected to remain so.

• *CAM Plan Requirements.* The CAM rule requires owners and operators to develop and propose, through the Title V permit process, a CAM plan that satisfies specified criteria. An owner or operator must submit two general categories of information with a Title V permit application to propose a CAM plan: general information necessary to justify the appropriateness of the proposed monitoring; and information to justify the appropriateness of the indicator ranges to be used for reporting exceedances or excursions.¹⁹² A CAM plan must contain:

- monitoring designed to obtain data for one or more indicators of emission control performance for the control device, any associated capture system and, if necessary, processes at a PSEU;
- an appropriate range or designated condition for each selected indicators such that operation within the range provides a reasonable assurance of ongoing compliance with emission limitations or standards for the anticipated range of operating conditions (including the detection of any bypass of the control device to the atmosphere);
- specifications for obtaining data that are representative of the monitored emissions or parameters;
- for new or modified monitoring equipment, verification procedures to confirm the operational status of the monitoring prior to the required monitoring commencement date;
- quality assurance and control practices that are adequate to ensure the continuing validity of the data;
- specifications for the frequency of monitoring, data collection procedures, and, if applicable, the period over which discrete data points will be averaged for

¹⁹¹See 40 C.F.R. § 72.2.

¹⁹²See 40 C.F.R. § 64.4.

the purpose of determining whether an excursion or exceedance has occurred;

- a justification for the proposed elements of the monitoring (some monitoring systems are presumptively acceptable such as continuous emission monitoring systems (CEMS), continuous opacity monitoring systems (COMS), and predictive emission monitoring systems (PEMS));
- control device (and process and capture system, if applicable) operating parameter data obtained during an applicable compliance or performance test (or its equivalent); and, if necessary,
- an implementation plan for installing, testing, and operating the monitoring.¹⁹³

The three basic elements of the CAM plan are the background information, the monitoring approach, and the justification. The background information provides information on the PSEUs including a brief description of the unit, applicable emission limit or standard, the applicable pollutant, and existing monitoring requirements under other programs.¹⁹⁴ The description of the monitoring approach in the CAM plan should include the general criteria, the performance criteria, and any special criteria. The general criteria include any performance indicators and/or indicator ranges along with the device for measuring the indicator.¹⁹⁵ The performance criteria include data representativeness, verification of operational status, quality assurance and quality control procedures, monitoring frequency, and data collection procedures.¹⁹⁶ Sources using a CEMS, COMS, or PEMS must include the applicable indicators, indicator ranges, performance criteria, and exceedance reporting procedures as special criteria.¹⁹⁷ The owner or operator has to justify the choice of monitoring approach in the CAM plan by including information to demonstrate that the selected monitoring plan meets the requirements of the CAM rule. The justification must demonstrate that the control devices and processes achieve compliance with applicable emission limits and are maintained to minimize emissions.¹⁹⁸ The justification step can be simplified by selecting a monitoring method based on EPA guidance, which is then considered as “presumptively acceptable monitoring.”¹⁹⁹

Potentially acceptable monitoring methodologies for complying with CAM requirements can include CEMS, COMS, and PEMS. EPA suggests a five-step approach for selecting a monitoring method:

1. summarize current monitoring procedures;
2. evaluate current monitoring procedures to determine if they meet CAM criteria;
3. determine if current monitoring procedures can be modified to meet CAM criteria;
4. identify potential monitoring approaches that meet CAM criteria; and
5. select the most reasonable approach that meets CAM criteria.²⁰⁰

EPA has released technical guidance on CAM that includes examples of the types of monitoring that can be used to satisfy CAM requirements for various control devices

¹⁹³See 40 C.F.R. §§ 64.3, 64.4.

¹⁹⁴See 40 C.F.R. § 64.4.

¹⁹⁵40 C.F.R. § 64.3(a).

¹⁹⁶40 C.F.R. § 64.3(b).

¹⁹⁷40 C.F.R. § 64.3(d).

¹⁹⁸40 C.F.R. § 64.4(b).

¹⁹⁹40 C.F.R. § 64.4(b).

²⁰⁰U.S. EPA, Technical Guidance Document: Compliance Assurance Monitoring 2-21 to 2-23 (Aug. 1998).

and emission units, and provides case studies from actual situations.²⁰¹

If monitoring problems develop under the CAM plan, the owner or operator must take corrective action to restore proper operation. If there are too many corrective actions or if the source falls outside the monitoring range for extended periods (EPA has suggested 5% of measurements), then the source must develop a quality improvement plan (QIP) to improve the quality of the monitoring data or correct control equipment failure.²⁰² The Title V permit may include circumstances that will trigger a QIP requirement, or EPA or a state agency may require a QIP based on available documentation or other information regarding CAM operation and maintenance.

CAM plans should be submitted with either the Title V permit application or the permit renewal depending on the unit size and the schedule in the regulations.²⁰³ Large PSEUs, units whose PTE exceeds the major source threshold with emission controls operating, must submit the plan with the initial permit if the application has not been submitted by April 20, 1998.²⁰⁴ Otherwise, if the source had an operating permit or complete application before April 20, 1998, the CAM submittal requirement is deferred until permit renewal.²⁰⁵ However, the CAM plan submittal can also be required prior to renewal if the source applies for a significant modification to the permit or significantly modifies a pending application after the April 20, 1998, date.²⁰⁶ All other small emission units subject to CAM do not have to submit plans until the renewal of the operating permits.²⁰⁷ The operating permit must also include the CAM plan requirements including the monitoring approach, data availability requirements, indicator ranges, and a statement concerning the obligations to do monitoring, reporting and recordkeeping.²⁰⁸ The CAM plan itself typically is not included in the permit.

● *Reporting and Recordkeeping Requirements.* Title V reports that involve CAM must include summary data on the number, duration, and cause of: excursions from indicator ranges; emission limitation exceedances; any corrective actions taken; and monitor downtime incidents (other than those associated with zero and span or other daily calibration checks).²⁰⁹ In addition, the report must document QIP implementation and completion activities, if applicable.²¹⁰

In addition to the general recordkeeping required by Title V, the owner or operator must maintain records of monitoring data, and monitor performance data, corrective actions taken, any written QIP and related implementation activities, and other supporting information required to be maintained under CAM (e.g., data used to document the adequacy of monitoring, records of monitoring maintenance, or corrective actions).²¹¹

It is important to note that operation outside of the prescribed indicator ranges (*i.e.*, an exclusion) may not mean that the unit is in violation or has exceeded its

²⁰¹U.S. EPA, Technical Guidance Document: Compliance Assurance Monitoring 2-21 to 2-23 (Aug. 1998).

²⁰²40 C.F.R. § 64.8.

²⁰³40 C.F.R. § 64.5.

²⁰⁴40 C.F.R. § 64.5(a)(1).

²⁰⁵40 C.F.R. § 64.5(a)(3).

²⁰⁶40 C.F.R. § 64.5(a)(2).

²⁰⁷40 C.F.R. § 64.5(b).

²⁰⁸40 C.F.R. §§ 64.4, 70.6(a)(3)(A).

²⁰⁹40 C.F.R. § 64.9(a).

²¹⁰40 C.F.R. § 64.9(a).

²¹¹40 C.F.R. § 64.9(b).

permit limit.

Periodic Monitoring

A source's operating permit must contain all emissions monitoring and analysis procedures or test methods based on any applicable requirements. If an applicable requirement, such as NSPS, does not require periodic testing or monitoring, the permit must require monitoring sufficient to yield reliable results that are representative of compliance with permit terms and conditions.²¹² The permit must also contain requirements covering use, maintenance, and installation of the monitoring equipment.²¹³ If monitoring shows a deviation from permit terms, the owner or operator must report the deviation promptly to the permitting agency.²¹⁴ In addition, facilities must keep all monitoring records for five years from the time of generation and also keep records of calibration and maintenance where required.²¹⁵ If an emission unit is subject to the CAM rule, then the CAM requirements can also be used to satisfy the periodic monitoring requirements.

● *EPA's Periodic Monitoring Guidance and Litigation.* On September 15, 1998, EPA issued its periodic monitoring guidance for state and local permitting authorities to use in evaluating whether sufficient monitoring is contained in each facility's federal operating permit to assure compliance with regulations developed to meet CAA requirements.²¹⁶ Under the guidance, the permitting authority evaluates whether monitoring, including recordkeeping, reporting, or periodic testing, applies to the emissions unit in question under existing applicable requirements for that unit. If the already-required monitoring is sufficient to yield reliable data from the relevant time period and is representative of the source's compliance with a particular applicable requirement, then no further monitoring (for that applicable requirement at that emission unit) is required in the permit. If additional monitoring is required, the permitting authority will consider the following factors (as well as any others that may apply on a case-by-case basis) to determine the appropriate periodic monitoring methodology:

- the likelihood of violating the applicable requirement (i.e., the margin of compliance with the applicable requirement);
- whether add-on controls are necessary for the unit to meet the emission limit;
- the variability of emissions from the unit over time;
- the type of monitoring, process, maintenance, or control equipment already available for the emission unit;
- the technical and economic considerations associated with the range of possible monitoring methods; and
- the kind of monitoring found on similar emission units.

On April 14, 2000, however, the D.C. Circuit ruled that EPA violated the Administrative Procedure Act by seeking to expand monitoring activities under the CAA through the use of guidance rather than a rule.²¹⁷ The decision states that nothing in EPA's existing Title V operating permit regulations gives state authorities a "roving commission to pore over existing [s]tate and federal standards, to decide which are deficient, and to use the permit system to amend, supplement,

²¹²40 C.F.R. § 70.6(a)(3)(i)(B).

²¹³40 C.F.R. § 70.6(a)(3)(i)(C).

²¹⁴40 C.F.R. § 70.6(a)(3)(iii)(B).

²¹⁵40 C.F.R. § 70.6(a)(3)(ii)(B).

²¹⁶U.S. EPA, Periodic Monitoring Guidance, available at <http://www.epa.gov/Region7/programs/artd/air/title5/t5memos/pmguide.pdf>.

²¹⁷See *Appalachian Power Co. v. EPA*, 208 F.3d 1015, 1026, 30 Env'tl. L. Rep. (Env'tl. L. Inst.) 20560 (D.C. Cir. 2000).

alter or expand the extent and frequency of testing already provided.”²¹⁸ The ruling sets aside EPA’s periodic monitoring guidance in its entirety and specifically says that states cannot use the guidance or EPA’s existing operating permit regulations to “conduct more frequent monitoring of its emissions than that provided in the applicable state or federal standard, unless that standard requires no periodic testing, specifies no frequency, or requires only a one-time test.”²¹⁹ Periodic monitoring is thus applicable in only three specific circumstances:

- no periodic monitoring (recordkeeping in lieu of monitoring) is required;
- a test method, but no frequency is specified; or
- only a one-time test is required.

In the wake of this decision, EPA rejected two Title V permits for not containing sufficient monitoring.²²⁰ Instead of relying on the vacated “periodic monitoring” provisions, EPA argued that the “umbrella” monitoring provisions of 40 C.F.R. § 70.6(c)(1) required additional monitoring if the existing monitoring was not sufficient to assure compliance.²²¹ In other words, EPA opened that periodic monitoring could be used where a permit did not contain any monitoring, and the umbrella monitoring provision could be used where a permit contained insufficient monitoring, as determined by the permitting authority. In 2002, EPA proposed to codify this interpretation,²²² but reversed its position and in a final rule in 2004, stated that those were not separate regulatory standards, and therefore, the umbrella provisions could not be used to supplement monitoring meeting the periodic monitoring requirements.²²³ EPA’s final rule was challenged, and the D.C. Circuit vacated the final rule for failure to comply with the Administrative Procedure Act. The court held that the final rule was not a “topical outgrowth” of the proposed rule.²²⁴ Accordingly, the Title V monitoring requirements are still evolving.

Compliance Plan and Schedule Requirements

The compliance plan and schedule requirements should generally mirror the requirements found in the permit application at 40 C.F.R. § 70.5(c)(8). This includes:

- a description of the compliance status of the source;
- a description of the applicable requirements and statements affirming existing and future compliance;
- a compliance schedule that denotes existing compliance, states that requirements becoming effective during the term of the permit will be timely met, and for sources that are not in compliance, a schedule of enforceable remedial measures and milestones; and
- submission of progress reports.

²¹⁸*Appalachian Power Co. v. EPA*, 208 F.3d 1015, 1025, 30 Env’tl. L. Rep. (Env’tl. L. Inst.) 20560, 20564 (D.C. Cir. 2000).

²¹⁹*Appalachian Power Co. v. EPA*, 208 F.3d 1015, 1028, 30 Env’tl. L. Rep. (Env’tl. L. Inst.) 20560, 20565 (D.C. Cir. 2000).

²²⁰In the Matter of PacifiCorp’s Jim Bridger and Naughton Electric Utility Steam Generating Plants, Petition No. VIII-00-1 (Nov. 16, 2000), <http://www.epa.gov/region07/programs/artd/air/title5/petitiondb/petitions/woc020.pdf>; In the Matter of Fort James Camas Mill, Petition No. X-1999-1 (Dec. 22, 2000), http://www.epa.gov/Region7/programs/artd/air/title5/petitiondb/petitions/fort_james_decision_1999.pdf.

²²¹40 C.F.R. § 70.6(c)(1) states that each Title V permit must contain “compliance certification, testing, monitoring, reporting, and recordkeeping requirements sufficient to assure compliance with the terms and conditions of the permit.”

²²²67 Fed. Reg. 58561 (Sept. 17, 2002).

²²³69 Fed. Reg. 3202 (Jan. 22, 2004).

²²⁴*Environmental Integrity Project v. EPA*, 425 F.3d 992 (D.C. Cir. 2005).

Note that a compliance *plan*, as described in § 503(b),²²⁵ is required to be included in the permit application, but not in the permit itself.²²⁶ However, the permit must contain a compliance plan in accordance with 40 C.F.R. § 70.5(c)(8), which requires the compliance status of the source and statements that compliance will continue and will be met. If a source is in noncompliance, then the source must provide a narrative description of how it will achieve compliance.²²⁷

EPA expects that CAM data will provide owners or operators with reliable data to reach a conclusion about their compliance status. However, note that CAM data does not replace but merely supplements the Title V certification requirement. CAM data does not necessarily provide unequivocal proof of compliance or noncompliance. CAM excursions or exceedances may raise questions about compliance status, but may not conclusively confirm that a source is in noncompliance. Such occurrences only indicate a need to review the compliance information provided in order to determine what, if any, compliance or enforcement action is warranted.

Progress reports for compliance schedules are due at least every six months. These progress reports should include dates, milestones, and achievements required under the compliance schedule and an explanation and corrective action measures if any dates were missed.²²⁸

Compliance certifications are due at least annually. This certification identifies the specific terms or conditions, the testing methods used to determine compliance, and the status of compliance for that term or condition.²²⁹ This certification should also identify any deviations, exceptions, or exceedances that occurred during the compliance period. Some states have developed forms for use in these certifications.

Under 40 C.F.R. § 70.6(c), the permit must contain conditions that permit entry and inspection to the location of the permitted source and where the records are kept. The permit must also allow, at reasonable times, access and copying of records, sampling or monitoring, and inspection of “facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit.”²³⁰

“Any document (including reports) required by a part 70 permit shall contain a certification by a responsible official” for truth, accuracy, and completeness after reasonable inquiry.²³¹

Permit Fees

Title V was designed to be self-funding. CAA § 502(b)(3)(A) provides that the source shall pay an “annual fee . . . sufficient to cover all reasonable (direct and indirect) costs required to develop and administer the permit program requirements”.²³² The costs should cover modeling, monitoring, analyses, preparing guidance, preparing emissions inventories and tracking, and review of permits. The collected fees may be used only for permit program costs. Regulated pollutants for fee determinations include: (1) VOCs; (2) pollutants regulated under NSPS or the air toxics program (§§ 111 or 112); and (3) criteria pollutants (except carbon

²²⁵This section requires a plan “describing how the source will comply with all applicable requirements.” 42 U.S.C.A. § 7661b(b)(1), CAA § 503(b)(1).

²²⁶U.S. EPA, Final Rule Operating Permits Program, 57 Fed. Reg. 32249, 32254 to 32255 (July 21, 1992).

²²⁷40 C.F.R. § 70.5(c)(8)(ii)(c).

²²⁸40 C.F.R. § 70.6(c)(4).

²²⁹40 C.F.R. § 70.6(c)(5).

²³⁰40 C.F.R. § 70.6(c)(2)(iii).

²³¹40 C.F.R. § 70.6(c)(1); see 40 C.F.R. § 70.5(d).

²³²42 U.S.C.A. § 7661a(b)(3)(A).

monoxide).²³³

The CAA provides that a state program providing for a \$25 per ton fee is presumed acceptable, while a state program using a lesser fee must demonstrate its reasonableness.²³⁴ Due to political pressure, many states adopted the \$25 fee minimum rather than conducting an analysis of actual costs.²³⁵ In fact, early evidence indicated that many states effectively subsidize the permitting program costs because the fees charged are inadequate to cover the costs.²³⁶ Note that the \$25 per ton minimum does not necessarily mean an actual charge of \$25 per ton.²³⁷ “The State is not required to assess fees on any particular basis and can use application fees, service-based fees, emissions fees based on either actual or allowable emissions, other types of fees, or any combination thereof.”²³⁸ For purposes of assessing adequacy, while EPA will accept other approaches, states may avail themselves of the presumption only if “it would result in the collection and retention of an amount not less than \$25 per year [as adjusted . . .] times the total tons of the actual emissions of each regulated pollutant (for presumptive fee calculation) emitted from part 70 sources.”²³⁹

States may exclude from fee calculations:

- actual emissions from affected sources under the Title IV program;
- actual emissions exceeding 4000 tons per year;
- pollutants regulated solely under § 112(r);
- actual emissions already included in minimum fee calculation; and
- insignificant quantities of actual emissions not required to be listed in the permit.²⁴⁰

“No exemption is created for such pollutants which a particular source emits but for which the source is not in fact subject to a specific regulatory requirement. On the other hand, no fees are required from other ‘regulated air pollutants’ as defined more expansively in [40 C.F.R.] § 70.2 in making the \$25/tpy test.”²⁴¹ The exemption for affected sources under the acid rain program does not automatically exclude utilities from permit fees.²⁴² States have discretion in imposing fees on utilities, although EPA will not count those fees towards the state’s fee recovery requirement.

The fee schedule is adjusted to the consumer price index.²⁴³ The \$25 fee is no longer \$25. The new presumptive minimum fee as of 2000 is \$34.87 for Part 70 permits,²⁴⁴ and \$36.07 for Part 71 permits.²⁴⁵

²³³ 42 U.S.C.A. § 7661a(b)(3)(B)(ii), CAA § 502(b)(3)(B)(ii).

²³⁴ 42 U.S.C.A. § 7661a(b)(3)(B)(i), CAA § 502(b)(3)(B)(i); 40 C.F.R. § 70.9(b)(2)(I).

²³⁵ Arnold W. Reitze, Jr., *Air Pollution Control Law: Compliance and Enforcement* (Envtl. L. Inst. 2001).

²³⁶ See U.S. General Accounting Office, *Air Pollution-Difficulties in Implementing a National Air Permit Program* 29-31 (1993).

²³⁷ For example, South Dakota charges \$6.10 per ton annually for a regulated pollutant, Indiana charges \$33 per ton annually, and Maryland charges the \$25 adjusted for the consumer price index.

²³⁸ U.S. EPA, *Final Rule Operating Permits Program*, 57 Fed. Reg. 32250-01, 32292 (July 21, 1992).

²³⁹ 40 C.F.R. § 70.9(b)(2)(i).

²⁴⁰ 40 C.F.R. § 70.9(b)(2)(ii).

²⁴¹ 57 Fed. Reg. 32250-01, 32292.

²⁴² 57 Fed. Reg. at 32564; see 42 U.S.C.A. § 7651g(c)(4), CAA § 408(c)(4).

²⁴³ 40 C.F.R. § 70.9(b)(2)(iv).

²⁴⁴ Memorandum from Jeff Herring, U.S. EPA, *Correction to Part 70 Presumptive Minimum Fee Effective from September 2000 through August 2001* (Dec. 22, 2000). See Memorandum from Jeff Herring, U.S. EPA, *Annual Adjustment of Presumptive Minimum Fee for 40 CFR Part 70 and 40 CFR Part 71* (Sept. 18, 2000).

Permit Shield

If a source is in compliance with its permit, it is considered to be in compliance with all applicable requirements of the CAA if the requirements are included in the permit and with any requirements specifically stated in the permit as not applicable.²⁴⁶ A permit shield is not automatically granted. Its existence must be explicitly stated in the permit itself.²⁴⁷ The permit shield provisions are used to ensure stability and certainty in the permitting process, as the purpose of the permit is to provide a single resource enumerating all legal obligations and requirements.

Requirements and terms must be included in the permit to be protected. This includes negative declarations of requirements that do not apply.²⁴⁸ If the permit is silent regarding a requirement and it is later determined that the source has not complied with that requirement, the source is in violation.²⁴⁹ Therefore, requirements enacted after the permit was issued are not included in a permit shield. This also means that a provision specifically identified in the permit but amended subsequent to permit issuance is not covered by the shield because the amended regulation could not have been contemplated in the permit issuance.²⁵⁰ It is clearly imperative to identify all the requirements that do *and* do not apply to a source and include those in the permit for maximum coverage and protection.

Streamlined permits should fall under the protection of the permit shield, and “when the source complies with the streamlined requirement, the source will be considered to be in compliance with all of the applicable requirements subsumed under the streamlined requirement.”²⁵¹

Limitations

The permit shield is available at the discretion of the permitting authority. EPA has adopted a “narrow” interpretation of the permit shield coverage,²⁵² and it is not as protective nor as certain as the permit shield offered under the Clean Water Act.

Sources seeking to obtain or renew a part 70 permit cannot be shielded from enforcement actions alleging violations of any applicable requirements (including orders and consent decrees) that occurred before, or at the time of, permit issuance. In addition, sources may not be shielded from requests for information pursuant to section 114 of the Act. The EPA has also provided that the shield will not extend to minor permit modifications.²⁵³

²⁴⁵Memorandum from Jeff Herring, U.S. EPA, Correction to the Part 71 Presumptive Minimum Fee for Calendar Year 2001 (Dec. 22, 2000). See Memorandum from Jeff Herring, U.S. EPA, Annual Adjustment of Presumptive Minimum Fee for 40 CFR Part 70 and 40 CFR Part 71 (Sept. 18, 2000).

²⁴⁶42 U.S.C.A. § 7661c(f), CAA § 504(f); 40 C.F.R. § 70.6(f).

²⁴⁷40 C.F.R. § 70.6(f)(2).

²⁴⁸40 C.F.R. § 70.6(f)(1)(ii).

²⁴⁹“[O]nly requirements that have been reviewed by the permitting authority and identified as such in the permit can be shielded against.” U.S. EPA, Final Rule Operating Permits Program, 57 Fed. Reg. 32250-01, 32277 (July 21, 1992).

²⁵⁰U.S. EPA, Final Rule Operating Permits Program, 57 Fed. Reg. 32249, 32277 (July 21, 1992).

²⁵¹U.S. EPA, White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program 8 (1996).

²⁵²57 Fed. Reg. 32250-01, 32278. “Put simply, a broad shield would effectively abrogate specific Congressional mandates such as section 112 requirements . . . and would significantly handicap States in their planning for effectiveness of new requirements designed to meet other Congressional goals.”

²⁵³57 Fed. Reg. 32250-01, 32255; see 40 C.F.R. § 70.6(f)(3).

The permit shield also does not cover acid rain requirements under Title IV,²⁵⁴ nor does it cover off-permit changes,²⁵⁵ administrative amendments, or certain emerging provisions.²⁵⁶

Operational Flexibility

One of the greatest concerns of industry was the ability to respond to market dynamics under a structured permit regime. CAA § 502(b)(10) directs EPA to develop provisions that allow a source to make changes as long as the changes do not result in changes under Title I (i.e., the NAAQS) nor result in emissions greater than allowed in the original permit. Provisions allowing for operational flexibility are codified at 40 C.F.R. § 70.4(b)(12). They include two mandatory and one optional manner of providing operational flexibility. Other permit flexibility tools include anticipated alternative operating scenarios and off-permit changes.

Section 502(b)(10) Changes

Section 502(b)(10) requires the federally approved operating permit program to include:

Provisions to allow changes within a permitted facility . . . without requiring a permit revision, if the changes are not modifications under any provision of subchapter I of this chapter and the changes do not exceed the emissions allowable under the permit (whether expressed therein as a rate of emissions or in terms of total emissions). *Provided*, [t]hat the facility provides the Administrator and the permitting authority with written notification in advance of the proposed changes which shall be a minimum of 7 days, unless the permitting authority provides in its regulations a different time frame for emergencies.²⁵⁷

The Part 70 regulations repeat this basic requirement verbatim²⁵⁸ and lay out additional procedural steps. First, the regulations repeat the requirement that the proposed change cannot be a modification under any provision of Title I of the CAA, which includes PSD, major source NSR, NSPS, and presumably modifications under the Part 61 NESHAPs.²⁵⁹ Second, the notice required to the Administrator and the permitting authority must include “a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change,” which covers situations, for example, where a permitted emissions unit is removed from service.²⁶⁰ A copy of this notification must be attached to the permit and the regulations provide that the permit shield will not cover such changes.²⁶¹

Anticipated Alternative Operating Scenarios

The regulations provide that “reasonably anticipated operating scenarios” be included in the permit.²⁶² This allows facilities to identify optional scenarios and remain in compliance with the law. Terms and conditions required under the regulations relating to anticipated alternative operating scenarios include: (1) recording in the source’s log the switch to an alternative operating scenario; (2) the possible

²⁵⁴40 C.F.R. § 70.6(f)(3)(iii).

²⁵⁵40 C.F.R. §§ 70.6(b)(14)(iii), 70.7(e)(2)(vi).

²⁵⁶40 C.F.R. § 70.6(f)(3).

²⁵⁷42 U.S.C.A. § 7661a(b)(10), CAA § 502(b)(10).

²⁵⁸40 C.F.R. § 70.4(b)(12).

²⁵⁹40 C.F.R. § 70.4(b)(12)(i).

²⁶⁰40 C.F.R. § 70.4(b)(12)(i)(A).

²⁶¹40 C.F.R. § 70.4(b)(12)(i)(B).

²⁶²40 C.F.R. § 70.6(a)(9).

extension of the permit shield to cover the alternative operating scenario; and (3) the alternative operating scenario must meet all applicable requirements in the permit.

EPA proposed to clarify aspects of the use of the alternative operating scenarios in a proposed rule in August 1995. The proposed definition included a limitation that the alternative scenarios be limited to those the facility is “designed to accommodate.”²⁶³ However, in a draft version of operating permit rule revisions released on February 18, 1998, EPA stated it was deleting the “designed to accommodate” language and that it “believes that new units or modifications should be eligible for advance approval as alternative operating scenarios where the State NSR program allows it and where the permitting authority approves the alternative scenario(s) as such.”²⁶⁴ Taking this approach one step further, EPA set forth criteria for “advance approvals” in their draft operating permits program in White Paper Number 3.²⁶⁵

An advance approval incorporates terms allowing specified future changes without additional approval or revisions.²⁶⁶ There are many potential uses for advance approvals, including “the addition of specific new process units, modifications to existing units, or even for the addition or modification of units which are not specifically known but which are within a described category of changes.”²⁶⁷

Off-Permit Changes

An off-permit change is a potentially powerful tool for a source. States may allow changes to sources that are “not addressed or prohibited” in the permit without a permit revision under three conditions.²⁶⁸

- each change does not cause a violation of any permit term or condition;
- sources provide EPA with contemporaneous written notice of each change and a description of the change; and
- the change is not covered under the permit shield.

Changes made under this provision are not subject to regulation or review until permit renewal. This option is strictly a state program. If a state chooses to prohibit off-permit changes as a matter of state law, then that prohibition is not federally enforceable.²⁶⁹ If a change is made, the source must record the changes made and the resulting emissions of a regulated air pollutant not included in the permit.²⁷⁰

EPA has proposed to eliminate the off-permit change provision.²⁷¹ The general view is that anything not included in the permit is disallowed. EPA relies on CAA § 504(a)’s language that operating permits “assure compliance with applicable requirements”.²⁷² EPA therefore holds that the best way to assure compliance is to require a permit revision or reopening for changes. However, until this proposal is

²⁶³U.S. EPA, Proposed Rule Operating Permits Program and Federal Operating Permits Program, 60 Fed. Reg. 45529, 45565 (Aug. 31, 1995).

²⁶⁴U.S. EPA, Preamble to Revised Part 51 and Part 70: Draft, at 19 (Feb. 18, 1998).

²⁶⁵U.S. EPA, Design of Flexible Air Permits (2000) (draft for review and comment released on Aug. 7, 2000).

²⁶⁶U.S. EPA, Design of Flexible Air Permits 10 (2000).

²⁶⁷U.S. EPA, Design of Flexible Air Permits 10 (2000).

²⁶⁸40 C.F.R. § 70.4(b)(14).

²⁶⁹40 C.F.R. § 70.4(b)(14).

²⁷⁰40 C.F.R. § 70.4(b)(14)(iv).

²⁷¹U.S. EPA, Proposed Rule Operating Permits Program and Federal Operating Permits Program, 60 Fed. Reg. 45530, 45533 (Aug. 31, 1995).

²⁷²42 U.S.C.A. § 7661c(a).

finalized, the off-permit changes can still provide a great degree of operational flexibility for sources.

Emissions Trading and Emissions Caps

Permitting authorities are required under the regulations to include a provision in the permit that no permit revision is necessary for emissions trading.²⁷³ Under 40 C.F.R. § 70.4(b)(12), two schemes exist to allow flexibility in emissions trading. One is optional and may be imposed at the permitting authority's discretion, while the second is mandatory and must be made available.

● *Under the SIP.* If the SIP authorizes facility emissions trading, then the source may trade emissions within a facility without a permit revision and with seven-days notice.²⁷⁴ The written notification must include, at a minimum:

- a description of the change;
- when the change will occur;
- any change in emissions;
- the permit requirements the source will comply with under the SIP emissions trading provisions;
- the SIP provisions the source will comply with; and
- the pollutants emitted.²⁷⁵

The permit shield does not cover the SIP trading program because EPA views the requirements as belonging to the SIP rather than the permit.²⁷⁶

“The effect is to give a source some of the same flexibility as if the SIP prescribed a single overall emission limit for the entire facility.”²⁷⁷ However, the usefulness of this provision is limited to the willingness of a state to revise the SIP to allow this sort of trading.

● *Under a Federally Enforceable Emissions Cap.* A permitting authority must allow emissions trading “in the permitted facility solely for the purpose of complying with a federally-enforceable emissions cap that is established in the permit independent of otherwise applicable requirements.”²⁷⁸ The applicant must request that the permit contain such terms, and the permit application must propose “replicable procedures and permit terms that ensure the emissions trades are quantifiable and enforceable.”²⁷⁹ Note that the standards must be federally enforceable; a state can use state law to regulate more stringently and is not required to allow the same flexibility.²⁸⁰ The notification requirement is substantially the same as emission trading under the SIP—requiring seven days notice and several specific items that must be included in the notice.

Typically this provision is not used to meet applicable requirements but rather to avoid meeting other potentially applicable requirements.²⁸¹ For example, if a source meets the major source definition for Title V purposes with emission of 100 tpy but wants to avoid new source review, with a threshold amount of 250 tpy, then the source may adjust emissions levels within the source at emission units through

²⁷³40 C.F.R. § 70.6(a)(8).

²⁷⁴40 C.F.R. § 70.4(b)(12)(ii).

²⁷⁵40 C.F.R. § 70.4(b)(12)(ii)(A).

²⁷⁶U.S. EPA, Final Rule Operating Permits Program, 57 Fed. Reg. 32249, 32268 (July 21, 1992).

²⁷⁷John-Mark Stensvaag & Craig N. Oren, *Clean Air Act: Law and Practice* 14-176 (1994).

²⁷⁸40 C.F.R. § 70.4(b)(12)(iii).

²⁷⁹40 C.F.R. § 70.4(b)(12)(iii).

²⁸⁰John-Mark Stensvaag & Craig N. Oren, *Clean Air Act: Law and Practice* 14-178 (1994).

²⁸¹See James T. O'Reilly et al., *Clean Air Permitting Manual* 16-59 (1997).

trading and remain under the permitted cap, which would be between 100 and 250 tpy.

However, this flexibility may be lost if the emissions increase triggers Title I modification requirements. It is also possible that the trigger for PSD and NSR is low enough that the emissions increase would not shield the source from permit modification requirements. With the increasing use and adoption of plantwide applicability limits under the PSD and NSR programs, this provision will be of decreasing utility.

Because the provisions for emissions trading under this section are explicitly authorized in the permit, the permit shield applies.

Emergency Provisions

An emergency situation constitutes an affirmative defense against a permit exceedance.²⁸² “Emergency” is defined as:

any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.²⁸³

In addition, the emergency defense need not extend to *all* technology-based standards. However, most technology-based standards incorporate a start-up, shutdown, and malfunction exception to the standards. Note that the emergency provision applies to technology-based standards and not health-based standards. This approach is justified because the emergency provisions are meant to handle the contingency of technological failures, and health-based standards are “formulated largely without regard to the limits of technology.”²⁸⁴

Conclusion

Title V permits can be complicated and time consuming to complete. Many different programs and regulations can be required to be included in a Title V permit. The goal of the Title V program is to have all the source’s requirements contained in one permit. Accordingly, the Title V program process can often be overwhelming, especially for inexperienced persons. The intention of this section was to provide a detailed review of the Title V program and the contents of a Title V permit. However, this review should not substitute for reading and understanding the actual Title V permit program regulations. Sources required to submit a Title V permit should carefully read all the applicable state and federal regulations and consult an experienced environmental attorney for further assistance.

V. NEW SOURCE REVIEW*

§ 12:88 Introduction

²⁸²40 C.F.R. § 70.6(g).

²⁸³40 C.F.R. § 70.6(g)(1).

²⁸⁴U.S. EPA, Final Rule Operating Permits Program, 57 Fed. Reg. 32250-01, 32279 (July 21, 1992); see generally *Natural Resources Defense Council v. EPA*, 859 F.2d 156, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20016 (D.C. Cir. 1988) (under the Clean Water Act, water quality-based limitations not tied to technological limitations).

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The Clean Air Act, as amended,¹ sets four air quality goals, among others: (1) attainment and maintenance of national ambient air quality standards (NAAQS); (2) the prevention of significant deterioration (PSD) in clean air areas; (3) the preservation of natural visibility in our major national parks and wilderness areas; and (4) the avoidance of significant risks from hazardous air pollutants.² The Act prescribes mainly two means for achieving those goals: state implementation plans (SIPs) and federal emission standards.³ Both of these mechanisms apply to new sources of pollution—and indeed they must in order to work, for the nation’s capital stock is constantly changing and growing. In particular, § 110, the blueprint for SIP content, requires each SIP to contain a program for the “regulation of the modification and construction of any stationary source,” including specialized permit programs for areas still experiencing NAAQS violations and for PSD areas.⁴ Sections 111 and 112 call upon EPA to create federal limitations on emissions from new stationary sources.⁵ And Title II of the Act sets, and requires EPA to set, federal limits on tailpipe emissions from new mobile sources.⁶

This section focuses only on the § 110 requirements for new source review (NSR) programs. It first describes the history of those requirements. It then turns to the current specifics, which now appear primarily in EPA regulations and guidance.

The section does not review the content of the various SIPs, but only the federal superstructure. Each SIP currently contains a NSR program. In some cases the program is simple and unified, and in others, complex and multi-layered. The practitioner, in dealing with a specific problem, should go beyond this section to the specific content of the relevant SIP, and even beyond that to the interpretations of that content by the relevant state officials. The NSR regulations that have found their way into the SIPs are often intricate, surprisingly ambiguous, and ornately encrusted with state and federal lore and precedent. The practitioner should also double-check his or her key findings with those in the Environmental Protection Agency (EPA) regional office who cover the relevant state program to be sure their views are not different.⁷

§ 12:89 History—The Clean Air Act Amendments of 1970

When Congress overhauled the Clean Air Act in 1970, it required each SIP to contain a “procedure” for the preconstruction review of “the location of new sources to which a standard of performance [under § 111] will apply” for the purpose of

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¹The most recent amendments occurred on November 15, 1990, when President Bush signed the Clean Air Act Amendments of 1990 into law. While these amendments comprehensively overhauled the Act, they left the basic structure of the new source review system as it was. The changes in that system are substantial but not fundamental.

²See Clean Air Act §§ 110, 160–69, 169A, and 112, 42 U.S.C.A. §§ 7410, 7470–79, 7491, and 7412, respectively. These goals and their relationship to each other, and to goals in EPA’s other statutes, are discussed in Chapter 2. For more detailed discussion of the NAAQS, see § 12:1; for toxic air pollutants, see § 12:58.

³See, e.g., Clean Air Act §§ 110, 202, 42 U.S.C.A. §§ 7410, 7521; §§ 12:8 and 12:58.

⁴Clean Air Act § 110(a)(2)(C), 42 U.S.C.A. § 7410(a)(2)(C).

⁵Clean Air Act §§ 111, 112, 42 U.S.C.A. §§ 7411, 7412.

⁶See, e.g., Clean Air Act § 202, 42 U.S.C.A. § 7521.

⁷EPA has prepared a digest of new source review guidance material consisting of letters and memoranda covering many of the key topics in this subject area. New Source Review Prevention of Significant Deterioration and Nonattainment Area Guidance Notebook, EPA Office of Air Quality Planning and Standards, Vols. I and II, Jan. 1988; Vol. III (update), July 1991. This guidance material and more recent material are available on a computer bulletin board maintained by EPA (OAQPS), known as the “Technology Transfer Network.” (1-919-541-5742.)

preventing the construction of any such source which, because of its location, would prevent attainment and maintenance of a NAAQS.¹ About nine months later, EPA gave birth to regulations that elaborated on this requirement in terms that seem rudimentary today.² The regulations simply called for “procedures” through which a state would: (1) determine whether “any” new source would violate the SIP or interfere with attainment or maintenance of a NAAQS; and (2) bar construction of any source that would do either. Though rudimentary, these regulations went beyond the statute by requiring review of any source at all (the technology-forcing § 111 standards applied only to selected categories of new sources) and by requiring a review of likely SIP compliance.³ In addition, EPA established a pattern that has held true ever since. NSR consists of a two-step assessment of a source’s design: first, in relation to an existing emission limitation, such as a SIP limit, a Clean Air Act section 111 standard (new source performance standard, or NSPS), or a determinable limitation such as “lowest achievable emission rate” (LAER); and second, in relation to air quality. In the jargon of the trade, the first is a “technology” review and the second an “ambient impact” assessment.

The states subsequently submitted SIPs, including NSR procedures, and EPA generally approved them on May 31, 1972.⁴ In a few instances, EPA disapproved the NSR procedure in whole or in part.⁵ Later EPA promulgated federal NSR regulations under § 110(c) to fill these gaps.⁶ Thus, by mid-1973, each state had an operative NSR program in its SIP.

At about the same time, EPA revised its original guidance regulations.⁷ The main change that is still relevant was the addition of requirements for public participation in the review process.⁸ These revised regulations are still on the books at 40 C.F.R. §§ 51.160–51.163.⁹

Meanwhile, however, a dramatic decision by the federal District Court for the

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¹Pub. L. No. 91-604, § 4(a), 84 Stat. 1676, 1680–81 (1970).

²36 Fed. Reg. 15486, 15489, 15493 (1971), codified at 42 C.F.R. §§ 420.11(a)(4), 420.18. EPA subsequently recodified these provisions into 40 C.F.R. Part 51. *See* 36 Fed. Reg. 22369, 22400, 22404 (1971), codified at 40 C.F.R. §§ 51.11(a)(4), 51.18. EPA’s Part 51 regulations apply to states, as opposed to sources, inasmuch as they elaborate on Clean Air Act section 110; in contrast, the Part 52 regulations incorporate the SIPs (largely by reference), and hence govern source behavior, as opposed to state planning. These original NSR regulations now appear at 40 C.F.R. § 51.160. *See* 51 Fed. Reg. 40656, 40669 (1986).

³EPA originally proposed to require not merely an NSR procedure of some sort, but a permit program. 36 Fed. Reg. 6680, 6682, 6685 (1971) (40 C.F.R. §§ 420.11(a)(4), 420.18). Indeed, it proposed to lay out a prototype permit program in an appendix. 36 Fed. Reg. 6688 (1971) (Appendix B, § 1.1). But, in response to comments, EPA retreated from this aspect without explanation. 36 Fed. Reg. 15486 (1971). 38 Fed. Reg. 15486 (1973).

⁴37 Fed. Reg. 10842 (1972).

⁵*See, e.g.*, 37 Fed. Reg. 10853 (1972) (40 C.F.R. § 52.233). In 1976, EPA reported that it had approved the NSR procedure in all but six SIPs. 41 Fed. Reg. 55525 (1976).

⁶*E.g.*, 38 Fed. Reg. 12705 (1973), codified at 40 C.F.R. § 52.129(c) (Arizona); 40 C.F.R. § 52.233(f), (g) (California).

⁷38 Fed. Reg. 15834 (1973).

⁸*Compare* 38 Fed. Reg. 15836 (1973) *with* 36 Fed. Reg. 22404 (1971). The requirement for a program of review of “indirect sources”—facilities that attract mobile sources and hence indirectly emit certain pollutants—has since been countermanded by § 110(a)(5) of the Act, 42 U.S.C.A. § 7410(a)(5). *See* § 12:118.

⁹*See* 51 Fed. Reg. 40656 (1986) (housecleaning amendment that renumbered and streamlined all of Part 51). EPA proposed to amend the original NSR regulations further in 1975, 40 Fed. Reg. 28629 (1975), but nothing ever came of that proposal directly. EPA merged it into a proposal relating to the 1976 Offset Ruling. *See* 41 Fed. Reg. 55558, 55559 (1976).

District of Columbia had set EPA on the course of creating a NSR permitting program for PSD purposes. On June 2, 1972, just at the time that EPA was acting on the SIPs generally, the court granted the motion by plaintiffs in *Sierra Club v. Ruckelshaus* for a preliminary injunction requiring EPA to review each SIP, to disapprove any that failed to prevent significant deterioration, and to promulgate any necessary PSD programs.¹⁰ The court held, solely on the basis of the seemingly precatory “protect and enhance” language in Clean Air Act section 101(b)(1) and a short passage in the legislative history, that Congress intended each SIP to contain a PSD program. Subsequently, the D.C. Circuit and the Supreme Court affirmed; the latter, however, by an equally divided court.¹¹

As a result of this decision, EPA first disapproved the SIP of every state for lack of a PSD program¹² and then, in 1975, after two rounds of proposal and comment,¹³ promulgated a specialized NSR program into each SIP as a PSD program.¹⁴

This PSD program was simple in concept. It required any new source or modification belonging to one of eighteen industrial categories to have a permit from EPA in order to be constructed.¹⁵ To obtain a permit, an applicant had to show that the project would meet an emission limitation reflecting the application of “best available control technology” (BACT) for sulfur dioxide (SO₂) and particulate matter (PM) and would not cause or contribute to a violation of the applicable limits on air quality deterioration.¹⁶ The regulations equated BACT, for any project already subject to a NSPS, with that NSPS; for other projects, it gave EPA the task of setting BACT on a case-by-case basis.¹⁷ The regulations established limits on air quality deterioration only for SO₂ and PM and then only for clean air areas. It used an area classification scheme for doing so: Class I areas were subject to tight limits on deterioration over a baseline; Class II areas to moderate limits over the baseline; and Class III areas only to the relevant NAAQS. EPA initially classified all clean air areas as Class II, but authorized procedures through which states, federal land managers, and Indian tribes could obtain reclassifications.¹⁸ Finally, the regulations gave EPA the power to delegate its functions in whole or in part to state agencies.¹⁹

EPA subsequently amended these PSD regulations on two occasions in minor ways,²⁰ and the regulations as amended were upheld by the D.C. Circuit in *Sierra Club v. EPA* in August 1976.²¹

At about the same time, EPA was turning its attention to an emerging NSR

¹⁰*Sierra Club v. Ruckelshaus*, 344 F. Supp. 253, 2 Env'tl. L. Rep. (Env'tl. L. Inst.) 20262 (D.D.C. 1972); 38 Fed. Reg. 18986 (1973).

¹¹*Sierra Club v. Ruckelshaus*, 2 Env'tl. L. Rep. (Env'tl. L. Inst.) 20656 (D.C. Cir. 1972) (per curiam), aff'd by an evenly divided Court sub nom *Fri v. Sierra Club*, 412 U.S. 541, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20684 (1973). For a critique of the role of the courts in the development of the PSD program, and a sensitive exposition of the history of that development, see Melnick, *Regulation and the Courts* 71-112 (1983).

¹²37 Fed. Reg. 23836 (1972).

¹³38 Fed. Reg. 18986 (1973); 39 Fed. Reg. 31000 (1974).

¹⁴39 Fed. Reg. 42510 (1974).

¹⁵39 Fed. Reg. 42516 (1974) (40 C.F.R. § 52.21(d)(1)).

¹⁶39 Fed. Reg. 42516 (1974) (40 C.F.R. § 52.21(d)(2)).

¹⁷39 Fed. Reg. 42516 (1974) (40 C.F.R. § 52.21(d)(2)(ii)), 39 Fed. Reg. 42514 (1974) (40 C.F.R. § 52.01(f)).

¹⁸39 Fed. Reg. 42515 (1974) (40 C.F.R. § 52.21(c)).

¹⁹39 Fed. Reg. 42517 (1974) (40 C.F.R. § 52.21(f)).

²⁰See 40 Fed. Reg. 25004, 42011 (1975).

²¹*Sierra Club v. EPA*, 540 F.2d 1114, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20669 (D.C. Cir. 1976). The actual operation of the pre-1977 PSD regulations, as opposed to their creation, generated only one major controversy, a wrestling match between the Northern Cheyenne Indian Tribe and a consortium of

problem, namely, whether states could issue permits to sources that would contribute to concentrations still in excess of the NAAQS. The SIPs that EPA had approved in May 1972 generally were supposed to produce attainment within three years, by mid-1975. But by early 1976, it had become apparent that many SIPs had failed to do this. In response, EPA called upon states to upgrade their SIPs²² and, in December 1976, issued its “Interpretative Ruling for Implementation of the Requirements of 40 C.F.R. 51.18” to deal with the NSR issue.²³

This “Offset Ruling,” which EPA billed as “an articulation of the minimum requirements for preconstruction review of new sources pursuant to” the original NSR regulations,²⁴ provided that a permitting authority may approve the construction of a major source or modification that would exacerbate an existing NAAQS violation only if: (1) the project is subject to LAER; (2) its emissions have been more than offset by reductions elsewhere so as to produce reasonable progress toward attainment and a net air quality benefit; and (3) all of the existing sources owned or controlled by the owner or operator of the proposed project are in compliance with the SIP.²⁵ The Offset Ruling also provided that, for major sources in areas subject to a SIP call, “permits granted on or after January 1, 1979 must specify that the source may not commence construction until EPA has approved or promulgated a SIP revision for the area.”²⁶

§ 12:90 History—The Clean Air Act Amendments of 1977

In 1977, Congress overhauled the Clean Air Act, partially in response to the widespread persistence of NAAQS violations and the flowering of a federal PSD program.¹ Congress added several major provisions to the Act that both required each SIP to contain specialized permit programs for nonattainment and PSD purposes and specified the content of those programs in great detail.

In response to the failure of the original SIPs to bring about attainment, Congress called upon EPA to designate each area of the country “nonattainment,” “attainment,” or “unclassifiable” for each NAAQS according to the actual status of the area in 1977.² It then called upon each state with a nonattainment area to submit by January 1979 such SIP revisions as would: (1) assure attainment in its nonattainment areas as expeditiously as practicable but no later than certain, fixed deadlines, generally December 31, 1982; and (2) establish “reasonably available control technology” (RACT) for existing stationary sources and a permitting program for new ones.³ This permitting program, as outlined by then new section 173, was to contain, like

northwestern electric utilities over the location of a huge power plant in Colstrip, Montana, near abundant coal fields, but also near the Tribe’s reservation. The Tribe got EPA to reclassify the reservation to Class I. The utilities attempted to avoid PSD review by claiming a “grandfather” exemption. Then, when they sought a permit, the parties differed over its terms. Eventually, the utilities got a stringent permit and built the plant. This controversy is reflected in two court decisions: *Nance v. EPA*, 645 F.2d 701, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20526 (9th Cir. 1981); *Montana Power Co. v. EPA*, 608 F.2d 334, 9 Env’tl. L. Rep. (Env’tl. L. Inst.) 20667 (9th Cir. 1979).

²²See, e.g., 41 Fed. Reg. 27999 (1976).

²³41 Fed. Reg. 55524, 55528 (1976). EPA solicited comment on many of the features of the Offset Ruling at the same time. *Id.*

²⁴41 Fed. Reg. 55525 (1976).

²⁵41 Fed. Reg. 55528 to 55529 (1976).

²⁶41 Fed. Reg. 55529 (1976).

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¹Pub. L. No. 95-95, 91 Stat. 685 (1977).

²Pub. L. No. 95-95 § 103, 91 Stat. 687-88 (1977) (new Clean Air Act section 107(d)).

³Pub. L. No. 95-95 § 129(c), 91 Stat. 750-51 (1977); Pub. L. No. 95-95 § 129(b), 91 Stat. 745-50 (1977) (new Clean Air Act §§ 172, 173).

the Offset Ruling, requirements for LAER, offsets, and state-wide compliance.⁴ To encourage each state to submit the necessary revisions, Congress further directed in then new Clean Air Act section 110(a)(2)(I) that each SIP was to contain a ban on construction of major new sources that would come into effect on July 1, 1979, unless the state had submitted those revisions and received full approval from EPA.⁵ Prior to the adoption of a permit program under the new § 173 or July 1, 1979, whichever came sooner, the Offset Ruling was to continue to govern new source growth.⁶ In short, Congress adopted essentially the remedy for nonattainment areas that EPA had developed through its SIP calls and Offset Ruling.

Similarly, Congress engrafted on to the Act, in the form of a new Part C, an express PSD program for attainment and unclassifiable areas. This program followed the basic contours of the PSD program that EPA had established in 1974.⁷ For instance, the statutory program, like the EPA program, defined significant deterioration for sulfur dioxide and particulate matter in terms of area classifications and increments over a baseline and relied principally on a permit program applicable to major sources and modifications to keep air quality at acceptable levels.⁸ The statutory PSD program, however, was in several ways more stringent than its

⁴Pub. L. No. 95-95 § 129(b), 91 Stat. 748 (1977). The legislative history indicates that Congress regarded this rigorous new source review program as a key solution to the failure to the original SIPs to bring about attainment:

A major weakness in implementation of the 1970 Act has been the failure to assess the impact of emissions from new sources of pollution on State plans to attain air quality standards by statutory deadlines. States have permitted growth on the assumption that a deadline was sufficiently distant so that future emissions reductions could be made to compensate for the initial increases. It can now be seen that these assumptions were wrong. Some mechanism is needed to assure that before new or expanded facilities are permitted, a State demonstrate that these facilities can be accommodated within its overall plan to provide for attainment of air quality standards.

S. Rep. No. 95-127, 95th Cong., 1st Sess. 55 (1977). *See also* 3 Env'tl. Pol'y Div., Cong. Research Serv., Senate Comm. on Pub. Works, A Legislative History of the Clean Air Act Amendments of 1977, 93d Cong., 2d Sess. 716-17 (Comm. Print 1978) (elaboration on this theme by Senator Muskie, a chief sponsor during Senate debates) [hereinafter cited as Legislative History].

⁵Pub. L. No. 95-95 § 108(b), 91 Stat. 694 (1977). Congress also created a construction ban for a failure to implement a SIP, as opposed to a failure to submit an adequate SIP revision. This ban gave EPA authority to issue an order banning construction of a major source in a nonattainment area, or seek a court order banning it, if EPA first finds that the state "is not acting in compliance" with the Offset Ruling or any of the SIP provisions required by the 1977 amendments for nonattainment areas. *See* Pub. L. No. 95-95 § 111(a), 91 Stat. 704 (1977); Pub. L. No. 95-95 § 111(a)(3), 91 Stat. 704-05 (1977). Later, as part of technical amendments to the Act, Congress added another ban for a failure to implement. This one was an aspect of § 173 permitting; according to that section, the permitting authority may issue a permit only if "the applicable implementation plan is being carried out for the nonattainment area in which the proposed source is to be constructed." Pub. L. No. 95-190, § 14(a)(58), 91 Stat. 1393, 1403 (1977). The Clean Air Act, by virtue of the 1990 amendments, still contain construction bans for failures to plan and to implement, but those bans are now dependent on exercises of discretion by EPA. *See* Clean Air Act §§ 173(a)(4), 179, 42 U.S.C.A. §§ 7503(a)(4), 7509. *See* note 105.1.

⁶Pub. L. No. 95-95, § 129(a)(1), 91 Stat. 745.

⁷Pub. L. No. 95-95 § 127(a), 91 Stat. 731-41 (1977). The purposes Congress had in mind for the statutory PSD program were: (1) to protect the air quality over areas, such as national parks, that have special recreational, scenic or historic value; (2) to minimize the exposure of the public to any air pollution, on the theory that even levels of pollution below the NAAQS might be harmful; (3) to assure that significant consumption of the clean air resources of each state occurs only after careful evaluation and informed public participation; (4) to minimize long-range transport of pollutants and hence acid deposition and visibility degradation; and (5) to maximize the ability of states wishing to maintain good air quality to compete for industrial expansion with other states without needing to sacrifice air quality. *See* Clean Air Act § 160, 42 U.S.C.A. 7470; H.R. Rep. No. 294, 95th Cong., 1st Sess. 103-38 (1977); H.R. Rep. No. 1175, 94th Cong., 2d Sess. 412 (1976); R. Melnick, Regulation and the Courts 81-83 (1983); National Commission on Air Quality, To Breathe Clean Air 3.5-2 (1981).

⁸*Compare* Clean Air Act §§ 163-164, 42 U.S.C.A. §§ 7473-7474 *with* 40 C.F.R. § 52.21(c) (1977); *compare* Clean Air Act § 165(a), 42 U.S.C.A. § 7475(a) *with* 40 C.F.R. § 52.21(d) (1977). *See also* Alabama Power Co. v. Costle, 636 F.2d 323, 346-51, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20001, 20003-06

regulatory predecessor. For instance, it expanded the category of “major” sources from sources in nineteen industrial categories to sources that either have the “potential to emit” 250 tons per year of a designated pollutant or belong to one of twenty-six industrial categories and have the “potential to emit” 100 tons per year of a designated pollutant.⁹

Congress also prescribed in Part C a program to protect visibility in certain Class I areas—which included national forests and parks.¹⁰ Congress declared “as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I federal areas” where visibility is an important value.¹¹ Congress then directed EPA to identify those areas, complete a study on methods for implementing the national goal, and promulgate by August 1979 regulations requiring each SIP to contain emission limitations and such other measures as may be necessary to make reasonable progress toward meeting the goal.¹²

A dense thicket of NSR regulations has grown out of these statutory provisions since their enactment more than a decade ago. On both the nonattainment and the PSD sides, EPA has promulgated several regulations and subsequently amended them. On the visibility side, EPA has promulgated a like number.

The histories of the nonattainment and the PSD regulations are intertwined. In June 1978, EPA adopted two sets of mostly identical regulations for the purpose of implementing the PSD program Congress had detailed in Part C.¹³ One set, 40 C.F.R. § 51.24 (now section 51.166), described in intricate detail what provisions a

(D.C. Cir. 1979) (history of PSD regulations by Judge Leventhal); 43 Fed. Reg. 26388 (1978). In new section 166, Congress directed EPA in mandatory terms to promulgate within two years regulations setting up for state imitation an increment or equivalent PSD system for pollutants other than PM and SO₂ for which there is a NAAQS. Pub. L. No. 95-95, § 127(a), 91 Stat. 738. EPA has yet to promulgate such regulations, except in the case of nitrogen oxides. In 1987, as a result of a citizens suit, a federal district court ordered EPA to promulgate such regulations for nitrogen oxides. *Sierra Club v. Thomas*, 658 F. Supp. 165, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20875 (N.D. Cal. 1987). EPA promulgated those regulations in October 1988. 53 Fed. Reg. 40656 (1988) (to be codified at 40 C.F.R. §§ 51.166, 52.21). The D.C. Cir. has since remanded the regulations to EPA. *See* § 12:110. As of this writing, January 1996, EPA had yet to respond to this remand. For the development of PM-10 increments, *see* § 12:91.

⁹*Compare* Pub. L. No. 95-95, § 127(a), 91 Stat. 740-41 (Clean Air Act § 169(1)) (1977) *with* 40 C.F.R. § 52.21(d)(1) (1977).

¹⁰Pub. L. No. 95-95, § 128(a), 91 Stat. 742-45 (1977) (new Clean Air Act § 169A).

¹¹Pub. L. No. 95-95, § 128(a), 91 Stat. 742 (new Clean Air Act § 169A(a)(1)).

¹²Pub. L. No. 95-95, § 128(a), 91 Stat. 742-43 (new Clean Air Act §§ 169A(a)(2)–(a)(3)). Besides these NSR and visibility provisions, Congress added to the Act a then new provision governing the credit that may be given for dispersion techniques in setting emission limitations for new and existing stationary sources, namely, section 123. Pub. L. No. 95-95, § 121, 91 Stat. 721 (1977). With respect to permitting of new sources, it demands that the degree of emission limitation required by the permit “shall not be affected in any manner by—(1) so much of the stack height of any source as exceeds good engineering practice . . . , or (2) any other dispersion technique.” *Id.*; *see* 42 U.S.C.A. § 7423. Congress also added a provision that requires each SIP in turn to require each applicant for a permit for a major project to pay a fee sufficient to cover the administrative costs of handling the application and later enforcing the permit. *See* Clean Air Act § 110(a)(2)(L), 42 U.S.C.A. § 7410(a)(2)(L). EPA has not pressed the states to adopt a permit fee program, and has not promulgated one. As a result, only about sixteen states have an effective program, according to a study in 1983 by the Colorado Air Pollution Control Division. *See* R. Halvey, G. McCutchen & J. Clouse, *The Status of Permit Fees in State Implementation Plans* (1983) (unpublished). Congress, however, later established a permit fee program as part of the larger operating permit program introduced by the Clean Air Act Amendments of 1990. Clean Air Act § 502(b)(3), 42 U.S.C.A. § 7661a(b)(3).

¹³43 Fed. Reg. 26380, 26388 (1978). The proposal and certain other notices leading up to these final regulations appear at 42 Fed. Reg. 57471 (1977); 42 Fed. Reg. 57479, 59500, 59522, 62020, 63184 (1977). Actually, the June, 1978, final regulations were preceded by a final regulation that put certain provisions directly into 40 C.F.R. § 52.21 without prior notice and comment on the authority of Clean

state program would have to contain to warrant EPA approval.¹⁴ Since no state yet had a plan which met these requirements, EPA promulgated implementing rules to take effect in each state until that state received EPA approval for its own regulations. EPA's second set of regulations, 40 C.F.R. section 52.21, contained precisely those provisions described by 40 C.F.R. section 51.166 and supplanted the original PSD regulations in the SIP of each state.¹⁵

Industry and environmental groups promptly petitioned the D.C. Circuit to review these new PSD regulations. The court divided these challenges into two separate consolidated cases, one dealing with the so-called "effective date" provisions of the regulations,¹⁶ *Citizens to Save Spencer County v. EPA*,¹⁷ and the other dealing with the substantive provisions, *Alabama Power Co. v. Costle*.¹⁸

While briefing and oral argument proceeded in these cases, EPA turned its attention to the nonattainment provisions. In January 1979, it revised the Offset Ruling to conform it to the preferences Congress had expressed on a few issues and to the new designation scheme.¹⁹ Then, in April EPA published policy guidance—as opposed to final regulations—on what state permit programs would have to contain to satisfy § 173.²⁰ Finally, in July EPA promulgated an interpretative regulation, 40 C.F.R. section 52.24, embodying the construction ban in Clean Air Act section 110(a)(2)(I) and inserted it into the SIP of each state.²¹

Meanwhile, the D.C. Circuit upheld the "effective date" provisions of the PSD regulations in March 1979.²² In December, the court issued its final decision in *Ala-*

Air Act § 168(b), 42 U.S.C.A. § 7478(b), which made those provisions immediately effective. *See* 42 Fed. Reg. 57459 (1977).

¹⁴43 Fed. Reg. 26382–88 (1978). Section 51.24 is now section 51.166 by virtue of comprehensive renumbering of Part 51. 51 Fed. Reg. 40656 (1986).

¹⁵43 Fed. Reg. 26403–10 (1978).

¹⁶These provisions applied the new PSD requirements only to those major sources that had not received certain permits by March 1, 1978, or, in the case of a source that did receive the necessary permits by then, did not commence construction by March 19, 1979. *See, e.g.* 43 Fed. Reg. 26406 (1978) (40 C.F.R. § 52.21(i)(2) to (4)). EPA created these provisions in order to resolve a conflict between sections 165 and 168 of the Act on the question of which sources Congress intended to be subject to the new requirements. *See* 43 Fed. Reg. 26389 to 26391 (1978).

¹⁷Actually, this consolidated case included proceedings other than challenges to the June, 1978, regulations. First, the lead case was a challenge to the November 1977 final PSD regulations, to the extent that they embodied a decision not to apply all of the new requirements to sources that did not commence construction before August 7, 1977. *See Citizens to Save Spencer County v. EPA*, No. 78-1002 (D.C. Cir. filed 1–3–78). In addition, another case was an appeal from a decision of a federal district court that it lacked jurisdiction to hear the "effective date" issue. This decision is in *Environmental Defense Fund v. Costle*, 448 F. Supp. 89, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20329 (D.D.C. 1978).

¹⁸*Alabama Power Co. v. Costle*, 636 F.2d 323, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20001 (D.C. Cir. 1979).

¹⁹44 Fed. Reg. 3274 (1979). EPA simultaneously solicited comment on several issues. 44 Fed. Reg. 3298 (1979).

²⁰44 Fed. Reg. 20372, 20378 to 20380 (1979).

²¹44 Fed. Reg. 38471 (1979). Actually, new 40 C.F.R. § 52.24 also embodied the ban in Clean Air Act § 173(4), 42 U.S.C.A. § 7503(a)(4). *See* 44 Fed. Reg. 38473 (1979) (40 C.F.R. § 52.24(b)). This interpretative rule was preceded by an extensive policy memorandum on the subject of nonattainment sanctions. 44 Fed. Reg. 37679 (1979).

²²*Citizens to Save Spencer County v. EPA*, 600 F.2d 844, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20194 (D.C. Cir. 1979). EPA subsequently proposed to loosen these provisions in a fairly narrow way largely in order to let a refinery the Pittston Company proposed to build in Eastport, Maine, avoid the new PSD requirements, primarily the requirement that it not cause a violation of Class I increments for sulfur dioxide over the nearby Roosevelt Campobello International Park (RCIP). *See* 44 Fed. Reg. 42727 (1979). EPA never took final action on this proposal because Pittston abandoned the project when the First Circuit remanded the NPDES permit the refinery had received under the Clean Water

bama Power.²³ It resolved nearly a dozen and a half major issues, siding with EPA on some and with the petitioners on the rest.²⁴

In 1980, EPA overhauled not only its PSD regulations, but also its prior articulations on nonattainment issues, in an effort to conform them to the interpretations of the court in *Alabama Power*. As a small initial step, in May, EPA closed a loophole in the Offset Ruling and its guidance on § 173, namely, an exemption for “clean spots” in designated nonattainment areas.²⁵ At the same time, it set out a requirement, now codified as 40 C.F.R. section 165(b), that each SIP must have a permit program that applies to major sources that would affect a designated nonattainment area even though it would locate outside of that area.²⁶ In August, EPA thoroughly revised the PSD regulations, the Offset Ruling, and the construction ban.²⁷ EPA also put guidance on § 173 into regulatory form as new provisions of 40 C.F.R. Part 51.²⁸

The Sierra Club and several industry groups promptly petitioned the D.C. Circuit for review of these August 1980 regulations. The Sierra Club challenged the failure of EPA to bring strip mines under the coverage of the PSD regulations by requiring fugitive emissions from a mine to be included in determining whether it is “major” and hence subject to review. (“Fugitive” emissions are emissions—like the dust from disturbed earth—which are not released through a smokestack or vent.)²⁹ The industry groups challenged many provisions, including the so-called “dual” definition of “source” for purposes of nonattainment new source review.³⁰

In 1982, the court partially remanded the 1980 regulations to EPA for an explana-

Act. RCIP Comm’n v. EPA, 684 F.2d 1041, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20903 (1st Cir. 1982). In a companion case, the same court declined to review the PSD permit that Pittston had received under the pre-1978 PSD regulations because it was still unsettled whether the refinery might end up subject to the new regulations. RCIP Comm’n v. EPA, 684 F.2d 1034, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20911 (1st Cir. 1982).

²³*Alabama Power Co. v. Costle*, 636 F.2d 323, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20001 (D.C. Cir. 1979).

²⁴The most prominent of these issues concerned the definition of “potential to emit,” the treatment of “fugitive” emissions, the baseline for increments, the definition of “source,” and the definition of “modification.” See, e.g., *Alabama Power Co. v. Costle*, 636 F.2d 323, 345, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20001, 20002 (D.C. Cir. 1979).

²⁵45 Fed. Reg. 31307 (1980). This action was foreshadowed in part by a proposal at 44 Fed. Reg. 38583 (1979).

²⁶45 Fed. Reg. 31312 (1980) (codified originally at 40 C.F.R. § 51.18(k)). The present numbering appears at 51 Fed. Reg. 40656 (1986).

²⁷45 Fed. Reg. 52677 (1980). The Part 52 PSD regulations newly required EPA to follow the procedures in 40 C.F.R. part 124 in processing PSD permit applications. See 45 Fed. Reg. 52740 to 52741 (1980) (40 C.F.R. § 52.21(q)). Part 124 contains EPA’s consolidated permit regulations. They first appeared at 45 Fed. Reg. 33066 (1980) and were overhauled at 48 Fed. Reg. 14264 (1983).

²⁸45 Fed. Reg. 52743 to 52746 (1980) (codified originally as 40 C.F.R. § 51.18(j); now codified as 40 C.F.R. § 165(a)). Actually, 40 C.F.R. § 51.18(j) first appeared in the May 13, 1980 promulgation, but at that point it went beyond a simple requirement to satisfy section 173 of the Act only to the extent necessary to deal with the “clean spot” exemption. 45 Fed. Reg. 31312 (1980). Proposal of the post-*Alabama Power* overhaul appeared at 44 Fed. Reg. 51924 (1979); supplementary material appeared at 44 Fed. Reg. 54069, 57107, 65084 (1979). Proposal at this stage, before the December 1979, final decision, was made possible, and indeed urged, by an unprecedented “preliminary” decision of the court on June 18, 1979. See *Alabama Power Co. v. Costle*, 606 F.2d 1068, 9 Env’tl. L. Rep. (Env’tl. L. Inst.) 20400 (D.C. Cir. 1979). See generally *Alabama Power Co. v. Costle*, 636 F.2d 323, 343-44, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20001, 20002. Several weeks after promulgation of the overhaul, EPA amended the Offset Ruling in minor ways as a completion of the rulemaking it had begun in January 1979. See 45 Fed. Reg. 59874 (1980).

²⁹See § 12:93.

³⁰In the 1980 regulations, EPA required § 173 permitting, the Offset Ruling, and the construction bans to apply to a new emissions unit emitting “major” amounts of a relevant pollutant that would locate at an existing plant even if the unit would be accompanied by compensating emissions reductions elsewhere at the plant. EPA accomplished this by defining “source” to mean both a plant and “an

tion of why it had treated strip mines differently than other sources.³¹ In its response, EPA said that it had no good explanation and committed to propose whether to bring new strip mines under PSD review.³² In October 1984, EPA fulfilled this commitment by proposing to bring strip mines not only under PSD, but also nonattainment, review. EPA ultimately decided in November 1989 not to regulate strip mines, engendering yet another round of litigation.³³

Meanwhile, EPA was dealing with the industry challenges, which the court had consolidated under the caption *Chemical Manufacturers Association v. EPA*.³⁴ In October 1981, EPA reversed itself on the definition of “source,” ruling that a state may use a “plantwide” definition in NSR for nonattainment areas in some circumstances.³⁵ This led to reversal by the D.C. Circuit in *Natural Resources Defense Council v. Gorsuch*,³⁶ and ultimately to affirmance of EPA’s action by the Supreme Court in *Chevron, U.S.A. Inc., v. Natural Resources Defense Council*.³⁷ Finally, in February 1982, EPA entered into a settlement agreement on the balance of the issues. EPA agreed to take final action on an earlier proposal to take vessel emissions out of determinations of source size and air quality impact³⁸ and to propose and take final action on a wide range of amendments to the 1980 regulations.³⁹

EPA took final action on vessel emissions in June 1982, essentially removing them totally from consideration under the PSD and nonattainment regulations.⁴⁰ An environmental group and two states petitioned the D.C. Circuit for review of that action. In January 1984, the court agreed with EPA’s root legal interpretation, but remanded the relevant provisions, concluding that EPA went too far in excluding all vessel emissions, inasmuch as some dockside vessel emissions could be attributed to marine terminals.⁴¹

EPA proposed a large number of amendments in August 1983 pursuant to the settlement agreement in *Chemical Manufacturers Association v. EPA*.⁴² EPA has since taken final action on those amendments in two stages. In 1984, EPA completed

identifiable piece of process equipment.” See, e.g., 45 Fed. Reg. 52743 to 52744 (1980) (40 C.F.R. § 51.18(j)(1)(i) to (iii)). See also 45 Fed. Reg. 52696 to 52698 (1980). In contrast, EPA defined “source” to mean plant for PSD purposes so that individual units locating at existing plants could avoid PSD review by obtaining compensating reductions elsewhere at the plant, i.e., by “netting out of review.” See, e.g. 45 Fed. Reg. 52731 (1980) (40 C.F.R. § 51.24 (b)(5) to (6)).

³¹Sierra Club v. Gorsuch, 715 F.2d 653, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20809 (D.C. Cir. 1983).

³²49 Fed. Reg. 43211, 43212 (1984).

³³See § 12:93.

³⁴Chemical Mfrs. Ass’n v. EPA, No. 79-1112 (D.C. Cir., settlement agreement filed 2-22-82).

³⁵46 Fed. Reg. 50766 (1981). The proposal appears at 46 Fed. Reg. 16280 (1981).

³⁶Natural Resources Defense Council v. Gorsuch, 685 F.2d 718, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20942 (D.C. Cir. 1982).

³⁷Chevron, U.S.A. Inc. v. Natural Resources Defense Council, 467 U.S. 837, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20507 (1984).

³⁸46 Fed. Reg. 61613 (1981). An earlier temporary stay appeared *id.* at 36695.

³⁹See Chemical Mfrs. Ass’n v. EPA No. 79-1112 (D.C. Cir. 1982) (Settlement Agreement, dated Feb. 22, 1982); see also 48 Fed. Reg. 38742 (1983).

⁴⁰47 Fed. Reg. 27554 (1982).

⁴¹Natural Resources Defense Council v. EPA, 725 F.2d 761, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20191 (D.C. Cir. 1984).

⁴²48 Fed. Reg. 38742 (1983). These amendments related to: (1) fugitive emissions; (2) federal enforceability; (3) the requirements for health and welfare equivalence for netting under the definition of “major modification”; (4) the definition of “significant”; (5) the innovative control technology waiver in the PSD regulations; (6) secondary emissions; (7) the crediting of source shutdowns and curtailments as offsets in nonattainment areas; and (8) banking of offsets under the Offset Ruling.

rulemaking on the amendment relating to fugitive emissions.⁴³ That action has spawned yet more litigation, which was not decided until 1991.⁴⁴ Then, in June 1989, EPA took final action on the remaining amendments it had proposed in 1983.⁴⁵ New petitions have been filed with the D.C. Circuit Court seeking review of those actions as well.⁴⁶ With one exception,⁴⁷ EPA has yet to propose the balance of the amendments in the agreement. These remaining amendments relate to the baseline for “netting” and “offsetting” under the regulations.

Finally, in July 1987, EPA amended the PSD and nonattainment NSR regulations to take into account the simultaneous revision of the NAAQS for particulate matter (PM).⁴⁸ Under that NAAQS revision, EPA in effect repealed the preexisting NAAQS for TSP and substituted NAAQS only for those particulates with a diameter of ten micrometers or less (PM-10).⁴⁹ EPA’s amendments to the NSR regulations established that the review of new PM-10 emissions is to occur for the most part under the PSD permitting system, and not under the Part D nonattainment system, on the ground that the new NAAQS will impose new additional regulatory burdens at least in some areas and, hence, were not intended by Congress to be administered under Part D of the Act.⁵⁰ The 1990 amendments to the Act have now brought the

⁴³49 Fed. Reg. 43202 (1984). EPA decided, contrary to its proposal, to continue to require the inclusion of fugitive emissions in determining whether a source belonging to one of twenty-eight categories would be “major.”

⁴⁴The case was originally filed in 1984 under the caption *National Coal Ass’n v. Reilly*, No. 84-1609 (D.C. Cir. 1984). It was decided in June 1991 at *NRDC v. EPA*, 937 F.2d 641 (D.C. Cir. 1991) along with the companion case *Sierra Club v. EPA*, No. 90-1028. For a discussion of these cases, see § 12:93.

⁴⁵54 Fed. Reg. 27274 (June 28, 1989).

⁴⁶These cases were consolidated as *Chemical Mfrs. Ass’n v. EPA*, No. 89-1514 (D.C. Cir., filed 1989). The court disposed of the principal issue (relating to “federal enforceability”) by a judgment dated September 15, 1995, vacating and remanding the relevant provisions. See § 12:95. The remaining issues are no longer under active consideration by the court. Order No. 89-1514 (D.C. Cir. 1-27-95). In *Minnesota Mining & Mfg. Co. v. EPA*, No. 89-1500 (D.C. Cir. 1989), that firm challenged the Agency’s failure to exclude certain perfluorocarbon compounds from the definition of “volatile organic compound.” That case has since been dismissed, as a result of final amendments to the regulations excluding those compounds. See 57 Fed. Reg. 3941 (1992). See § 12:105.

⁴⁷In March 1984, EPA proposed action on the issue of whether it would redefine the term “particulate matter” (PM) for purposes of the PSD increment for that pollutant in the event that the Agency revised the PM NAAQS to take into account only certain small particles (e.g., particles with a diameter of ten micrometers or less (PM-10)) as opposed to “total suspended particulates” (TSP). 49 Fed. Reg. 10408, 10421 (1984). EPA, however, proposed to retain TSP as the definition of PM for purposes of the secondary NAAQS, 49 Fed. Reg. 10417 to 10419 (1984), and hence EPA proposed to retain it for the PM increments as well. In 1987, EPA revised the PM NAAQS to focus exclusively on PM-10. 52 Fed. Reg. 24634 (1987). Nevertheless, it decided to retain the TSP increments for the time being, essentially because Congress had written them into the Act. 52 Fed. Reg. 24699 (1987). At the same time, EPA announced that it would promulgate PM-10 increments under § 166 to replace the statutory TSP increments. 52 Fed. Reg. 24699 to 24702 (1987). See § 12:110. The D.C. Circuit has upheld the PM-10 NAAQS in pertinent part, and rejected a coal industry challenge that EPA should have “administratively redefined” the TSP numbers specified in § 163(b) as referring now to a PM-10 indicator. *NRDC v. EPA*, 902 F.2d 962 (D.C. Cir. 1990). The 1990 amendments now give EPA authority to repeal the TSP increment, substituting the PM-10 increment. See § 166(j), 42 U.S.C.A. § 7476(j). EPA has since substituted PM-10 increments for the TSP increments. See 58 Fed. Reg. 31622 (June 3, 1993). A challenge to that substitution, *American Mining Congress v. EPA*, No. 93-1477 (D.C. Cir. filed 1993), has been administratively terminated subject to reactivation on motion. Order No. 89-1514 (D.C. Cir. 1-27-95).

⁴⁸52 Fed. Reg. 24672 (1987).

⁴⁹52 Fed. Reg. 24634 (1987).

⁵⁰52 Fed. Reg. 24677 to 24679, 24682 to 24687 (1987). While the *Chemical Mfrs. Ass’n* settlement agreement and the revision of the PM NAAQS has driven most of the regulatory activity relating to NSR since 1980, EPA has separately taken several other actions relating to NSR since 1980, most of

PM-10 NAAQs into the Part D system, including Part D permitting.⁵¹

While EPA was developing these PSD and nonattainment regulations, it was also separately developing visibility regulations. In December 1980, EPA promulgated regulations at 40 C.F.R. §§ 51.300 to 51.307 giving states guidance on what would be an acceptable state program for achieving the national visibility goal.⁵² These regulations, which required only programs to remedy “plume blight,” as opposed to “regional haze,”⁵³ called for NSR provisions that would give Federal Land Managers certain procedural advantages in the PSD permitting process that the PSD regulations did not offer and pull major new sources locating in nonattainment areas but potentially affecting Class I areas into review for their impacts on visibility in those Class I areas.⁵⁴ When states later failed to submit visibility protection SIPs, under pressure from a citizen suit EPA promulgated the necessary NSR provisions into their SIPs, as well as certain other measures.⁵⁵ These NSR regulations now appear

them consisting of refinements to the construction bans at 40 C.F.R. § 52.24. The first such refinement made it clear that neither of the construction bans could come into effect in the case of a newly-designated nonattainment area until eighteen months after the designation in order to give the state about the same chance it would have had to adopt and obtain EPA approval of the necessary SIP revisions if EPA had originally designated the area nonattainment in 1978. 45 Fed. Reg. 65209 (1980). The next established that the bans would not apply within a discrete part of a nonattainment area, such as a county, if EPA finds that the SIP is adequate and is being implemented in that part. 46 Fed. Reg. 41498 (1981). The next explained that once EPA had approved a Part D plan and removed the § 110(a)(2)(I) ban, new bans would not come into effect automatically; EPA concluded that it would have to evaluate an approved plan and find it no longer adequate before that ban could take effect. 46 Fed. Reg. 62651 (1981). The next item reflected the similar view that the section 173(4) ban could come into effect only upon a determination, which EPA could make, that the nonattainment SIP was not being carried out. 47 Fed. Reg. 9477 (1982). The next refinement registered the longstanding view that the section 110(a)(2)(I) ban does not apply in areas that are nonattainment for a secondary NAAQS only. 47 Fed. Reg. 44729 n.2 (1982). *See also* 50 Fed. Reg. 13130, 13153 (1985). The last refinement expressly declared that the section 110(a)(2)(I) ban cannot apply to a nonattainment area so long as its SIP enjoys full EPA approval. 48 Fed. Reg. 50686, 50697 (1983).

Beyond these refinements of the ban, EPA proposed to fix the air quality status of an area for purposes of a pending permit application as of the date of completion of the application, 46 Fed. Reg. 9124 (1981), and to unilaterally redraw the boundaries of designated attainment and unclassifiable areas along the boundaries of counties. 47 Fed. Reg. 3011 (1982). EPA has not taken final action on these proposals, and is not likely to do so. Next, EPA proposed in 1983 to restructure and renumber 40 C.F.R. part 51. 48 Fed. Reg. 46152 (1983). In November 1986, EPA promulgated those changes. 51 Fed. Reg. 40656 (1986). Finally, in June 1988, EPA proposed new nonattainment designations pursuant to the Mitchell-Conte Amendment of December 22, 1987 (contained in the Budget Reconciliation Act of 1987, Pub. L. No. 100-202, 101 Stat. 1329 (1987)), and solicited comment on whether the new designations would restart the whole Part D system, including the potential for imposition of construction bans for failure to plan. *See* 53 Fed. Reg. 20722 (1988). As of this writing, EPA has yet to take final action.

The 1990 amendments, in any event, have now radically changed the premises of these past actions by repealing section 110(a)(2)(I) and substituting a discretion-based ban for failure to prepare adequate SIPs on time. *See* Clean Air Act § 179, 42 U.S.C.A. § 7509.

⁵¹*See* Clean Air Act §§ 107(d), 188, 42 U.S.C.A. §§ 7407(d), 7513.

⁵²45 Fed. Reg. 80085 (1980). EPA previously identified those mandatory class I federal areas where visibility is an important value. 44 Fed. Reg. 69124 (1979) (codified at 40 C.F.R. §§ 81.400 to 81.437). EPA also published, in accordance with the statutory instruction a study on visibility impairment. EPA, Protecting Visibility: An EPA Report to Congress (EPA-450/5-79-008).

⁵³*See, e.g.,* 45 Fed. Reg. 80085, 80086 (1980). The Second Circuit has affirmed that the current visibility regulations under section 169A of the Clean Air Act, 42 U.S.C.A. § 7491, do not address regional haze. *Vermont v. Thomas*, 850 F.2d 99, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21207 (2d Cir. 1988). In addition, the First Circuit has ruled that EPA has no nondiscretionary duty under section 169A to promulgate regional haze regulations. *Maine v. Thomas*, 874 F.2d 883, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 21046 (1st Cir. 1989).

⁵⁴45 Fed. Reg. 80088, 80093, 80095 (1980).

⁵⁵50 Fed. Reg. 28544 (1985); 52 Fed. Reg. 45132 (1987). The citizen suit was captioned *Environmental Defense Fund v. Reilly*, No. C82-6850 RPA (N.D. Cal. filed 1982).

at 40 C.F.R. §§ 52.21(p), 52.27, and 52.28.⁵⁶

On November 15, 1990, President Bush signed into law the Clean Air Act Amendments of 1990.⁵⁷ While these amendments heavily revise the preexisting Act, they leave intact the basic structure of the new source review system and, more particularly, leave the PSD provision almost entirely alone. The changes in the overall system, nevertheless, are significant. For instance, the Congress tightened applicability thresholds and offset ratios for the review of new sources in nonattainment areas, eliminated the potential for a construction ban for future failures to meet SIP planning obligations, and created a special system of preconstruction review for hazardous air pollutants. By late 1995, however, EPA had issued only guidance to assist state implementation of the statutory changes, and a rulemaking to update the nonattainment NSR regulations was still at the preproposal drafting stage. Especially remarkable has been the Agency's treatment of section 112(g), which ostensibly calls for the preconstruction review of new and increased streams of hazardous air pollutants, beginning with the establishment in each state of a Title V operating permit program. EPA proposed implementing regulations in April 1994 and issued guidance in July 1994 clarifying that the section 112(g) review program was to come into effect in a state along with its Title V program, even if EPA had yet to issue final regulations delineating the program. EPA reversed itself in February 1995, saying that the start of the section 112(g) program would have to await promulgation of EPA's final regulations because without those regulations key terms would lack sufficient definition. Moreover, EPA now appears to be planning to delay such promulgation for many years.⁵⁸

§ 12:91 Current federal requirements

The result of all this activity since 1977 has been the creation of an extensive regulatory superstructure at the federal level: for general purposes, 40 C.F.R. §§ 51.160–51.164 and 51.165(b); for nonattainment purposes, 40 C.F.R. § 51.165(a), 40 C.F.R. part 51, Appendix S (the Offset Ruling), and 40 C.F.R. § 52.24; for PSD purposes, 40 C.F.R. §§ 51.166 and 52.21; for visibility purposes, 40 C.F.R. §§ 51.300 et seq., and 40 C.F.R. §§ 52.21(p), 52.27, and 52.28. These provisions are described in detail in this subsection.¹

It will be helpful to the reader in digesting this section to understand at the outset that these federal regulations all share a common structure. That structure

⁵⁶Parallel to the development of these NSR regulations has been the development of regulations implementing the stack height provisions of section 123 of the Act. EPA first promulgated these regulations in 1982. 47 Fed. Reg. 5864 (1982). The D.C. Circuit subsequently remanded some elements of these regulations and upheld others. *Sierra Club v. EPA*, 719 F.2d 436, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21001 (D.C. Cir. 1983), cert. denied sub nom. *Alabama Power Co. v. Sierra Club*, 467 U.S. 1248 (1984). EPA has since revamped and repromulgated the regulations. 50 Fed. Reg. 27892 (1985). In addition, it has recodified them as 40 C.F.R. §§ 51.118 to 51.119. 51 Fed. Reg. 40667 to 40668 (1986). These actions in turn spawned new litigation requiring some further revisions. *NRDC v. Thomas*, 838 F.2d 1224 (D.C. Cir. 1988), cert. denied, 488 U.S. 901 (1988).

⁵⁷Pub. L. No. 101-549, 104 Stat. 2399.

⁵⁸See 59 Fed. Reg. 15504 (Apr. 1994) (proposed regulations); 60 Fed. Reg. 8333 (Feb. 1995) (reversal).

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¹As noted in § 12:88, EPA restructured Part 51 in 1986. 51 Fed. Reg. 40656 (1986). This restructuring did not affect the substance of any of the new source review regulations, but reshuffled and renumbered them. Under the changes, 40 C.F.R. §§ 51.18(a) to (d) became 40 C.F.R. §§ 51.160(a) to 51.160(d) respectively; 40 C.F.R. § 51.18(e) became 40 C.F.R. § 51.162; 40 C.F.R. § 51.18(f) became 40 C.F.R. § 51.160(e); 40 C.F.R. § 51.18(g) became 40 C.F.R. § 51.163; 40 C.F.R. § 51.18(h) became 40 C.F.R. § 51.161; 40 C.F.R. § 51.18(i) was deleted; 40 C.F.R. §§ 51.18(j) and (k) became 40 C.F.R. §§ 51.165(a) and (b) respectively; and 40 C.F.R. § 51.24 became 40 C.F.R. § 51.166.

consists of three layers of provisions, ones that govern applicability, ones that embody substantive requirements, and ones that prescribe procedure. The applicability provisions define which pollutant-emitting activities must have a permit. They address—sometimes only implicitly—three dimensions: the size of the potential for generating pollution, the location of the activity, and its exemptability for reasons of age. The substantive provisions lay out the requirements an applicant must satisfy to obtain a permit. As mentioned previously, these generally break down into two categories, those related to emission control requirements and those related to air quality impact. Finally, the procedural provisions specify the process the permitting authority must follow in order to involve the public in the decision as to whether to issue the permit and what its content should be.

Of course, the reader should also keep in mind that the 1977 and 1990 Amendments spawned not only the above federal regulations, but also a vast and still ongoing revision of state NSR programs in the SIPs.² Most states have submitted and received approval of at least one version of a NSR program designed to satisfy section 173 of the Clean Air Act as it existed before 1990. Many of these programs were developed and approved before the promulgation of the 1980 regulations, the 1981 “plantwide” definition of “source,” and the new PM-10 NAAQS, and hence are still undergoing further changes. Similarly, most states have adopted and received approval of their own PSD regulations. EPA has delegated authority to almost all of the rest of the states to administer the federal PSD regulations on behalf of EPA, so that a company generally must go to a state agency now to obtain a PSD permit.³ An awareness of the federal superstructure, therefore, is only a beginning: A practitioner must also learn what the state regulations require.⁴

In 2002 the EPA issued a report to the president recommending reforms to the New Source Review program.⁵ The report is a result of a 10-year information-gathering project, which found that the NSR program impeded or cancelled activi-

²It has also spawned an extensive body of EPA lore that lies outside of the *Federal Register*, largely in the form of internal memoranda. Significant and still current items of this lore are described in this section.

³A rough estimate is that EPA is still the direct permitting authority for only about two states. See 53 Fed. Reg. 40656, 40658 (1988).

The existence of Indian reservations further complicates this pattern, but generally with little consequence since little new source growth has occurred on the reservations. As a general rule, state law, and hence SIP provisions, do not govern on most reservations, at least presumptively, while federal law does govern there. As a result, the federal PSD permit regulations, 40 C.F.R. § 52.21, have governed Indian reservations within designated attainment or unclassifiable areas, and, when EPA has approved a state PSD program or delegated administration of 40 C.F.R. § 52.21, it has retained its full authority under those regulations over any reservation in the state. Also as a result, state nonattainment NSR programs approved by EPA do not apply to reservations, inasmuch as EPA can approve into a SIP only such authority as a state has submitted. A few Indian tribes are in the process of developing “tribal implementation plans” (TIPs). In the past this raised the unsettled questions of whether EPA may approve those plans as if they were SIPs and, if not, whether it may promulgate the substance of the TIPs as federal plans. Fortunately, the 101st Congress provided specific answers. See Clean Air Act Amendments of 1990, Pub. L. No. 101-549, § 107, 104 Stat. 2399 (amending sections 110, 301, and 302) (codified at §§ 110(o), 301(d), 302(r), 42 U.S.C.A. § 7410(o), 7601(d), 7602(r)). Now, EPA is to treat TIPs as it would SIPs, except to the extent that EPA has determined otherwise through rulemaking. EPA has yet to issue final regulations, however, elaborating on this statutory guidance, although it has issued proposed regulations, which appear at 59 Fed. Reg. 43956 (Aug. 25, 1994).

⁴Because of the ongoing federal-state interplay under the SIP system, disparities often arise between the new source review regulations applicable under state law and previous versions incorporated into the federally enforceable SIP. Consequently, to determine what requirements apply at a given time under state and federal law, it is advisable to check with the appropriate state agency or EPA regional office.

⁵See http://www.epa.gov/air/nsr-review/nsr_report_to_president.pdf. See also http://www.epa.gov/pahome/headline_061302.htm.

ties aimed at maintaining or improving the reliability and safety of existing power plants and refineries. EPA is moving to finalize reform proposals that originated in 1996 during the Clinton Administration, which include simplifying the process for companies to adopt pollution control and prevention projects, establishing agreements with plants to impose strict emission caps called plantwide applicability limits (PALs), and allowing operational flexibility to plants that install “clean units” having NSR permits or other regulatory limits requiring the use of BACTs.⁶ EPA also proposes additional reforms, including among others clarifying the definitions of “routine” repairs and maintenance to assist companies in implementing necessary equipment repair and replacement projects.

**§ 12:92 Current federal requirements—40 C.F.R. Sections 51.160–51.163:
The basic program**

The first new source regulations, promulgated in 1973 and now codified at 40 C.F.R. §§ 51.160–51.163, express in regulatory form the essential requirement of Clean Air Act section 110(a)(2)(C) that each SIP contain a basic program for the preconstruction review of new sources.¹ Specifically, they call for a program that: (1) applies to *any* new source or modification that would contribute in significant amounts to concentrations of any pollutant for which a NAAQS has been established; (2) requires the owner or operator of the project to show prior to construction that the project will be able to adhere to the SIP and will not cause or contribute to any NAAQS violation; and (3) gives the public advance notice and opportunity to comment on the project.²

When, in the 1977 Amendments, Congress enacted parts C and D of Title I creating an extensive nonattainment and PSD area NSR program applicable to major sources in 1977, it retained the “general” or “minor” NSR provisions of section 110(a)(2)(C) that have no statutory size threshold. The 1990 Amendments again retained these provisions, standing as an implicit legislative judgment that minor sources and minor modifications are important enough to warrant a rudimentary review to ensure their consistency with air quality planning goals. In addition, the implementing EPA regulations in sections 51.160–51.163 and corresponding SIP measures retain enormous practical significance to the major source NSR program. Indeed, it may fairly be said that minor source permits are the fulcrum on which the entire NSR apparatus is balanced. This is so mainly because minor source permits are the chief mechanism by which sources avoid applicability under major source NSR (and by which offsets are secured when nonattainment area NSR cannot be avoided).³ Although neither the statute nor EPA’s regulations specify a size threshold for the minor source permit program, many SIPs have, on their face or by

⁶See http://www.epa.gov/air/nsr-review/nsr_recommendations.pdf.

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¹The substance of § 110(a)(2)(C) formerly appeared in relevant part as § 110(a)(2)(D). See Clean Air Act Amendments of 1990, Pub. L. No. 101-549, § 101(b), 104 Stat. 2399.

²51 Fed. Reg. 40669 (1986). The opportunity for public participation must include (1) availability of the relevant information in at least one location in the affected area; (2) notice by “prominent advertisement” of the location of the information and the opportunity for comment; and (3) in general thirty days for the submittal of comments. 40 C.F.R. §§ 51.161, 51.163.

³As discussed more fully in other sections, a source generally may take pollution controls and operational restrictions into account on a plantwide basis when quantifying its emissions to determine applicability under major source NSR. In order for these limitations to accord “synthetic minor” status to a new source or modification, however, they must be embodied in an enforceable instrument. See § 12:95. Likewise, emissions reductions at sources providing external offsets must be made federally enforceable. Historically, permits under the section 51.160–51.163 program are the most frequently used means to this end. Interview with Gary McCutchen, Chief, NSR Section, OAQPS, September 29, 1992.

state policy, established their own “sub-*de minimis*” applicability levels.⁴

The NSR program required by section 110(a)(2)(C) also plays an important role in control of pollution from emissions of lead. After EPA promulgated the NAAQS for lead in the late 1970s, it called upon each state to adopt and submit a basic NSR program for new sources of that pollutant.⁵ The lead program has the unusual feature that it is to apply to any new source that would have the potential to emit five tons per year (tpy) or more of lead and to any new modification of a five tpy source that would increase lead emissions at that source by 0.6 tpy.⁶ The PSD requirements overlap with this requirement to a considerable degree, as will be seen below, but PSD rules alone would not catch new sources that would emit less than 100 tpy of lead.⁷

§ 12:93 Current federal requirements—Nonattainment and PSD permitting—Applicability¹—Interlocking coverage

40 C.F.R. sections 51.165 and 51.166 express the balance of the requirements of Clean Air Act section 110(a)(2)(C). Section 51.165(a) requires each SIP to contain a permit program for “major” new projects locating in designated nonattainment areas. Specifically, the program is to apply to any new “source” or “modification” that would emit in “major” amounts any pollutant for which the area is designated nonattainment (the “nonattainment” pollutant).² To obtain a permit, an applicant

⁴The advent of a mandatory operating permit program under Title V of the Clean Air Act may bring renewed focus on the section 110(a)(2)(C) minor source permit program. In adopting final regulations specifying the requirements of state operating permit programs under Title V, 57 Fed. Reg. 32250 (July 21, 1992), EPA established a highly controversial procedure for “minor permit modification procedures” that do not require public notice and comment when Title V permits are revised in ways that “are not modifications under any provision of Title I.” See 57 Fed. Reg. 32307 (to be codified at 40 C.F.R. 70.7(e)(2)(5)). The Agency ultimately adopted a legal rationale provided by the Department of Justice that hinged on the assertion that “minor” increases in emissions are *de minimis* under the doctrine of *Alabama Power*. See generally 57 Fed. Reg. 32281-86. In so doing, EPA focused exclusively on the “significance” thresholds for major source permitting under Parts C and D of Title I, and simply ignored the minor source permitting requirements of section 110(a)(2)(C) of Title I. 57 Fed. Reg. 32285. The dubious implication, however, is that the entire minor source program addresses only trivial matters. A more reasonable way of harmonizing the section 110(a)(2)(C) and Title V modification provisions would be to follow the SIP-specific thresholds for state minor source permit programs for Title V applicability purposes.

⁵Memorandum from Richard G. Rhoads, Director, Control Programs Development Division (CPDD), OAQPS, to Regional Air Management Division Directors, Apr. 8, 1980; Memorandum from Darryl D. Tyler, Director, CPDD, OAQPS, to Chief, Air Branch, Regions I-V (July 5, 1984); OAQPS, Updated Information on Approval and Promulgation of Lead Implementation Plans, 4-22 to 4-23 (draft manual, July 1983); 52 Fed. Reg. 24686 (1987) (by implication).

⁶Memorandum from Darryl D. Tyler to Chief, Air Branch, Regions I-X (July 5, 1984); OAQPS, Updated Information on Approval and Promulgation of Lead Implementation Plans, 4-23 (draft manual, July 1983). These documents also express the view that fugitive emissions are to be included routinely in calculating the emissions size of a lead source. Cf. Clean Air Act § 302(j), 42 U.S.C.A. 7602(j); 49 Fed. Reg. 43202 (1984).

⁷40 C.F.R. §§ 51.160–51.163 also appears to retain practical significance because it specifies generally applicable procedural requirements, whereas 40 C.F.R. § 51.165 does not.

[Section 12:93]

¹As the reader will see, the applicability provisions are intricate and rife with ambiguities. Courts have refused to impose penalties and even injunctive relief for alleged violations of TSCA and PSD/NSR requirements on grounds of vagueness. See, e.g., *General Elec. Co. v. EPA*, 53 F.3d 1324, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 20982 (D.C. Cir. 1995) (TSCA); *Ogden Projects, Inc. v. New Morgan Landfill Co.*, No. 94-CV-3048 (E.D. Pa. 9–22–95) (nonattainment NSR).

²40 C.F.R. § 51.165(a)(2), 51 Fed. Reg. 40672 (1986); 45 Fed. Reg. 52676, 52711 (1980); 45 Fed. Reg. 31307, 31309–10 (1980). The only pollutants for which areas have been designated under section 107 of the Act are carbon monoxide, nitrogen oxides, sulfur dioxide, particulate matter, and ozone. See

must satisfy the relevant substantive requirements, such as offsets, for each nonattainment pollutant emitted in “major” amounts.³

In contrast, section 51.165(b) calls for a permit program for new “major” projects locating in an attainment or unclassifiable area but nevertheless affecting a nonattainment area. Specifically, the program is to apply to any new “source” or “modification” that would: (1) emit a particular pollutant in “major” amounts; (2) locate in an area designated attainment or unclassifiable for that pollutant; and (3) contribute significantly to concentrations of the pollutant in an area designated nonattainment for the pollutant.⁴ To obtain a permit, an applicant must satisfy the relevant substantive requirements—mainly an offset requirement—for each pollutant for which the project would be subject to the permit requirement.⁵

Section 51.166 complements section 51.165(a) and overlaps section 51.165(b). It requires a PSD permit program that applies⁶ in general to any new “source” or “modification” that would be “major” for *any* pollutant regulated under the Act and would locate in any area that is designated attainment or unclassifiable for *any* pollutant, even one the project would not emit.⁷

There are two main exceptions to this general requirement. First, the 1990 Amendments declared simply that PSD review “shall not apply to pollutants listed”

40 C.F.R. Part 81, Subpart C. It appears to be a mistake, therefore, that 40 C.F.R. § 51.165(a) in defining “major” modification lists “lead” as a pollutant for which an emissions increase could be significant. See 40 C.F.R. § 51.165(a)(1)(x).

³45 Fed. Reg. 52711 (1980).

⁴40 C.F.R. § 51.165(b); 45 Fed. Reg. 31309-10 (1980). 40 C.F.R. § 51.165(b) defines what is a significant contribution by reference to air quality concentrations in section III of Offset Ruling. An example of a significant contribution is 1.0 microgram per cubic meter (annual average) for sulfur dioxide. 40 C.F.R. part 51, App. S, § III(A).

⁵See 50 Fed. Reg. 13130, 13150 (1985). In setting up a system for reviewing new sources of PM-10, EPA expanded the scope of section 51.165(b), so that in effect it applies to any project wherever it is located so long as it is “major” for PM-10. See 52 Fed. Reg. 24686-87, 24688, 24713 (1987). Thus reconstituted, § 51.165(b) merges confusingly with §§ 51.160–51.163 and supplements the PSD system. It supplements the PSD system because it defines “major” as 100 tpy for all source categories, while PSD defines “major” as 100 tpy for only some categories and 250 for the rest.

⁶The program is to apply in the sense that it is to prohibit a person from beginning actual construction without a permit. 40 C.F.R. § 51.166(i)(1). “To begin actual construction” means in general to initiate physical, on-site construction activities of a permanent nature, including “installation of building supports and foundations, laying of underground pipework, and construction of permanent storage structures.” 40 C.F.R. § 51.166. Limited preliminary activities such as site-clearing and ordering of materials are allowed, but occur at the risk of the applicant and do not guarantee that a permit will be issued. Memorandum, Construction Activities Prior To Issuance of a PSD Permit with Respect to “Begin Actual Construction,” from Director, Stationary Source Compliance, to Robert R. DeSpain, Chief, Air Programs Branch, Region VIII (Mar. 28, 1986) at 2. Similarly, entering construction contracts does *not* constitute the prohibited “beginning of actual construction” when it occurs prior to the issuance of a PSD permit. See Memorandum, Whether the PSD Regulations Prohibit Entering Into Construction Contracts Without a Permit, from Peter H. Wyckoff, Attorney, Air, Noise, and Radiation Division, to Regional Counsel, Regions I-X (Jan. 17, 1979). The prohibition on actual construction extends to the “emissions unit,” 40 C.F.R. § 51.166(b)(11), which is defined as any part of an entire source which would emit any regulated pollutant. 40 C.F.R. § 51.166(b)(7). EPA interprets “emissions unit” broadly to include any installation necessary to accommodate any unit subject to regulation under any part of the Act. *Id.* Thus, if an emissions unit is an integral part of the source such that the source would not serve its original intent but for inclusion of the unit, the PSD permit must be obtained before construction of the unit begins. *Id.* For a related case with an odd twist, see *Save the Valley, Inc. v. Ruckelshaus*, 565 F. Supp. 709, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20881 (D.D.C. 1983). Beginning actual construction is distinct from “commencing” construction. For the definition of construction, see Clean Air Act § 169(2), 42 U.S.C.A. § 7479(2)(A). See also § 12:113.

⁷See 40 C.F.R. § 51.166(i)(1)–(3).

under new section 112.⁸ EPA has interpreted this provision to operate directly on the federal PSD regulations so as to exempt the following pollutants prospectively from both the applicability and substantive requirements of those regulations: arsenic, asbestos, benzene, beryllium, hydrogen sulfide, mercury, radionuclides, and vinyl chloride.⁹ This means that a state is free to maintain PSD review of those pollutants, or discontinue it, as it sees fit.¹⁰ In contrast, EPA under its own PSD regulations has no choice but to abandon such review prospectively.¹¹

Second, section 51.166 itself expressly allows an exception for any project that emits in “major” amounts only nonattainment pollutants.¹² Since every area of the country is designated attainment or unclassifiable for some pollutant, section 51.166 in effect requires PSD review for any new project that would emit any regulated pollutant in “major” amounts, except for any project that would emit only nonattainment pollutants in such amounts.¹³ To obtain a permit, an applicant in general must satisfy the substantive PSD requirements not only for the pollutants the project would emit in “major” amounts, but also for the pollutants it would emit in “significant” amounts.¹⁴ The applicant may ignore—for PSD purposes—any nonattainment pollutants the project would emit.¹⁵

⁸Section 112(b)(6), 42 U.S.C.A. § 7142(b)(6).

⁹EPA has articulated this interpretation so far only in the form of an internal memorandum: Memorandum, New Source Review (NSR) Program Transitional Guidance, from John S. Seitz, Director, Office of Air Quality Planning and Standards (March 11, 1991), Attachment at 1-3.

¹⁰See Clean Air Act § 116, 42 U.S.C.A. § 7416, and the preservation clause in Clean Air Act § 112(d)(7), 42 U.S.C.A. § 7412(d)(7).

¹¹EPA's guidance goes on to point out that each of those pollutants would still be subject to PSD review to the extent that it is part of a more general class of pollutant, for example, volatile organic compounds, which are regulated for their contribution to ozone. Memorandum, New Source Review (NSR) Program Transitional Guidance, from John S. Seitz, Director, Office of Air Quality Planning and Standards, 3 (March 11, 1991). Also, the guidance clarifies that a BACT analysis must still take into account the effect that different controls for nonexempt pollutants would have on the exempt ones. *Id.* at 3-4. Finally, the guidance delineates the prospective effect of section 112(b)(6) on the federal PSD regulations by stating that it applies to all projects for which a federal PSD permit had not issued prior to November 15, 1990. *Id.* at 2. Increases in hazardous air pollutants still must undergo permit review in some circumstances. See Clean Air Act § 112(g), 42 U.S.C.A. § 7412(g).

¹²See 40 C.F.R. § 51.166(i)(5). Actually, this exemption is only implicit in 40 C.F.R. § 51.166(i)(5), inasmuch as that provision only exempts emissions of nonattainment pollutants from the substantive PSD requirements. EPA, however, has interpreted the provision to exempt a project that emits only nonattainment pollutants in “major” amounts from the permit requirements as well. See 45 Fed. Reg. 52711 (1980). The regulations also contain a little-used exemption that applies to any source that would constitute “a nonprofit health or nonprofit educational institution” or any modification that would occur at such an institution. See Clean Air Act § 169(1), 42 U.S.C.A. § 7479(1); see 40 C.F.R. § 51.166(i)(4)(i). For a specific application of this exemption, see 46 Fed. Reg. 30194 (1981); see also *Town of Brookline v. Gorsuch*, 667 F.2d 215, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20015 (1st Cir. 1981). In addition, a state under certain conditions may exempt a previously permitted portable source from obtaining a new PSD permit when it temporarily relocates. 40 C.F.R. § 51.166(i)(4)(iii).

¹³Thus, geothermal power plants, which typically emit only hydrogen sulfide in “major” amounts, are subject to PSD permitting. See 45 Fed. Reg. 52712 (1980) (item 8). Sources that are major only with respect to a nonattainment pollutant, of course, are subject to 40 C.F.R. § 51.165.

¹⁴See 40 C.F.R. §§ 51.166(i)(2), (j)(2), (m)(1)(i); 45 Fed. Reg. 52711 (1980). The significance thresholds range from 100 tpy for carbon monoxide to 0.004 tpy for beryllium. See 40 C.F.R. § 51.166(b)(23)(i).

¹⁵40 C.F.R. § 51.24(i)(5). Detailed examples of how these rules for geographic and pollutant applicability work for both PSD and nonattainment purposes appears at 45 Fed. Reg. 52711-12 (1980). It should be noted that 40 C.F.R. § 51.166 requires not only a permit program, but also periodic assessment of increment consumption and SIP tightenings as necessary to attain and maintain the increments. See 40 C.F.R. § 51.166(a). In 1980, EPA put together a manual on the coverage and content of the PSD regulations: OAQPS, Prevention of Significant Deterioration Workshop Manual (EPA-450/2-80-081) (Oct. 1980). For the applicability of PSD permitting to sources of PM-10, see 52 Fed. Reg.

Beyond these requirements for SIP content in 40 C.F.R. Part 51, there are three other sets of nonattainment and PSD regulations stemming from the 1977 Amendments, namely, the Offset Ruling, section 52.24, and section 52.21.

Although these six nonattainment and PSD regulations vary in their coverage, they all use the key concepts of “major stationary source” and “major modification” to describe that coverage and, indeed, define those concepts in very much the same way.¹⁶

The Offset Ruling has the same project and pollutant applicability as section 51.165,¹⁷ but it is operative only as an interim measure pending adoption of SIP provisions meeting applicable Part D requirements. Most significantly, prior to enactment of the 1990 amendments, EPA applied the Offset Ruling to newly designated nonattainment areas that had not yet adopted a NSR permitting regulation meeting the requirements of section 51.165(a).¹⁸ As noted above, the 1990 Amendments automatically redesignated many areas as nonattainment for PM-10 as a matter of law,¹⁹ and provided for the expeditious regulatory redesignation of many other areas as nonattainment for ozone and carbon monoxide.²⁰ As discussed more fully in a later section, EPA adopted a transition policy under which it applied the Offset Ruling as necessary pending SIP revisions implementing the 1990 Amendments, and allowed states to defer application of the new statutory requirements during the time provided in Title I for SIP development.

24682-86 (1987).

¹⁶The nonattainment NSR and PSD applicability provisions described in the following sections are largely the same under all six regulations. From 1976 through July 1983, a single office within EPA compiled PSD applicability determinations. These determinations, as well as an index and digest, are available from the Stationary Source Compliance Division, OAQPS, in Washington, D.C.

¹⁷40 C.F.R. part 51, Appendix S, §§ (I), III(A).

¹⁸See 40 C.F.R. § 52.24(k); 48 Fed. Reg. 50686, 50695 (1983). See also 44 Fed. Reg. 20372, 20379 n.36 (1979). The offset ruling also governs permitting of projects locating in attainment or unclassifiable areas but affecting nonattainment areas during the period before adoption and approval of a section 51.165(b) program. 40 C.F.R. part 51, Appendix S, § III(A); 45 Fed. Reg. 31310 (1980). Indeed, avoiding the Offset Ruling seems to be the only reason a state would have for adopting a permit program under 40 C.F.R. § 51.165(b).

EPA recently opined that the Offset Ruling also applies to sources of TSP in an area that is still designated nonattainment for TSP under section 107, where the state has yet to receive approval of a new source review program under section 173 and the construction ban for TSP dissolved with the repeal of the TSP NAAQS. See Letter from Edward J. Lillis, Chief, Noncriteria Pollutant Programs Branch, OAQPS, to Michael J. Hayes, Manager, Division of Air Pollution Control, IEPA (Jan. 12, 1989).

¹⁹Section 101(a) of Pub. L. 101-549, 104 Stat. 2399 (1990) created a new section 107(d)(4)(B)(i) of the Act that designated the areas identified as Group I in EPA's 1987 promulgation of the PM-10 NAAQS as nonattainment (see 52 Fed. Reg. 29383 (1987)), and a new section 107(d)(4)(B)(ii) which designated as nonattainment any area that had experienced a monitored violation of the PM-10 NAAQS. EPA published a list of such “monitored nonattainment” areas just prior to enactment of the 1990 Amendments. 55 Fed. Reg. 45799 (1990); see also 56 Fed. Reg. 11101 (Mar. 15, 1991) (announcement of areas designated as nonattainment for PM-10 and classified as moderate at enactment of 1990 Amendments); 56 Fed. Reg. 37654 (Aug. 8, 1991) (correction of certain information in March 15 notice); 56 Fed. Reg. § 6694 (codification of areas redesignated at enactment). On September 22, 1992, EPA proposed to redesignate several additional areas as nonattainment for PM-10 or 50₂ pursuant to section 107(d)(3) of the amended Act. 57 Fed. Reg. 43846.

²⁰For example, Pub. L. 101-549, § 101(a), 104 Stat. 2399, created new sections 107(d)(4)(A)(i) and 107(d)(4)(A)(ii) requiring states to submit new designations for ozone and carbon monoxide areas within 120 days of enactment, and requiring EPA to act upon such submissions within 120 days. Section 101(a) of the Amendments also created a mechanism under new section 107(d)(4)(A)(iv) that could expand existing nonattainment areas to include an entire consolidated metropolitan statistical area unless within 45 days after enactment the State submitted a letter notifying EPA that it would seek narrower boundaries. In November 1991, EPA published a final rule setting forth the attainment status, classification and boundaries of numerous areas for ozone and carbon monoxide. 56 Fed. Reg. 56699 (1991).

Section 52.24, which embodies the construction bans in former sections 110(a)(2)(I) and 173(4) of the Act, applies like the other nonattainment regulations only to “sources” or “modifications” locating in a nonattainment area that would emit the nonattainment pollutant in “major” amounts.²¹ Section 52.24(a), reflecting section 110(a)(2)(I), applies only if the SIP for the nonattainment area has yet to be fully approved as meeting the requirements of the 1977 Amendments. Hence, it is a sanction for a failure in planning. In contrast, 40 C.F.R. section 52.24(b), reflecting section 173(a)(4), applies only if the SIP for the nonattainment area is not being carried out.²² Finally, the coverage of section 52.21, the federal PSD permitting program, exactly parallels the coverage of section 51.166.²³

All of these interlocking regulations now need an overhaul because of the Clean Air Amendments of 1990, especially the nonattainment regulations. (EPA plans to propose a package of comprehensive updated NSR regulations in early 1996.) One major structural change is the elimination of a construction ban as a sanction for future failures to create an approved SIP.²⁴

§ 12:94 Current federal requirements—Nonattainment and PSD permitting—Applicability—Definition of “major stationary source”

A “major stationary source” is simply any “stationary source” that emits or has the “potential to emit” a threshold amount of pollution.¹

§ 12:95 Current federal requirements—Nonattainment and PSD permitting—Applicability—Definition of “major stationary source”—Size threshold

For nonattainment purposes the general threshold is 100 tpy of a NAAQS pollutant.¹ For PSD purposes, the threshold is 100 tpy of a regulated nonexempt pollutant for sources in twenty-six industrial categories and 250 tpy for sources

²¹As noted above, 40 C.F.R. § 52.24 states an exception to this general rule: Neither ban applies to a project locating in a “clearly defined part of a nonattainment area (such as a political subdivision of a state), where EPA finds that a plan which meets the requirements of Part D is in effect and is being implemented in that part.” 40 C.F.R. § 52.24(j).

²²For detailed discussion of the applicability of these bans, *see* 48 Fed. Reg. 50686 (1983); 52 Fed. Reg. 26404 (1987); 52 Fed. Reg. 45044 (1987). On another dimension, section 52.24(a) bars construction of projects whose permit applications became complete after the time when the SIP should have been in conformity with the 1977 Amendments, whereas section 52.24(b) bars the issuance of permits whenever the SIP is not being carried out.

²³40 C.F.R. § 52.21 contains several “grandfather” exemptions, which section 51.166 does not contain. *See* 40 C.F.R. § 52.21(i)(4). These exemptions are now largely moot, however.

²⁴*See* Clean Air Act § 179, 42 U.S.C.A. § 7409. Apparently, the pre-existing bans remain in effect, however. *See* Clean Air Act Amendments of 1990, Pub. L. No. 101-529, § 108(1). Moreover, EPA retains the power to trigger a construction ban by determining that the state is not adequately implementing the SIP. *See* Clean Air Act § 173(a)(4), 42 U.S.C.A. § 7503(a)(3). In addition, EPA has authority to issue a construction ban under section 113(a)(5)(A) of the amended Act whenever “the Administrator finds that a State is not acting in compliance with any requirement or prohibition of the Act relating to the construction of new sources or the modification of existing sources.”

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¹40 C.F.R. § 51.165(a)(1)(iv)(A); *see also* 40 C.F.R. §§ 52.21(b)(1)(i), 52.24(f)(4)(i). These regulations clarify that a physical change at a minor source which change by itself would qualify as a “major stationary source” is to be treated as a “major stationary source.” *See, e.g.,* 40 C.F.R. § 51.165(a)(1)(iv)(A)(2); 45 Fed. Reg. 52702 (1980).

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¹40 C.F.R. § 51.165(a)(1)(iv)(A)(1). *See also* Clean Air Act § 302(j), 42 U.S.C.A. § 7602(j). Ozone, a NAAQS pollutant, is created by the photochemical reaction of volatile organic compounds (VOC); sources emit VOC, not ozone. Hence, both the nonattainment and PSD regulations expressly provide

outside those categories.² Of course, states are free to set lower thresholds in their own NSR programs.³

Particles of certain sizes suspended in air are a NAAQS pollutant, and as a result, dust from large surface areas may be enough to bring the facility within the PSD rules. However, under the terms of section 302(j) of the Act, fugitive emissions may be considered in threshold applicability calculations only “as determined by rule by the Administrator.”⁴ “Fugitive emissions” are emissions that “could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening.”⁵ Through rulemaking pursuant to section 302(j), EPA has determined that fugitive emissions from twenty-seven source categories should be included in threshold determinations.⁶ In 1984, the Agency promulgated rules for decisionmaking under section 302(j) which provide that EPA will propose to list other categories which have a potential for significant air quality deterioration, and will make a final listing unless commentators demonstrate countervailing socioeconomic impacts.⁷ Consequently, in 1984 EPA proposed to add coal strip mines to the current list of source categories on the ground that they are significant emitters of fugitive dust.⁸ EPA finally decided in November 1989 not to list strip mines, on the ground that

that a source that is “major” for VOC is “major” for ozone. *See, e.g.*, 40 C.F.R. §§ 51.165(a)(1)(iv)(B), 51.166(b)(1)(ii).

The 1990 amendments reduce this threshold progressively for ozone nonattainment areas in proportion to the ozone nonattainment problem. Thus, while the threshold remains 100 tpy for “marginal” and “moderate” areas, it becomes 50 tpy for “serious” areas, 25 tpy for “severe” areas, and 10 tpy for “extreme” areas. *See* Clean Air Act § 812, 42 U.S.C.A. § 7511a. *See, e.g.*, Clean Air Act § 189, 42 U.S.C.A. § 7513a.

²*See, e.g.*, 40 C.F.R. § 51.166(b)(1)(i)(a)–(b). *See also* Clean Air Act § 169(1), 42 U.S.C.A. § 7479(1). Examples of these 26 categories are iron and steel plants, large electric generating plants, refineries, and chemical process plants. The prototype for this list of categories appeared in the original PSD regulations. *See* 40 C.F.R. § 52.21(d) (1977). *See also* 7 *Envtl. Pol’y Div., Cong. Research Serv., A Legislative History of the Clean Air Act Amendments of 1977* 5261–64 (Comm. Print. 1978) (Senate debates, July 29, 1976) (raw data from EPA from which list probably derived).

³*See* Clean Air Act § 116, 42 U.S.C.A. § 7416. For an unsuccessful attempt by an environmental group to reach a ski resort that would not have “major” emissions of its own, but would indirectly cause violations of the Class II increment for PM by virtue of associated woodstove emissions, by arguing that the Forest Service violated the SIP conformity requirements of section 176(c) of the Act when it issued a use permit, *see* *Methow Valley Citizens Council v. Regional Forester*, 16 *Envtl. L. Rep. (Envtl. L. Inst.)* 20641 (D. Or. 4–30–86).

⁴In *Alabama Power*, the D.C. Circuit held that the Act’s section 302(j) restriction on fugitive emissions applies for PSD as well as nonattainment purposes, even though the PSD provisions have their own definition of major source in section 169. However, the court also held that once a new PSD source is determined to be major, fugitive emissions must always be considered in determining whether emissions of a given pollutant are significant, and thus, subject to substantive PSD requirements. *Alabama Power Co. v. Costle*, 636 F.2d 323, 369–70, 10 *Envtl. L. Rep. (Envtl. L. Inst.)* 20001, 20016–17 (D.C. Cir. 1979). In September 1995, the same court decided that the section 302(j) restriction does not govern the definition of “major source” in section 112 because unlike the PSD and nonattainment definitions section 112 specifies that the sources in question are those “located within a contiguous area and under common control.” In the view of the court, the quoted language satisfies the “[e]xcept as otherwise expressly provided” clause in section 302(j). *See* *National Mining Ass’n v. EPA*, 59 F.3d 1351, 1361, 25 *Envtl. L. Rep. (Envtl. L. Inst.)* 21390 (D.C. Cir. 1995).

⁵*See, e.g.*, 40 C.F.R. §§ 51.165(a)(1)(ix), 51.24(b)(20).

⁶*See, e.g.*, §§ 51.165(a)(4), 51.166(i)(4)(ii). The list includes not only the 26 source categories named in section 169(1) of the Clean Air Act, but also (as a single group) the categories regulated under sections 111 and 112 of the Act as of August 7, 1980.

⁷49 *Fed. Reg.* 43202 (1984).

⁸49 *Fed. Reg.* 43211 (1984); 51 *Fed. Reg.* 7090 (1986); *see also* *Sierra Club v. Gorsuch*, 715 F.2d 653, 13 *Envtl. L. Rep. (Envtl. L. Inst.)* 20809 (D.C. Cir. 1983) (ordering EPA to consider listing of strip mines); *Sierra Club v. Thomas*, 828 F.2d 783, 17 *Envtl. L. Rep. (Envtl. L. Inst.)* 21198 (D.C. Cir. 1987) (holding that EPA had not unreasonably delayed completion of the strip mines rulemaking).

the Department of the Interior had adequate regulatory authority to protect against adverse air quality impacts.⁹ Both the rules of decision under section 302(j) and the determination not to list strip mines were promptly challenged and ultimately upheld.¹⁰

Another controversial area has been the treatment of vessel emissions. The main focus of this controversy has been whether to include the dockside emissions of ships as primary emissions of marine terminals in determining whether such facilities are major sources. In 1982, the Reagan Administration sought to reverse the prior policy of including such emissions in threshold determinations.¹¹ As noted in the previous section, the D.C. Circuit invalidated this decision and remanded the issue to EPA for further rulemaking.¹² Early in 1990, EPA took the position that the D.C. Circuit decision had the effect of reinstating the prior policy of including dockside emissions.¹³ The 1990 Amendments added provisions to the Act that directly address for the first time VOC emissions from the loading and unloading of tank vessels, but these provisions do not address the question of how much of the dockside emissions are to be included in determining “major” source status.¹⁴ The Amendments also added a new section 328 that in general terms extends to outer continental shelf activities the air pollution control requirements, including NSR, of the corresponding onshore area. Among the activities covered are emissions from drilling platforms and tank and exploratory vessels while attached to drilling platforms and other offshore stationary sources.¹⁵

⁹54 Fed. Reg. 48870 (1989). EPA agreed with industry and DOI comments that for most mines, the costs of regulation would far outweigh benefits. EPA rejected those arguments as to an alternative that would have regulated only strip mines affecting national parks and other areas of special concern. Nevertheless, EPA declined to list even this narrow category of mines. The Agency first found that DOI had parallel authorities already in place (in particular, those under the Surface Mining Control and Reclamation Act, 30 U.S.C.A. 1201 et seq.) that could provide benefits equivalent to those provided by PSD. Although the Clean Air Act contains no provision that EPA may decline to regulate due to the existence of similar regulatory authority elsewhere, EPA reasoned that it would be inherently costly to add another set of functionally duplicative regulations. *See* 54 Fed. Reg. 48874-75, 48878-80. If this theory is reached and upheld on review, it might support further efforts by EPA to base regulatory decisions on theories of economic efficiency, such as those embodied in the nationwide trading system for sulfur dioxide allowances under Title IV of the 1990 Clean Air Act Amendments, rather than a strict adherence to the command-and-control approach of the 1970 and 1977 Amendments generally, or the PSD program in particular, which places a high premium on public participation in the decision-making process.

¹⁰In *National Coal Ass'n v. EPA*, No. 84-1609 (D.C. Cir., filed 1984), both industry and environmental groups challenged EPA's interpretation of the section 302(j) rulemaking requirements. That case was briefed in 1986 but the court informally held it in abeyance pending a final decision on the listing of strip mines. *Sierra Club* petitioned for review of the no-list decision, *Sierra Club v. Reilly*, No. 90-1028 (D.C. Cir., filed 1990), which was later consolidated with the *National Coal* case, which was renamed *NRDC v. EPA*. The court rendered its decision in June 1991. The decision appears at 937 F.2d 641 (D.C. Cir. 1991). The court deferred heavily to the Agency's construction of section 302(j), on the ground that it was permissible, and to its cost-benefit analysis regarding strip mines, on the ground that it was not arbitrary or capricious.

¹¹*See* 47 Fed. Reg. 27554 (1982); 45 Fed. Reg. 52676, 52696 (1980).

¹²*Natural Resources Defense Council v. EPA*, 725 F.2d 761, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20191 (D.C. Cir. 1984).

¹³*See* Letter from John Calcagni, Director, Air Quality Management Division, OAQPS, to Ken Wade (Jan. 8, 1990); *see also* Clean Air Act § 302(z), 42 U.S.C.A. § 7602(z).

¹⁴*See* Clean Air Act § 103, 104 Stat. 2399 (§ 183(f)). These provisions require EPA to set NSPS-style standards for the emissions and then preempt state and local governments from regulating them with a less stringent standard of their own. This appears to place a floor on the stringency of BACT and LAER determinations made during PSD/NSR review.

¹⁵Pursuant to section 328(a)(1), the new regulatory program for outer continental shelf (OCS) sources applies along the Pacific, Arctic, and Atlantic Coasts, and along the Gulf Coast roughly

§ 12:96 Current federal requirements—Nonattainment and PSD permitting—Applicability—Definition of “major stationary source”—Stationary source

NSR applies only to a “stationary source” of pollution. This term is broadly defined as “any building, structure, facility, or installation.”¹ That phrase as a whole is in turn defined² as all of the pollutant-emitting activities that belong to the same industrial grouping,³ are located on one or more contiguous or adjacent properties,⁴

eastward of the Florida-Alabama border. EPA’s OCS regulations effectively federalize existing onshore state NSR programs and apply them to sources located within twenty-five miles of states’ seaward boundaries, and apply federal PSD rules to sources beyond twenty-five miles. *See* 57 Fed. Reg. 40792 (to be codified at 40 C.F.R. part 55) (Sept. 4, 1992). The regulations provide special transitional rules for sources that commenced construction between publication of the proposed OCS rules (56 Fed. Reg. 63774, Dec. 5, 1991) and publication of the final rules. *See* 57 Fed. Reg. 40798-99, 40810 (to be codified at 40 C.F.R. 55.6(e)). The regulations also provide for delegation of implementation and enforcement of the newly federalized state rules back to the states. *See* 57 Fed. Reg. 40801-02, 40812-13 (to be codified at 40 C.F.R. 55.11).

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¹*See, e.g.*, 40 C.F.R. §§ 51.165(a)(1)(i), 51.166(b)(5).

²*See, e.g.*, 40 C.F.R. §§ 51.165(a)(1)(ii), 51.166(b)(6).

³Pollutant-emitting activities are deemed part of the same industrial grouping if they are within the same two-digit code “Major Group” Standard Industrial Classification Manual (Exec. Office of the President, Office of Management and Budget 1987). Each source is classified according to its “primary activity,” which is determined by its principal product produced or distributed, or service rendered. 45 Fed. Reg. 52676, 52695 (1980). A special application of this general requirement occurs where the pollutant-emitting activities are largely fugitive in nature. Under section 302(j) of the Act, only fugitive emissions from those categories of sources listed under, *e.g.*, 40 C.F.R. §§ 51.165(a)(4) and 51.166(i)(4) (ii), are considered for threshold applicability purposes. *See* § 12:93. Thus, when a single source consists of two activities within the same two-digit code, and only one activity is within a “listed” source category, and the primary activity is not within a listed source category, then the fugitive emissions from that activity are not considered in determining whether the source is major. Nevertheless, the fugitive emissions from the secondary, “listed” activity would be considered in determining whether the source, as a whole, is major. For example, consider a surface coal mine located adjacent to a coal cleaning plant. Strip mines are not a currently listed source category. *See* § 12:93. Coal cleaning plants are listed. *See, e.g.*, 40 C.F.R. §§ 51.165(a)(4)(a), 51.166(i)(4)(ii)(a). Strip mining is considered to be the primary activity of such a source. Under EPA policy, the massive fugitive emissions of the mining activity are excluded in considering whether the source is major. However, the fugitive emissions of the coal cleaning plant, as well as the stack emissions of the plant and the mine, are considered. If the threshold level is exceeded on this basis, then the entire source, including the strip mine, is subject to NSR. *See* Letter from Edward E. Reich, Director, Stationary Source Compliance Division to John M. Daniel, Virginia Air Pollution Control Board, May 31, 1983; Memorandum, PSD Applicability, South Hoshah Mine, from Director, Division of Stationary Source Enforcement to Allyn Davis, Director, Air and Hazardous Materials Division, Region VI (June 9, 1980). EPA reaffirmed this policy in the context of its decision not to “list” surface and coal mines. *See* 54 Fed. Reg. 48870, 48880-84 (1989).

Primary and support facilities may, in certain circumstances, be classified as a single source even when the support facility has a different two-digit SIC code. 45 Fed. Reg. 52695 (1980). Support facilities are typically those which convey, store, or otherwise assist in the production of the principal product. *Id.*; *see also* 54 Fed. Reg. 48880-84; Letter from Steve Rothblatt, Chief, Air and Radiation Branch, EPA Region V, to Robert P. Miller, Executive Secretary, Michigan Air Pollution Control Commission, July 27, 1990 (expansion of boiler and addition of precipitated calcium carbonate facility at a pulp and paper plant support the same economic enterprise, and thus are considered a single modification for PSD applicability purposes); Letter from William G. Rosenberg, Assistant Administrator, to Carol Dinkins, Vinson & Elkins, Sept. 5, 1991 (Golden Aluminum Co. facility that smelts 80 percent of feedstock from used beverage cans to produce rolled aluminum as end product is classified as secondary metals production facility and subject to 100 tons per year PSD applicability threshold).

⁴“Contiguous or adjacent properties” generally do not encompass long-line operations such as pipelines or power lines. Thus, for example, EPA would not treat all of the pumping stations along a multistate pipeline as one source. 45 Fed. Reg. 52695 (1980). However, such determinations are made on a case-by-case basis. *Id.* In one instance EPA ruled that two refinery facilities, interconnected by pipelines 1.8 miles in length which transported intermediary products between the facilities, consti-

and are under the ownership and control of the same person.⁵ This broad “plantwide” definition is crucial in determining NSR applicability to major modifications.⁶

§ 12:97 Current federal requirements—Nonattainment and PSD permitting—Applicability—Definition of “major stationary source”—Potential to emit

Because a source is not yet operational when it undergoes NSR, applicability determinations must be based on the source’s “potential to emit.” EPA regulations define this term as the maximum capacity of a source to actually emit a pollutant under its “physical and operational design.”¹ The regulations expressly include air pollution control equipment in the “design” of the source, but only to the extent that a requirement for such equipment is “federally enforceable.”² Thus, on the face of the regulations, whether a new source would emit 100 (or 250) tpy of a pollutant is to be determined by reference to the rate of emissions *after* the application of federally enforceable controls. Similarly, restrictions on hours of operation, or on types or amounts of materials combusted, stored or processed, in general must be federally enforceable in order to be considered in determining potential to emit.³ To be “federally enforceable,” these limitations must be required under section 111 of the Act;

tuted a single source for PSD purposes. *See* Memorandum, Shell Oil Company Wilmington Complex Specification of “Source,” from Director, Division of Stationary Source Enforcement to Clyde B. Eller, Director, Enforcement Division, Region IX (May 16, 1980).

⁵EPA has considered and rejected the use of a rigid voting-interest test in determining questions of control, both for purposes of the definition of source, and for purposes of determining statewide compliance under nonattainment NSR. *See* § 12:107. 45 Fed. Reg. 59874, 59878 (1980); 44 Fed. Reg. 3274, 3279 (1979). Instead, the Agency has stated that it will rely on case-by-case determinations, and be guided by the general definition of control used by the Securities and Exchange Commission. 45 Fed. Reg. 59878 (1980). In one case, EPA held that two paper mills located on a single piece of property constituted a single source for PSD purposes where the first mill owned the property and the second mill was a joint venture owned half by the first mill and half by a third party. Memorandum, Definition of Source, from Director, Division of Stationary Source Enforcement, to Diana Dutton, Director, Enforcement Division, Region VI (Mar. 16, 1979); *see also* Memorandum, PSD Applicability: TEX-USS High Density Polyethylene Plant, from Director, Division of Stationary Source Enforcement to Allyn M. Davis, Director, Air and Hazardous Materials Division, Region VI (July 17, 1980). In another case, EPA stated that an airport constitutes a single source under the control of the airport authority where that authority acquires property, develops plans, and contracts for construction, even though the authority later leases discrete portions of the airport’s pollutant emitting facilities (such as refueling or maintenance activities) to independent lessees. Memorandum, PSD Applicability Determination for Multiple Owner/Operator Point Sources Within a Single Facility, from John Calcagni, Director, Air Quality Management Division, EPA, to Irwin L. Dickstein, Director, Air and Toxics Division, EPA Region VIII (Aug. 11, 1989).

⁶The 1990 Amendments appear to require a redefinition of the regulatory unit “source” for purposes of new source review in “serious” PM-10 nonattainment areas. The Amendments define “major stationary source” for that purpose to include “any group of stationary sources located within a contiguous area and under common control that emits, or has the potential to emit, at least 70 tons per year of PM-10.” Clean Air Act § 189, 42 U.S.C.A. § 7513a. This language suggests that prescribed burns and communities of woodstoves could be pulled into the new source review system.

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¹*See, e.g.*, 40 C.F.R. §§ 51.165(a)(1)(iii), 51.166(b)(4). EPA originally defined the terms as maximum capacity to emit in the absence of control; *see also* 43 Fed. Reg. 26380, 26391-92 (1978). But the D.C. Circuit reversed EPA on this point. *Alabama Power Co. v. Costle*, 636 F.2d 323, 352-55, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20001, 20006-08 (D.C. Cir. 1979).

²40 C.F.R. §§ 51.165(a)(1)(iii), 51.166(b)(4). *See* 45 Fed. Reg. 52676, 52688-89 (1980); *see also* *Ogden Properties, Inc. v. New Morgan Landfill Co.*, No. 94-CV-3048, slip op. at 23-26 (E.D. Pa. 9-22-95).

³*See, e.g.*, 40 C.F.R. §§ 51.165(a)(1)(iii), 51.166(b)(4). Under pressure from those struggling to come below the “major” source thresholds for purposes of section 112 (relating to hazardous air pollutants) and Title V (relating to operating permits), EPA has developed an exception to the general rule

section 112; the SIP; a permit issued under section 52.21; a permit issued under regulations approved pursuant to sections 51.160-163, 51.165(a), or 51.166; or an operating permit issued under either a SIP-approved program under Title I or a program under Title V.⁴

It has been common for a proposed source or modification to accept the imposition of control equipment, restrictions on the sulfur content of fuel, or limits on operating hours, in order to maintain emissions under threshold levels and thereby avoid triggering the whole panoply of NSR requirements. These limitations are frequently imposed for a given pollutant under a so-called “minor source” permit, issued by a state under the general preconstruction review requirements in §§ 51.160–51.163, to a new source or modification which would thereby agree not to reach “major” or “significant” levels for any pollutant.⁵ Alternatively, such limits may be contained in nonattainment or PSD permits issued because a source will exceed threshold levels

that limitations on a source’s design must be federally enforceable in order to be taken into account. In January 1995, EPA for the first time explicitly recognized that “inherent physical” limitations could be taken into account even absent their federal enforceability. *See* Memorandum, Options for Limiting the Potential to Emit (PTE) of a Stationary Source Under Section 112 and Title V of the Clean Air Act, from John S. Seitz, Director, Office of Air Quality Planning and Standards, and Robert I. Van Heuvelen, Director, Office of Regulatory Enforcement 7 (Jan. 25, 1995) (collecting prior memoranda on calculating PTE). EPA applied this exception in September 1995 to emergency electrical generators, concluding that utilization of such equipment is entirely a function of power outages and essential housekeeping activities such as maintenance and training, all of which are uncontrollable and episodic. In fact, EPA went so far as to offer 500 hours per year as an acceptable default value for predicting maximum usage. *See* Memorandum, Calculating Potential to Emit (PTE) for Emergency Generators, from John S. Seitz, Director, Office of Air Quality Planning and Standards (Sept. 6, 1995). At a different level, a district court has ruled that permit conditions that simply limit annual actual emissions, but do not address underlying physical or operational design factors, cannot be considered in determining a source’s potential to emit. *United States v. Louisiana-Pacific Corp.*, 682 F. Supp. 1122, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20350 (D. Colo. 1987). The same court later held that permit conditions which are knowingly and regularly violated also cannot be considered in determining potential to emit. *United States v. Louisiana-Pacific Corp.*, 682 F. Supp. 1141, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20912 (D. Colo. 1988).

⁴*See, e.g.*, 40 C.F.R. §§ 51.165(a)(1)(xiv), 51.166(b)(17). Among the changes EPA proposed in August 1983, pursuant to the settlement agreement in *Chemical Mfrs. Ass’n v. EPA*, was the deletion of the requirement that limits be federally enforceable, as opposed to merely legally enforceable by state or local bodies. *See* 48 Fed. Reg. 38742, 38747-48 (1983). Under the amendment, a limit would still have to be enforceable by some governmental entity. 48 Fed. Reg. 38748 (1983). It would also have to be discoverable by EPA and any other person. *Id.*

EPA took final action on that proposal in June 1989. *See* 54 Fed. Reg. 27274 (June 28, 1989). EPA retained the requirement for federal enforceability, but expanded the ways of achieving such enforceability to include operating permits issued pursuant to EPA-approved programs. EPA said it would approve a program for this purpose only if, among other things, it (1) “requires that all emissions limitations, controls, and other requirements imposed by such permits will be at least as stringent as any other applicable limitations and requirements contained in the SIP or enforceable under the SIP”; (2) prevents the issuance of permits “that waive, or make less stringent, any limitations or requirements contained in or issued pursuant to the SIP”; (3) assures that the requirements in the operating permits are “permanent, quantifiable, and otherwise enforceable as a practical matter”; and (4) requires timely notice to the EPA of each proposed and final permit. *Id.* at 27282. Operating permits issued under these programs have come to be called FESOPs (federally enforceable state operating permits).

Operating permit programs under Title V of the Act will greatly expand opportunities for sources to render controls and operational restrictions federally enforceable for NSR purposes. *See* 57 Fed. Reg. 32305 (1992) (to be codified at 40 C.F.R. 70.6(b)(1)). For a discussion of this point, *see* 57 Fed. Reg. 32279 (1992).

⁵If a new source or modification later becomes “major” because federally enforceable limitations are relaxed, then pursuant to EPA’s “source obligation” regulations, substantive NSR provisions apply as if the source had never been constructed. 40 C.F.R. §§ 51.165(a)(5)(ii), 51.166(r)(2). In an enforcement case, EPA took the position that a minor source permit was a sham because the company never intended to adhere to the permit limits as part of an economically viable business plan. Rather, the company agreed to these limits to enable construction and operation prior to receipt of a PSD permit.

for other pollutants.

A 1995 decision of the D.C. Circuit has fundamentally altered the definition of “potential to emit.” On September 15, 1995, the court issued a four-paragraph judgment on long-pending industry petitions to review the federal enforceability requirement. This decision⁶ vacated the regulations that embody the requirement in the definition of potential to emit and remanded the issue to EPA “for reconsideration in light of *National Mining Association v. EPA*.” In *National Mining*, the court had invalidated the federal enforceability requirement that EPA established for purposes of section 112 applicability on the grounds that (1) Congress certainly authorized EPA to ensure that credit is given only for controls that are “effective,” but (2) the record failed to explain adequately why a control had to be federally enforceable in order to be effective. In particular, the court did not see why effective controls could not flow out of a state or local program, even if the program was not enforceable by EPA.⁷

Gauging the full impact of this blast to a cornerstone of the PSD/NSR applicability system will have to await disposition of any petition to the U.S. Supreme Court and action on remand by EPA. But assuming that the litigation ends at this stage and that EPA interprets the decision as vacating only the requirement that limitations on “potential to emit” be enforceable at the federal level, thereby leaving a requirement for enforceability at the state or local level, the practical significance of the blast may be quite minor. For PSD/NSR applicability, as opposed to section 112 and Title V applicability, the primary vehicles for achieving bare enforceability in most states are the same preconstruction permit programs that companies would have used anyway to achieve federal enforceability. Those programs are statutorily required under section 110(a)(2)(C) and, as SIP programs, are “federally enforceable.” Moreover, the decision applies only to the federal PSD/NSR regulations and therefore would not directly affect state PSD/NSR definitions of “potential to emit,” which have already embraced the federal enforceability requirement and have received EPA approval.

Unless EPA decides on remand to repromulgate the federal enforceability requirement in accordance with a new rationale acceptable to the D.C. Circuit, the logic of *National Mining* would seem to direct EPA to excise the requirements for federal enforceability in two other applicability provisions—namely, those governing credibility of decreases in the netting calculation⁸ and the exclusion of fuel switches and increases in capacity utilization.⁹ One might suppose that deletion in the first case would relax the applicability system, and deletion in the second would tighten it.

Hence, EPA asserted, its remedies were not limited to requiring a PSD permit under the source obligation regulations. The source was instead deemed subject to enforcement action for beginning construction without a PSD permit. The case was settled by consent decree and payment of civil penalties. *See United States v. Maui Elec. Co.*, No. 88-00731 DAE (D. Haw.) (consent decree entered June 9, 1989). This position has since been formally adopted in the preamble to the June 1989 revisions to the NSR regulations. 54 Fed. Reg. 27274, 27280-81 (June 28, 1989); *see also* Memorandum, Guidance on Limiting Potential to Emit in New Source Permitting, from Terrell E. Hunt, Associate Enforcement Counsel, Office of Enforcement and Compliance Monitoring, and John S. Seitz, Director, Stationary Source Compliance Division (June 13, 1989).

⁶*Chemical Mfrs. Ass’n v. EPA*, No. 89-1514 (D.C. Cir. 9-15-95) (challenging 54 Fed. Reg. 27274 (June 28, 1989)).

⁷*National Mining Ass’n v. EPA*, 59 F.3d 1351, 1362-64 (D.C. Cir. 1995). Curiously, the court did not address—or even acknowledge—the existence of the extensive rationale EPA had provided in defense of federal enforceability in the preamble to the 1989 rulemaking. EPA had expressly concluded that federal enforcement capability was necessary to ensure that state-issued controls and emission limits were effective. *See* 54 Fed. Reg. at 27277. This reasoning was adopted by reference in the section 112 rulemaking at issue in *National Mining*. *See* 54 Fed. Reg. 12408, 12413-14 (Mar. 16, 1989).

⁸*See, e.g.*, 40 C.F.R. § 51.166(b)(3)(vi)(b).

⁹*See, e.g.*, 40 C.F.R. § 51.166(b)(2)(iii)(e), (f). Incidentally, *National Mining* would not reach the

However, the real-world consequences are likely to be negligible because companies will have little choice but to use the basic NSR programs (or Title V programs) anyway in order to achieve bare enforceability.¹⁰

§ 12:98 Current federal requirements—Nonattainment and PSD permitting—Applicability—Definition of “major modification”

Under the statutory definition, *any* increase in pollution resulting from *any* “physical change in, or change in the method of operation of, a stationary source” would constitute a “modification” and trigger NSR.¹ However, by regulation EPA has limited the application of NSR to only those “major” modifications that constitute a *nonroutine* physical or operational change,² and which result in a “*significant* net increase” in emissions.³ Because the environmental and economic stakes of NSR are so large, the ground rules for determining when changes at an existing source should trigger review have always been the most controversial aspect of the NSR program. Although certain of the specific issues have changed over time, there is no sign that the overall question will be finally settled in the near future.⁴

§ 12:99 Current federal requirements—Nonattainment and PSD permitting—Applicability—Definition of “major modification”—Definition of source

Determining whether a modification results in a significant net increase in emissions is a complex matter that requires an understanding of several regulatory terms. First, however, it is necessary to determine the scope of the pollutant-emitting activities which must be considered as the “source” for netting purposes. In *Alabama Power*, the D.C. Circuit upheld EPA’s broad, “plantwide” source definition for PSD netting purposes as consistent with the PSD goal of *maintaining* current air quality levels.¹ In this respect *Alabama Power* endorsed PSD usage of the “bubble” concept of summing all contemporaneous increases and decreases in emis-

requirement in the regulations that external offsets be federally enforceable for nonattainment purposes because the Act itself calls for that requirement. *See* Clean Air Act § 173(a), 42 U.S.C.A. § 7503(a).

¹⁰In light of this analysis, one might wonder why the PSD/NSR requirement for federal enforceability was troublesome enough to warrant legal attack. The answer probably is that (1) before the 1990 amendments emissions of certain hazardous air pollutants could be a basis for PSD applicability, but SIP-approved basic NSR programs did not reach such pollutants directly; (2) the comprehensiveness of the coverage of the basic NSR programs has not been fully appreciated; and (3) FESOP programs have come into existence only sporadically since 1989.

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¹The quoted definition is contained in section 111(a)(4) of the Act. The 1977 Amendments applied this preexisting NSPS definition to both nonattainment and PSD NSR. *See* Clean Air Act §§ 169(2)(C), 171(4), 42 U.S.C.A. 7479(2)(C), 7501(4).

²*See* 40 C.F.R. §§ 51.165(a)(1)(v)(C)(i), 51.166(b)(2)(iii)(a).

³40 C.F.R. §§ 51.165(a)(1)(v)(A), 51.166(b)(2)(i). *See* *Alabama Power Co. v. Costle*, 636 F.2d 323, 394–99, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20001, 20032–35 (D.C. Cir. 1979).

⁴EPA has been encouraging a new concept for defining what plant changes require preconstruction review and permitting, namely, plant-wide applicability limits (PALs). In simplest terms, a company would accept a plant-wide emissions limitation based on the plant’s actual emissions, and then in exchange would be able to make any physical changes as long as it stayed within the limits. For examples of plant-specific PALs, *see* Air Emission Facility Permit, No. 23GS-93-OT-1, Minnesota PCA (3M Tape Manufacturing Plant, St. Paul); Operating Permit, Application No. 14659, Oregon DEQ (Intel Plant).

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¹*Alabama Power Co. v. Costle*, 636 F.2d 323, 401, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20001, 20036 (D.C. Cir. 1979).

sions at an entire plant—as if it were encased by a bubble with a single opening through which pollutants were vented into the atmosphere—in determining whether NSR applies to modifications.²

In the first years of the nonattainment program EPA had defined source differently for Part D purposes so as to exclude major source plantwide bubbles in nonattainment areas. In keeping with the Part D purpose of *improving* air quality in nonattainment areas, EPA allowed netting of emissions changes only at the level of the individual pollutant-emitting unit within the plant.³ In a major regulatory reform initiative, the Reagan Administration in 1981 reversed this policy by conforming the Part D definition of source to the PSD “plantwide” definition.⁴ The Supreme Court, in *Chevron, U.S.A. v. Natural Resources Defense Council*, upheld this regulatory change as a reasonable exercise of EPA’s broad discretionary authority under the Clean Air Act.⁵

Despite the *Chevron* decision, questions remain regarding the implementation of the plantwide source definition under Part D. The Court left unanswered the question whether EPA may allow plantwide netting in nonattainment areas without approved attainment plans.⁶ In 1987, faced with the prospect that many states would miss the latest attainment deadlines provided under the 1977 Amendments, EPA answered this difficult question by adopting a policy requiring a state to show that it is making reasonable efforts to submit a complete approvable SIP. This requirement served to replace the assumption underlying EPA’s 1981 rulemaking that the Act would, independent of NSR, generate adequate attainment plans.

The 1990 Amendments, of course, created an entirely new context for the play of these issues by again extending state planning and attainment deadlines and by including specific provisions limiting the application of the plantwide definition of

²Plantwide netting allows a plant to compensate for additions or modifications that increase emissions by decreasing emissions elsewhere in the plant at the most cost-effective point. If there is no significant net increase in emissions, the owner avoids the use of state-of-the-art control technology and other NSR requirements.

³See 45 Fed. Reg. 52676, 52696-98 (1980). EPA considered, and ultimately rejected, a proposal to allow plantwide netting for purposes of substantive NSR purposes, but not applicability, in nonattainment areas with approved Part D plans, where the modification involved a change of an existing piece of equipment. See 44 Fed. Reg. 3274, 3276-77 (1979); 45 Fed. Reg. 5296-98 (1980). In contrast, EPA in 1978 allowed this form of plantwide netting as an exemption from substantive PSD requirements in attainment areas. See 43 Fed. Reg. 26380, 26394, 26407 (1978).

⁴46 Fed. Reg. 50766 (1981); 40 C.F.R. § 51.165(a)(1)(i). The 1981 rulemaking applied the plantwide definition of source for purposes of the construction moratorium as well. See 46 Fed. Reg. 50769 (1981); 40 C.F.R. § 52.24(f)(1). Thus, in areas where the moratorium is imposed, substantial modifications to existing sources may nevertheless be made as long as they do not result in a significant net increase in emissions.

⁵*Chevron, U.S.A. v. Natural Resources Defense Council*, 467 U.S. 837, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20507 (1984).

⁶In the 1981 rulemaking EPA may have assumed that nonattainment areas would either have an approved nonattainment plan or be subject to a construction moratorium under section 110(a)(2)(I) of the 1977 Act. Thus, the Agency explicitly gave states discretion to adopt the plantwide source definition only if they continued to demonstrate attainment of the NAAQS. See 46 Fed. Reg. 50767, 50769 (1981). The *Chevron* Court appeared to adopt this reasoning. See *Chevron, U.S.A. v. Natural Resources Defense Council*, 467 U.S. 837, 858, n.30, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20507, 20512, n.30 (1984). It came to pass, however, that numerous areas of the country lacked adequate Part D plans but were not subject to construction bans. EPA was in the process of imposing bans in these areas. See, e.g., 52 Fed. Reg. 26404 (1987) (proposed post-1987 nonattainment policy); 53 Fed. Reg. 20722 (1988) (proposed newly designated nonattainment areas); 53 Fed. Reg. 1780 (1988) (disapproval of Part D plan for Los Angeles area and imposition of construction ban). Now, under the 1990 Amendments, EPA lacks power to impose bans under section 110, but may do so under section 113(a)(5) or section 173(a)(4).

source in some of the worst ozone nonattainment areas.⁷ Thus, on one hand, by lowering NSR applicability thresholds and increasing offset ratios, Congress implicitly rejected EPA's central argument in *Chevron* that a vigorous NSR program was unnecessary in planning for attainment. On the other hand, by restricting use of the plantwide definition in only some areas, Congress implicitly endorsed its use—and the flexibility it provides—in all other areas, at least prior to the attainment planning deadlines of the 1990 Amendments. EPA's 1992 approval of a plantwide definition in one state seems to reflect these developments.⁸

§ 12:100 Current federal requirements—Nonattainment and PSD permitting—Applicability—Definition of “major modification”—Physical or operational change

After determining the scope of the source in question, one must establish whether the work at the source will constitute a “physical or operational change.” EPA rules exclude certain categories of work from the regulatory definition of physical or operational change. For example, some uses of alternative fuels (such as municipal solid waste), routine maintenance, repair, and replacement, and increases in production rates or operational hours (unless prohibited by a federally enforceable permit) are not considered physical or operational changes.¹ Thus, these activities cannot result in a major modification even if they would significantly increase emissions.

EPA has tended to view these exclusions narrowly in recent years. In adopting this stance, the Agency has asserted that Congress intended the PSD program to cover substantial new capital investments that have the potential to permanently increase actual emissions over current levels. Thus, EPA has ruled that an electric utility “life extension program” undertaken by the Wisconsin Electric Power Co. (WEPCO) that rehabilitates aged facilities, restores lost generating capacity, and extends the planned source retirement date by many years is subject to PSD. EPA determined that the replacement of major boiler components that normally last for the life of the facility, together with other upgrades and replacements, was not “routine.” The court of appeals affirmed EPA's construction of the physical change definition, reasoning that WEPCO's contrary view “would open vistas of indefinite immunity” from the PSD program.² The Agency also ruled that increases in production rates and operating hours closely related to the renovation work did not come

⁷Clean Air Act § 182(c)(6) contains a special rule requiring accumulation of emissions increases over the last five years for determining de minimis net increases in VOC emissions from source modifications in serious and severe nonattainment areas, while Clean Air Act §§ 182(c)(7), 182(c)(8), 182(e)(2) effectively require serious, severe, and extreme areas to employ a unit-specific definition of source unless the company nets out of some or all NSR requirements (depending on source size and area classification) review on a plantwide basis through internal offsetting reductions at a 1.3:1 ratio.

⁸See 58 Fed. Reg. 10964 (Feb. 23, 1993) (final approval of revisions to Massachusetts' nonattainment area NSR SIP). In that case, EPA acknowledged that (standing alone) use of the plantwide definition, by reducing major source NSR applicability, represented a relaxation of the SIP. EPA defended its approval of the plantwide definition on grounds that other changes would result in a net tightening of the SIP, that the state met the provisions of EPA's 1987 guidance, and on the basis of provisions in the 1990 Amendments discussed in the main text. See *id.*

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¹See 40 C.F.R. §§ 51.165(a)(1)(v)(C), 51.166(b)(2)(iii); cf. *Hawaiian Elec. Co. v. EPA*, 723 F.2d 1440, 1448, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20328 (9th Cir. 1984) (increase in sulfur content of fuel is major modification where it results in significant net increase in emissions and federally enforceable permit specified lower sulfur content).

²*Wisconsin Elec. Power Co. v. Reilly*, 893 F.2d 901, 909, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20414, 20417 (7th Cir. 1990). See 40 C.F.R. §§ 51.165(a)(1)(v)(C)(1), 51.166(b)(2)(iii)(a). WEPCO planned to replace rear steam drums in several units and perform other extensive rehabilitation work at its Port

within the relevant regulatory exclusion and again the court upheld EPA.³ The WEPCO case created a firestorm of criticism from the utility industry and other quarters. These critics view the prospect of NSR constraints on utility life extension programs and on pollution control projects that will be undertaken in response to the acid rain provisions of the 1990 Clean Air Act Amendments as unfairly raising the already-steep pollution control cost increases faced by industry. As discussed in more detail in the next section, Net Emissions Increase, EPA proposed regulatory changes to address these concerns and took final action on those changes.⁴

Among the final regulatory changes were utility-specific exclusions from the term “physical change or change in method of operation.” In the lead was a provision that presumptively excludes any “pollution control project” at an existing utility boiler, but allows the permitting authority to bar the exclusion on a determination that the project would not be environmentally beneficial on balance or would cause or contribute to a violation of a NAAQS, PSD increment, or “visibility limitation.”⁵

In July 1994, EPA Headquarters issued lengthy guidance extending the logic of

Washington generating station. In addition to the nature and infrequent occurrence of the work contemplated, EPA focused on the cost (\$87.5 million, representing 15 percent of replacement cost); the restoration of original generating capacity (and correlated emissions potential) from currently derated capacity; and the fact that the planned retirement dates of the units (put into service between 1935 and 1950) had been extended from 1992–1999 until 2010. *See* Wisconsin Elec. Power Co. v. Reilly, 893 F.2d 901, 910–13, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20414, 20417 (7th Cir. 1990); *see also* Letter from Don R. Clay, Acting Assistant Administrator, to John W. Boston, Vice President, WEPCO (Feb. 15, 1989) (final determination on reconsideration); Letter from Lee M. Thomas, Administrator, to John W. Boston, Vice President, WEPCO (Oct. 14, 1988); Letter from David Kee, Director, Air and Radiation Division, Region V, to John W. Boston (Sept. 12, 1988); Memorandum, Applicability of PSD and NSPS Requirements to the WEPCO Port Washington Life Extension Project, from Don R. Clay to David Kee (Sept. 9, 1988).

³Wisconsin Elec. Power Co. v. Reilly, 893 F.2d 901, 916 n.11, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20414, 20421 n.11 (7th Cir. 1990). *See* 40 C.F.R. §§ 51.165(a)(1)(v)(C)(6), 51.166(b)(2)(iii)(f). In *WEPCO*, EPA acknowledged that the potential for increased emissions would come from increases in production rate (the amount of fuel combusted per hour) and operating hours (capacity utilization), rather than from an increase in emissions rate (the amount of pollution per unit of fuel combusted). However, the Agency held that the regulatory exclusion was intended to cover increased production rates or operational hours that are linked to normal fluctuations in market conditions, not to basic changes in physical plants or operational strategy. Otherwise, even massive emissions increases obviously related to new capital investment could escape NSR just because they do not stem from inherently more polluting industrial processes. The court agreed. *See* Wisconsin Elec. Power Co. v. Reilly, 893 F.2d 901, 916 n.11, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20414, 20421 n.11 (7th Cir. 1990); *see also* Letter from Lee M. Thomas, Administrator, to John W. Boston, Vice President, WEPCO (Oct. 14, 1988); Memorandum, Applicability of PSD and NSPS Requirements to the WEPCO Port Washington Life Extension Project, from Don R. Clay to David Kee (Sept. 9, 1988).

In another case, EPA likewise determined that the extensive rehabilitation work necessary to reactivate copper smelting facilities after ten years was not routine and not within the exclusion for increased production or operation. EPA noted that the extent, nature, cost, and duration of the rehabilitation work constituted a physical change under the totality of the circumstances, although many of the individual work items might have been regarded as routine if executed as part of a normal maintenance regime at an operating plant. The startup after a ten-year hiatus was also deemed an operational change outside the regulatory exclusion. *See* Letter re Supplemental PSD Applicability Determination, Cyprus Casa Grande Corporation Copper Mining and Processing Facilities, from David P. Howekamp to Robert T. Connery (Nov. 6, 1987); *see also* 45 Fed. Reg. 52704 (1980) (regulatory exclusions for increased production or operation intended to allow a source to follow normal market fluctuations without PSD review, but not to enable significant departures from prior assessments of source's environmental impact). *See* § 12:102.

⁴For the final action, *see* 57 Fed. Reg. 32314 (1992).

⁵57 Fed. Reg. at 32334–38 (codified at 40 C.F.R. § 52.21(b)(3)(iii)(h)). There are also exclusions for clean coal technology demonstration projects and the “reactivation of a very clean coal-fired electric utility steam generating unit.” *Id.*

the exclusion for pollution control projects at utilities to other industries.⁶ The Agency carefully defined what sorts of projects could benefit from the exclusion and what substantive and procedural conditions would have to be met in a particular case. Eligible projects were (1) “installation of conventional or innovative emissions control equipment”; (2) switches to an inherently less-polluting fuel, coating, solvent, or refrigerant; and (3) a narrow range of other pollution prevention projects. EPA emphasized that the “replacement of an existing emissions unit with a newer or different one (albeit more efficient and less polluting) or the reconstruction of an existing emissions unit does not qualify as a pollution control project.”⁷ With respect to substantive and procedural requirements, EPA specified that an exclusion is not self-executing and may come into existence only on a determination by the relevant permitting authority, after public notice and opportunity for comment, that the project would be environmentally beneficial on balance and would not cause or contribute to a violation of any NAAQS or PSD increment, or adversely impact an air quality-related value of a Class I area.⁸

§ 12:101 Current federal requirements—Nonattainment and PSD permitting—Applicability—Definition of “major modification”—Net emissions increase

Once the existence of a physical or operational change at the source in question is determined, the focus shifts to whether the change would result in a “net emissions increase.” The regulations define “net emissions increase” as the sum of “any increase in actual emissions” that will result from the change in question, and any other “contemporaneous” increases and decreases in actual emissions that are “otherwise creditable.”¹ For existing units actual emissions are derived from the previous two-year period of operations.²

In contrast, for new or altered emissions units, at the time of permitting, operational data is obviously unavailable to determine future “actual” emissions.

⁶Memorandum, Pollution Control Projects and New Source Review (NSR) Applicability, from John S. Seitz, Director, Office of Air Quality Planning and Standards (July 1, 1994). EPA explained that this guidance is to govern in the period before completion of a long-promised rulemaking to reform the PSD/NSR system. EPA said this rulemaking would incorporate formal exclusions for pollution control projects.

⁷Memorandum, Pollution Control Projects and New Source Review (NSR) Applicability, from John S. Seitz, Director, Office of Air Quality Planning and Standards 2 (July 1, 1994).

⁸Memorandum, Pollution Control Projects and New Source Review (NSR) Applicability, from John S. Seitz, Director, Office of Air Quality Planning and Standards 3 (July 1, 1994).

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¹40 C.F.R. §§ 51.165(a)(1)(vi)(A), 51.166(b)(3)(i). “Contemporaneous” increases and decreases are those which occurred during a reasonable period (as specified by the state in the NSR regulations it submits for approval) prior to the increase which will result from the proposed modification. 40 C.F.R. §§ 51.165(a)(1)(vi)(B), (c)(1), 51.166(b)(3)(ii). For PSD permits issued under *id.* § 52.21, the “reasonable” contemporaneous period is the period running from five years before construction on the modification commences to the date the modification becomes operational and begins to emit pollution. *Id.* § 52.21(b)(3)(ii). See Memorandum, Need for Emission Cap on Complex Netting Sources, from Darryl D. Tyler, Director, CPDD, to David Kee, Director, Air Management Division, Region V (Dec. 1, 1986).

Under EPA’s Seasonal Afterburner Policy, emissions increases resulting from the winter shutdown of volatile organic compound control equipment need not be reviewed for NSR applicability where an existing source historically has adhered to the Policy. See Memorandum, Seasonal Afterburner Policy, Applicability of Part D New Source Review Requirements, from Robert D. Bauman, Chief, Standards Implementation Branch, CPDD, to William S. Baker, Chief, Air Programs Branch, Region II (June 28, 1985).

²However, the permitting authority may use a different period if it is more representative of normal source operations. 40 C.F.R. §§ 51.165(a)(1)(vi)(A), 51.166(b)(3)(i). 40 C.F.R. §§ 51.165(a)(1)(xii)(B), 51.166(b)(21)(ii).

Hence, the “potential to emit” following the physical or operational change is used.³

Judging from the facial wording of the definition of net emissions increase, one naturally would suppose that after identifying the “change,” the next step is a plantwide inventory, quantification, and summing of emission increases and decreases. Not so, for EPA through a series of interpretations has engrafted onto the definition an exclusion for any change that by itself would not have “significant” emissions. In effect, the Agency has read the word significant into the phrase “any increase in actual emissions” such that the netting calculation does not even begin if there is no significant increase in “actual” emissions from the change in question.⁴ The seminal interpretation, which EPA Headquarters issued in 1981, did not speak directly to the question of whether, in gauging the emission increase from the change “by itself,” one is to include any increase from units that the change happens to debottleneck.⁵ It was not until the late 1980s that EPA Headquarters seemed to be consistently taking the position that debottlenecking increases are to be included.⁶ Another issue is whether the emission increase at a debottlenecked unit is to be calculated by comparing pre-actuals with post-potentials, or pre-actuals with maximum-expected actuals instead. There is only one clear EPA pronouncement on this issue, which calls for an actual-to-potential comparison,⁷ but it was issued before the *WEPCO* decision.⁸

If the change “by itself” would result in a significant increase, then the next step

³40 C.F.R. §§ 51.165(a)(1)(vi)(A), 51.166(b)(3)(i). 40 C.F.R. §§ 51.165(a)(1)(xii)(B), 51.166(b)(21)(ii); see also 45 Fed. Reg. 52718 (1980) (actual emissions are equated to potential emissions at “new or modified units”).

⁴See, e.g., 48 Fed. Reg. 38742, 38746 n.12 (Aug. 25, 1983); Memorandum, PSD Applicability, from Director, Division of Stationary Source Enforcement (Jan. 21, 1981) [hereinafter PSD Applicability Memorandum]; Letter from Thomas W. Devine, Director, Air and Hazardous Materials Division (Mar. 31, 1981); Memorandum, Accumulation of Emissions, from Chief, Regulations Analysis Section, Stationary Source Compliance Division (Jan. 5, 1983); Memorandum, Net Emissions Increase Under PSD, from Sheldon Meyers, Director, Office of Air Quality Planning and Standards (June 7, 1983); Memorandum, PSD Applicability, Pulp and Paper Mills, from Director, Stationary Source Compliance Division (July 28, 1983); Memorandum, Review of De Minimis Emissions—Sanctions, from Ronald Shafer, Chief, Policy and Guidance Section, Stationary Source Compliance Division (Oct. 28, 1988); Letter from Edward J. Lillis, Chief, Noncriteria Pollutant Programs Branch, Office of Air Quality Planning and Standards (Jan. 12, 1989); Memorandum, Request for Clarification of Policy Regarding the “Net Emissions Increase,” from John Calcagni, Director, Air Quality Management Division (Sept. 18, 1989) [hereinafter Calcagni Memorandum]; OAQPS, New Source Review Workshop Manual, at A.46, A.53 (draft Oct. 1990) [hereinafter Draft New Source Review Workshop Manual]; Letter from Jewell L. Harper, Chief, Air Enforcement Branch, Region IV (Apr. 10, 1992) [hereinafter Harper Letter]; Letter from Eileen M. Glen, Chief, New Source Review Section, Region III (Oct. 21, 1993).

The 1990 amendments have complicated this general exclusion for a change that is de minimis by itself. For serious, severe, and extreme areas, they established new requirements for determining what plant changes are subject to NSR, including new netting ratios. See Clean Air Act § 182(c)(6)–(8), (e)(2), 42 U.S.C.A. § 7511a(c)(6) to (8), (e)(2). The impact of these new priorities on the “by itself” rule is unclear.

⁵See Memorandum, PSD Applicability, from Director, Division of Stationary Source Enforcement (Jan. 21, 1981).

⁶See, e.g., Memorandum, Request for Clarification of Policy Regarding the “Net Emissions Increase,” from John Calcagni, Director, Air Quality Management Division (Sept. 18, 1989); OAQPS, New Source Review Workshop Manual, at A.46, (draft Oct. 1990). Some confusion in the regional offices seems to continue, however. Compare Letter from Jewell L. Harper, Chief, Air Enforcement Branch, Region IV (Apr. 10, 1992) (debottlenecked boiler capacity need not be taken into account) with Letter from Winston Smith, Director, Air Division, Region IV (July 15, 1988) (modification or replacement of a press could constitute a major modification if a significant net emissions increase occurred elsewhere in the plant as a result).

⁷See Memorandum, Request for Clarification of Policy Regarding the “Net Emissions Increase,” 3 from John Calcagni, Director, Air Quality Management Division (Sept. 18, 1989).

⁸For a discussion of this case, see § 12:98.

is a comprehensive netting calculation in which generally representative actual emissions of the unit before the change must be compared to potential emissions after the change to determine (in conjunction with contemporaneous increases and decreases at the plant) whether there will be a “net emissions increase.” Because emissions units typically do not operate at full capacity at all times, this calculation will, in the first instance, result in a large emissions increase in many cases. However, the apparent rigor of the “actuals-to-potentials” calculation is muted by the ability to obtain “federally enforceable” restrictions on a unit’s potential to emit in conjunction with the change, such that potential emissions are not significantly greater than representative actual emissions before the change. Thus, where a source owner or operator believes that it can comfortably operate following a change without increasing its pre-change level of actual emissions, it usually will accept the necessary restrictions. Where it projects increased emissions, the rational course is to obtain a PSD permit.

Industry has asserted that a cushion between actual and potential emissions is necessary to respond to market conditions. Under the present regulatory structure, existing sources seeking to avoid new source review must surrender that differential whenever nonroutine changes are made. In a case involving extensive modifications to a cement plant that would have *reduced* the plant’s *potential* emissions but provided substantial economic incentives to increase operation of the new and more efficient equipment, thereby *increasing* the level of *actual* emissions over pre-modification levels, an appellate court upheld EPA’s “actual-to-potentials” method of calculating emissions increases.⁹ In the WEPCO case, however, the Seventh Circuit rejected that methodology, holding that EPA should not wholly disregard past operating conditions at the plant in determining future emissions levels where the modification involves the “like-kind” replacement of equipment.¹⁰

Following the court’s decision in the WEPCO case, EPA issued a revised applicability determination applying an “actual-to-actual” methodology in that case.¹¹ EPA indicated that it would do the same in other cases involving “like-kind replacements,” which it defined as the replacement of components at an emissions unit with the same or functionally similar components.¹² The Agency stated that under an actual-to-actual calculus, it would consider historic pre-modification capacity utilization, as well as available information regarding likely future operating levels and changes affecting hourly emissions rates.¹³ With this information, EPA would project the future level of actual emissions. Where emissions were projected to increase over baseline actual emissions, PSD would apply unless the source agreed to federally enforceable limits that would prohibit increases in actual emissions. Where EPA projected no increase over baseline levels, PSD would not apply, and the source apparently would not be subject to PSD at a later time even if the source decided to operate at a higher level that resulted in an actual emissions increase.¹⁴ The practical result of such an actual-to-actual system is to shift the burden of ac-

⁹*Puerto Rican Cement Co. v. EPA*, 889 F.2d 292, 296-98, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20259, 20261-63 (1st Cir. 1989).

¹⁰*Wisconsin Elec. Power Co. v. Reilly*, 893 F.2d 901, 917-18, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20414, 20422 (7th Cir. 1990).

¹¹Letter from William G. Rosenberg, Assistant Administrator to John Boston, President, WEPCO (June 8, 1990).

¹²Letter from William G. Rosenberg, Assistant Administrator to John Boston, President, WEPCO 4, note 1 (June 8, 1990).

¹³Letter from William G. Rosenberg, Assistant Administrator to John Boston, President, WEPCO 7-8 (June 8, 1990).

¹⁴Letter from William G. Rosenberg, Assistant Administrator to John Boston, President, WEPCO 10 (June 8, 1990). Using this formula, EPA found that for sulfur dioxide and particulates, projected

curately projecting future actual emissions from the source owner or operator to EPA and, ultimately, the environment.

As the Clean Air Act Amendments of 1990 made their way through Congress, the WEPCO case resulted in extensive debate over allegations that EPA's regulations requiring PSD permits where nonroutine changes at existing utilities would result in an emissions increase were inconsistent with the nationwide allowance trading provisions of the acid rain title. Under the acid rain title, utilities may employ control equipment or low-sulfur coal to meet emissions reduction targets. However, where the owner of a given utility unit finds it more economical to maintain or even increase its level of sulfur dioxide emissions, it may do so if it obtains sufficient allowances.¹⁵

Industry supporters framed the congressional debate with the assertion that absent a legislative "WEPCO fix," utilities would be prevented from undertaking equipment changes, even those that would reduce emissions, unless they met expensive NSR requirements.¹⁶ These assertions seem wildly overstated given the netting provisions of the current NSR program, which make it clear that only increases in emissions can trigger new source requirements. EPA attempted to resolve this debate by stating that it would apply an actual-to-actual methodology to clean coal technology demonstration projects, and to pollution control projects involving the addition of scrubbers and other conventional technologies, as well as to gas conversions.¹⁷ The Senate bill would have essentially codified EPA's approach.¹⁸ The House bill would have narrowed NSR coverage by exempting changes at existing utilities to comply with the acid rain title so long as they did not increase *potential* emissions.¹⁹ In the end, Congress decided to leave these decisions to EPA for the most part, calling upon the Agency to issue regulations or interpretative rulings within one year of enactment of the 1990 Amendments.²⁰

In June 1991, EPA issued proposed WEPCO regulations. The notice is styled in

increases in operations at the WEPCO plant would be offset by federally enforceable decreases in hourly emissions rates due to use of new or enhanced control equipment and lower-sulfur fuel. Regarding nitrogen oxides, there was a direct correlation between increased utilization following the renovations and increased nitrogen oxides emissions. Hence, WEPCO was required to obtain a PSD permit for that pollutant. *Id.*

¹⁵See Clean Air Act § 403.

¹⁶See, e.g., 136 Cong. Rec. H 12861 (Oct. 26, 1990) (daily ed.) (statement of Rep. Sharp).

¹⁷Senator Mitchell inserted into the *Congressional Record* a draft interpretative ruling prepared by EPA but never published. See 136 Cong. Rec. § 16908 to 16916 (daily ed.) (Oct. 27, 1990). The ruling set forth EPA's position that installation, use, and removal of clean coal technologies, and the addition or improvement of an emissions control system or device would not be considered a physical or operational change that could trigger NSR so long as there would not be an increase in actual annual emissions, and if certain other conditions were met to prevent adverse impacts on air quality. 136 Cong. Rec. § 16915. The ruling further provided that EPA would presume that the addition of a control device would not result in an increase in capacity utilization and hence, actual emissions for some pollutants, and that this presumption could be overcome only if there were a "clear likelihood" of increased operations leading to increased emissions. 136 Cong. Rec. § 16913. This might occur, for example, when EPA projected an increase in particulates when a utility unit switches from peak load to base load usage following the addition of a scrubber to control sulfur dioxide emissions under the acid rain program. Senator Mitchell also inserted related materials discussing how EPA had applied the substance of the interpretative ruling on a case-by-case basis. See 136 Cong. Rec. § 16905 to 16908.

¹⁸See § 415 of S. 1630, 101st Cong., 2d Sess., 135 Cong. Rec. § 11139 (Sept. 14, 1989).

¹⁹See, e.g., § 512(b) of H.R. 3030, 101st Cong. 2d Sess., 3030 Cong. Rec. H4459 (July 27, 1989).

²⁰See § 415 of the Clean Air Act Amendments of 1990, 104 Stat. 2399. Congress exempted temporary clean coal technology demonstration projects, and repowering projects (*i.e.*, boiler replacement) involving clean coal technologies where there would be no increase in potential emissions. §§ 415(b)(2), 415(b)(3) of the Clean Air Act Amendments of 1990. EPA was required to issue regulations or interpretive rulings to facilitate clean coal technology projects within twelve months of enactment. § 415(b)(4) of the Clean Air Act Amendments of 1990.

part as an immediately effective clarification of existing policies and in part as proposed regulatory changes that would become final only after consideration of comments.²¹ The proposal addressed the calculation of emission increases for determining NSR applicability to the electric utility industry in two areas. First, it asserted that under current law, pollution control projects that pass an “environmentally beneficial” test are not major modifications, and proposed adoption of a specific regulatory exclusion for such projects.²² The proposal was silent on how the Agency would determine which projects would meet this test, although consideration of whether the project would increase emissions probably is a key factor.²³ Second, the proposal would codify for all utility modifications roughly the same actual-to-actual methodology ultimately used in the WEPCO case itself.²⁴ Perhaps the most controversial feature of this part of the proposal is the apparent ability of a source owner to rely on its own projections of post-modification emissions.²⁵ Also controversial is a provision raising the possibility that emissions increases would be excluded from

²¹56 Fed. Reg. 27630 (June 14, 1991).

²²In the proposal, EPA relied on two central propositions in concluding that pollution control projects should not be treated as major modifications. One is “the simple reason that [in general] they do not result in an increase in actual emissions.” 56 Fed. Reg. 27630, 27634 (June 14, 1991). Individual projects meeting this criterion clearly do not qualify as major modifications under existing regulations, have never been subject to NSR, and are not controversial. Second, “EPA has always recognized that Congress did not intend that every activity at an existing facility be considered a physical or operational change for purposes of [NSR].” *Id.* To justify a current pollution control project exclusion as an interpretative ruling or statement of policy, EPA cited several case-specific nonapplicability determinations. 56 Fed. Reg. 27636 n.15 (June 14, 1991). For authority to craft a specific regulatory exclusion, EPA cited a parallel exclusion for pollution control projects under the section 111 NSPS program. 56 Fed. Reg. 27635 (June 14, 1991) (citing 40 C.F.R. § 60.14(e)(5)).

The proposal appeared to satisfy the requirement in section 415(b)(4) of the amended Act that EPA promulgate regulations or interpretive rulings by November 1991 to implement a blanket statutory exemption from NSR for temporary federally-funded clean coal technology demonstrations (section 415(b)(2)), and a PSD-only exemption for permanent clean coal projects that do not increase potential emissions (section 415(b)(3)). *See* 56 Fed. Reg. 27630, 27638 (June 14, 1991).

²³The proposal noted that EPA previously had declined to simply read the NSPS exclusion into existing NSR rules, citing the need to consider the ambient air quality component of NSR that is absent from NSPS. 56 Fed. Reg. 27636 n.14 (June 14, 1991) (citing Memorandum from Gerald A. Emison, Director, OAQPS, to Regional Division Directors (July 7, 1986)). Such consideration may be necessary for two reasons. One is the absence of general authority to grant exemptions under NSR provisions. *See Alabama Power Co. v. Costle*, 636 F.2d 323, 357-61 (D.C. Cir. 1979) (EPA exemption authority limited to *de minimis* matters and cases of administrative necessity). The other is the fact that a pollution control project may result in large increases in emissions of pollutants other than those targeted for control. For example, addition of a scrubber at a coal-fired utility unit and a consequent shift from peaking—e.g., 30 percent annual capacity utilization—to base-load usage—e.g., 60 percent annual capacity utilization—probably would result in a substantial net decrease in sulfur dioxide. However, emission rates of particulates and nitrogen oxides likely would not change. In that case, the project would double emissions of those collateral pollutants. In order to exclude such a project from NSR, EPA could assert that, as with the NSPS exemption in 40 C.F.R. § 60.14(e)(5), the Administrator has authority to weigh the environmental consequences of the project in light of the NSR program objectives and exclude it from review if, on balance, it is environmentally beneficial.

²⁴Under the proposal, NSR coverage would hinge on significant net increases in “representative actual annual emissions” at electric utility steam generating units. Regarding the pre-change baseline, the proposal creates a presumption that any two consecutive years within the last five prior to the change is representative of normal source operations within the meaning of, e.g., 40 C.F.R. § 51.165(a)(1)(xii)(B) and § 51.166(b)(21)(ii). This would be compared to projected emissions during a representative two-year period following the change. *See* 56 Fed. Reg. 27630, 27636 (June 14, 1991).

²⁵The proposal could be read as holding that in the absence of fraud or bad faith, an actual but unprojected increase in emissions resulting from the change would not trigger NSR. *See, e.g.*, 56 Fed. Reg. 27641 (1991) (proposed 40 C.F.R. § 51.166(b)(32)). However, in testimony before Congress, a senior EPA official indicated that the final rule likely would contain some provision for verifying the accuracy and enforceability of such projections. Testimony of General Counsel E. Donald Elliott before House Subcomm. on Health and the Environment, July 22, 1991 (copy of unofficial hearing transcript in

the calculation of post-change emissions where “demand growth” is the underlying motivation for the change.²⁶

Issuance of the WEPCO proposal triggered oversight hearings by a congressional subcommittee, in which some members alleged that the proposal was unlawful and reflected improper interference by the White House and the Department of Energy.²⁷ EPA recently took final action on these proposed changes.²⁸ With regard to the currency for netting, it stayed with the proposed definitions, adding only that a utility which relies on a comparison of “representative actual annual emissions” to determine that the change is not subject to review must submit for five years after the change sufficient records to determine what emissions the change really produced.²⁹

§ 12:102 Current federal requirements—Nonattainment and PSD permitting—Applicability—Definition of “major modification”—Otherwise creditable

In order to be “otherwise creditable,” an emissions increase or decrease must not have been considered in issuing a permit currently applicable to the source in question.¹ In addition, a decrease in emissions cannot have been relied on as an emissions offset in issuing a permit to another source, or in demonstrating attainment or reasonable further progress.² The purpose of the restrictions on crediting of emissions decreases is to assure that a decrease is used only once and is not “double

authors’ files).

²⁶The statute limits modifications to a physical or operational change “which increases the amount” of pollution. Clean Air Act § 111(a)(4), 42 U.S.C.A. § 7411(a)(4). This causal link is more explicit in the regulations. *See, e.g.*, 40 C.F.R. § 51.166(b)(2)(i) (major modification limited to a change “that would result in” increased emissions). Under the current regulations, EPA has assumed that growth in product demand is an underlying, but irrelevant, cause of the emissions increase. For applicability purposes, the Agency has instead looked to the proximate cause of the emissions increase, and found the necessary causation whenever the increase was linked to construction activity. *See* 45 Fed. Reg. 52704 (Aug. 7 1980); *see also* Clean Air Act §§ 160(5), 165(a), 42 U.S.C.A. §§ 7470(5), 7475(a); *Alabama Power Co. v. Costle*, 636 F.2d 323, 401, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20001 (D.C. Cir. 1979) (modification provisions apply “where industrial changes might increase pollution in an area”). This position was upheld in *Puerto Rican Cement Co. v. EPA*, 889 F.2d 292, 297, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20259, 20262 (1st Cir. 1989), and *Wisconsin Elec. Power Co. v. Reilly*, 893 F.2d 901, 910, 916 n.11, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20414, 20421 n.11 (7th Cir. 1990). The WEPCO rulemaking proposal charts a new course by focusing on the underlying cause of the emissions increase. It seems to provide that, so long as the source could physically and legally accommodate increased utilization and consequent increased emissions even absent the change in question, any portion of the increased emissions that is due to growth in electricity demand may be deducted from the projection of future emissions. *See* 56 Fed. Reg. at 27637. In some instances, it might be shown that the source would have increased its operations even absent the physical or operational change. (That is, demand growth is the sole motive for the increase, and the physical or operational change is merely coincidental.) A much more likely scenario is that the source increases utilization due to a mix of underlying and proximate causes: in response to demand growth the utility makes changes that enhance plant efficiency, making it economical to increase operations. For the reasons noted above, excluding the latter cases from NSR is problematic.

²⁷*See* Statement of Henry A. Waxman, Chairman, Subcomm. on Health and the Environment, Hearing on Clean Air Act Implementation (July 22, 1991); An Investigation of EPA’s Clean Air “WEPCO” Rule, Staff Report, Subcomm. on Health and the Environment, House Comm. on Energy and Commerce (July 22, 1991).

²⁸*See* 57 Fed. Reg. 32314 (1992).

²⁹57 Fed. Reg. at 32325 column 2.

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¹40 C.F.R. §§ 51.165(a)(1)(vi)(C)(2), 51.166(b)(3)(iii).

²40 C.F.R. § 51.165(a)(1)(vi)(E)(3). Apparently due to an oversight, the PSD regulations do not specifically bar crediting of emissions decreases previously relied on in issuing a PSD permit to another source. For example, such decreases might have been used by the other source to demonstrate

counted.”³ As to emissions increases, the purpose is to insure that *de minimis* increases at the source during the contemporaneous period, which individually did not require permitting as major modifications, are considered cumulatively in the netting calculation.⁴

The baseline from which netting calculations are made is, with respect to creditable increases, the level of actual emissions. This is so even if emissions remain below the legally allowable limit.⁵ In contrast, the baseline for emissions decreases is the lower of actual emissions or legally “allowable emissions.”⁶ This prevents credit for emissions decreases which are independently required by law.

Emissions decreases must also be “federally enforceable” in order to be creditable.⁷ This requirement for enforceability assures that credit is not given for temporary or unsubstantiated emissions decreases.⁸

In addition, creditable emissions decreases must have approximately the same public health and welfare significance as the increase which would result from the proposed modification.⁹ This provision could serve to prevent, for example, a source from avoiding review of a modification which would result in increased emissions of a relatively harmful form of pollution (such as increased particulate emissions from expanded coke ovens) in exchange for a quantitatively equal decrease in emissions of the same pollutant which are relatively less harmful in qualitative terms (such as decreased particulate emissions from paving a dirt road at the plant site). Similarly, this provision could prohibit crediting a decrease in stack emissions which, because of dispersion characteristics, have a lesser ambient impact than a proposed modification which would increase non-stack emissions of the same pollutant in the same amount, but would have a greater ambient impact. EPA, however, has announced that, as a general matter, it will not apply this provision to this situation until it

that it would not cause or contribute to NAAQS or increment violations. *See* 40 C.F.R. § 51.166(k). Similarly, both the nonattainment and PSD regulations lack a bar against crediting emissions decreases previously used to “net out” of review. Presumably, however, EPA would seek to bar the “double counting” of emissions decreases already used for these purposes.

³Double counting could occur if, for example, an emissions decrease at source “A” were relied on as an offset by source “B” and source “A” later sought to take credit for that same decrease in determining whether a proposed modification would cause a significant net increase in emissions.

⁴However, EPA has interpreted the regulations as requiring that a proposed modification must *by itself* result in a significant net increase in emissions to be considered a major modification. If it does not, prior accumulated emissions increases are ignored. *See* 48 Fed. Reg. 38742, 38746 (1983); Memorandum, Request for Clarification of Policy Regarding the “Net Emissions Increase,” from John Calcagni, Director, Air Quality Management Division, to William B. Hathaway, Director, Air, Pesticides, and Toxics Division, Region VI (Sept. 18, 1989); Memorandum, Review of De Minimis Emissions-Sanctions, Ronald Shafer, Chief, Policy and Guidance Section, SSCD, to Ron Van Merbergen, Air and Radiation Branch, Region V (Oct. 28, 1989); Memorandum, Net Emissions Increase Under PSD, from Sheldon Meyers, Director, Office of Air Quality Planning and Standards, to David P. Howekamp, Director, Air Management Division, Region IX (June 7, 1983); Memorandum from Director, EPA Division of Stationary Source Enforcement (Jan. 22, 1981). For additional discussion, *see* § 12:99.

⁵40 C.F.R. §§ 51.165(a)(1)(vi)(D), 51.166(b)(3)(v).

⁶40 C.F.R. §§ 51.165(a)(1)(vi)(E)(1), 51.166(b)(3)(vi)(a). “Allowable emissions” are defined as the emissions rate of a source calculated using its “maximum rated capacity,” but also considering federally enforceable emissions limits. 40 C.F.R. §§ 51.165(a)(1)(xi), 51.166(b)(16). In substance, the level of “allowable emissions” is essentially the same as a source’s “potential to emit,” as both are based on maximum operational capabilities as modified by federally enforceable emissions limitations.

⁷40 C.F.R. §§ 51.165(a)(1)(vi)(E)(2), 51.166(b)(3)(vi)(b). This requirement is now under a cloud due to the decision in *Chemical Mfrs. Ass’n v. EPA*, No. 89-1514 (D.C. Cir. 9-15-95). *See* § 12:95.

⁸Absent this requirement credit might be given, for example, for the voluntary installation of control equipment which could later be removed at will because it was not required under a permit.

⁹40 C.F.R. §§ 51.165(a)(1)(vi)(E)(4), 51.166(b)(3)(vi)(C).

has cured the vagueness of the terms by issuing detailed guidance.¹⁰

A somewhat open issue for several years has been whether fugitive emissions are to be counted in determining whether a modification at one of the unlisted sources is major. The federal regulations since the early 1980s have contained an exemption for any modification at such sources if the modification would not be major if fugitives were ignored.¹¹ EPA solicited comment on the issue in 1984 and, in the preamble to final action on strip mines in 1989, concluded that in its view the section 302(j) rulemaking requirement does not apply to modifications. Nevertheless, EPA failed—apparently due to an oversight—to review the regulation to reflect its interpretation.¹² In 1994, the Agency’s Environmental Appeals Board took the regulations as written and held that fugitives may not be counted in the case of modifications at unlisted sources.¹³

§ 12:103 Current federal requirements—Nonattainment and PSD permitting—Applicability—Definition of “major modification”—Significant

If the summing of all creditable increases and decreases results in a “significant” net increase in emissions, the modification is “major.” Substantive NSR requirements then apply as to all pollutants for which the net increase equals or exceeds the significance levels set forth in the applicable regulations. The more prominent level in the regulations is 40 tpy, which applies for sulfur dioxide, volatile organic compounds (VOC), and nitrogen oxides; 15 tpy is the threshold for PM-10.¹

¹⁰EPA made this announcement as part of its final disposition of the 1983 proposals that flowed out of the *Chemical Mfrs. Ass’n* settlement. See 54 Fed. Reg. 27286, , 27296-98 (June 28, 1989). EPA decided to retain this equivalency requirement on the ground that it originally had sufficient authority to create it, because the seminal provision (section 111(a)(4)) required EPA to strike a reasonable balance. According to EPA, section 111(a)(4), if taken literally, would require net increases in *any* pollutant to undergo preconstruction review. This reading, however, could lead to absurdities, hence the need for balance. In EPA’s view, the equivalency provision was a reasonable response to that need. See 54 Fed. Reg. 27297 (June 28, 1989). EPA acknowledged, however, that the terms of the provision were vague. EPA stated that it would not exercise the authority reposing in the provision as to relative toxicity until it had issued guidance. As to relative air quality impacts, EPA advised that it would stay its hand except where “the State has reason to believe that the reduction in ambient concentrations from the emissions decrease will not be sufficient to prevent the proposed emissions increase from causing or contributing to a violation of any NAAQS or PSD increment.” 54 Fed. Reg. 27298 (June 28, 1989).

¹¹See, e.g., 40 C.F.R. § 51.166(i)(4)(ii).

¹²See 54 Fed. Reg. 48870, 48882-83 (Nov. 28, 1989); 49 Fed. Reg. 43211, 43213-14 (Oct. 26, 1984) (proposed rule).

¹³See *In re Masonite Corp.*, PSD Appeal No. 94-1, at 82 (EPA EAB 11-1-94).

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¹See 40 C.F.R. §§ 51.165(a)(1)(x), note, 51.166(b)(23)(i); 52 Fed. Reg. 24713-14 (1987). The remaining levels for NAAQS pollutants are: carbon monoxide, 100 tpy; and lead, 0.6 tpy. As discussed above, the substantive nonattainment NSR provisions apply only to NAAQS pollutants, while PSD applies to all regulated pollutants except those carved out by the 1990 Amendments. The significance levels for those pollutants are: fluorides, 3 tpy; sulfuric acid mist, 7 tpy; total reduced sulfur, 10 tpy; reduced sulfur compounds, 10 tpy; and TSP, 25 tpy.

40 C.F.R. § 51.166(b)(23)(ii) provides that *any* emissions of a newly regulated pollutant for which a significance level has not been set is “significant” and subject to PSD. Radionuclides and benzene, both regulated under section 112 of the Act since 1980, would have fallen in this category but for the 1990 Amendments. The apparent reason for this treatment is that the significant emissions rates in 40 C.F.R. § 51.166 are in essence *de minimis* exemptions from what would otherwise be blanket PSD coverage. See *Alabama Power Co. v. Costle*, 636 F.2d 323, 355-61, 403-05, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20001, 20009-12, 20037-39 (D.C. Cir. 1979). Thus, until EPA acts to establish significance (or, conversely, *de minimis*) levels, PSD coverage would seem to be mandated. Nevertheless, on January

§ 12:104 Current federal requirements—Nonattainment and PSD permitting—Applicability—Reactivated sources

EPA has long held that a source which has been shut down would be a new source for PSD purposes upon reactivation if the shutdown had been “permanent.”¹ Whether a shutdown was permanent depends upon the intent of the owner or operator at the time of the shutdown. This in turn is determined from all the facts and circumstances, including the cause of the shutdown and the handling of the shutdown by the state. A shutdown lasting for two years or more, or resulting in removal of the source from the state’s emissions inventory, is presumed to be permanent. The owner or operator proposing to reopen such a source would have the burden of overcoming the presumption that the shutdown was not permanent.² While this is a difficult showing to make, EPA has accepted arguments that a shutdown of a refinery lasting almost eight years was not permanent.³

On the other hand, EPA more recently ruled that a shutdown of copper smelting facilities lasting ten years was permanent. The source had been transferred to new owners since the shutdown, had been removed from the state’s emissions inventory, and had surrendered its operating permits.⁴ EPA later ruled in the alternative that, even absent the Agency’s uncodified source reactivation policy, start-up of the source would constitute a physical or operational change, would be deemed to result in a significant net increase in emissions, and hence, would be subject to PSD as a major modification.⁵

19, 1981, then-Administrator Costle committed the Agency to deletion of the “zero” threshold for newly regulated pollutants in the “near future,” on the ground that the provision was superfluous because EPA would establish a *de minimis* threshold for any newly regulated pollutant. *See* Letter from Administrator to Andrea S. Bear. EPA has not acted on this commitment. Curiously, the nonattainment regulations do not have a comparable provision for new NAAQS pollutants. Apparently, EPA would have to amend those regulations to include a new NAAQS pollutant before it would have to be subject to nonattainment review. *See generally* 50 Fed. Reg. 13130 (1985) (proposals for implementation of new NAAQS for particulate matter).

Separately, 40 C.F.R. § 51.166(b)(23)(iii) provides that any emissions increase is “significant” if the source is within 10 kilometers of a class I area and would have an impact of at least 1 ug/m³ (24-hour average). In June 1989, EPA decided to retain this provision, thereby reversing the proposal it had made in 1983 to delete it. *See* 54 Fed. Reg. 27286, 27287-88 (June 28, 1989). EPA concluded that the provision did not create a “buffer zone” around class I areas within the meaning of section 165(e)(3)(A) of the Act, 42 U.S.C.A. § 7475(e)(3)(A).

The 1990 Amendments set a VOC significance level for serious and severe nonattainment areas at 25 tpy. *See* § 103, 104 Stat. 2399 (§ 183).

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¹*See* Memorandum, PSD Requirements, from Director, Division of Stationary Source Enforcement, to Steven A. Dvorkin, Chief, General Enforcement Branch, Region II (Sept. 6, 1978). While EPA apparently has not ruled on the applicability of NSR to reactivated sources in nonattainment areas, presumably it would require states to follow roughly the same policy as EPA follows under PSD.

²Memorandum, PSD Requirements, from Director, Division of Stationary Source Enforcement, to Steven A. Dvorkin, Chief, General Enforcement Branch, Region II 1-2 (Sept. 6, 1978).

³*See* Memorandum, Reactivation of Amerada Hess Corporation’s Port Reading Facility and PSD Review, from Director, Division of Stationary Source Enforcement, to Conrad Simon, Director, Air and Waste Management Division, Region II (July 9, 1982).

⁴*See* Memorandum, Reactivation of Noranda Lakeshore Mines’ RLA Plant and PSD Review, from John S. Seitz, Director, Stationary Source Compliance Division, to David P. Howekamp, Director, Air Management Division, Region IX (May 27, 1987).

⁵EPA also held that emissions of the restarted facility should be compared with “representative” emissions of zero during the ten-year shutdown, and thus, constituted a significant net emissions increase. The source initially sought review of EPA’s reactivation and major modification rulings, but later stipulated to dismissal upon issuance of a final PSD permit containing terms agreed to by the parties. *See* *Cyprus Grande Corp. v. EPA*, No. 87-7322 (9th Cir.) (Settlement Agreement, Stipulation of

§ 12:105 Current federal requirements—Nonattainment and PSD permitting—Applicability—Nonattainment area transition policy under the 1990 amendments

In the wake of the 1990 Amendments, EPA adopted a liberal transition policy, addressed primarily to nonattainment areas, to guide states' NSR programs pending revision to the NSR regulations and adoption of SIP revisions.¹ The Agency decided to continue its past policy of applying the Offset Ruling in 40 C.F.R. Part 165, Appendix S, to newly designated or expanded nonattainment areas prior to adoption of SIP revisions, but only in those cases where the existing nonattainment NSR program was not so broadly worded as to apply automatically to such areas.² The applicable substantive requirements under EPA's transition policy hinged upon the deadlines in the 1990 Amendments for submission of NSR SIP revisions for the various nonattainment pollutants. EPA declared that complete permit applications submitted prior to the deadlines for the pollutants in question could be "grandfathered" by state permitting agencies and not subject to the more stringent NSR requirements in the 1990 Amendments.³ Anticipating that many states would fail to revise their NSR rules by the SIP submittal deadlines, EPA's transition policy also contained a "safe harbor" provision, that permits issued for applications after the deadline would be considered by EPA to be in compliance with the Act so long as they adhered to the new statutory requirements.⁴ In addition, as part of a broad policy under new section 110(k)(4) regarding conditional SIP approval to state commitments to adopt specific enforceable SIP measures within one year, EPA announced that certain elements of revised NSR programs could be deferred.⁵

Settlement and Joint Motion for Stay of Briefing filed Jan. 27, 1988) (Entry of Dismissal filed July 15, 1988).

The 1990 Amendments contain a special exemption for reactivation of "very clean" electric powerplants. See § 401, 104 Stat. 2399 (§ 415(c)). The prerequisites are that the unit (1) was not in operation for the two years prior to enactment, yet the state carried the source in its inventory; (2) was equipped with controls that achieve an 85 percent removal of sulfur dioxide and a 90 percent removal of particulates; (3) is equipped with low-NO_x burners; and (4) is otherwise in compliance with the Act.

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¹This bulk of this transition policy is contained in four documents: Memorandum, New Source Review (NSR) Program Transitional Guidance, from John S. Seitz, Director, Office of Air Quality Planning and Standards (Mar. 11, 1991) [hereinafter, Seitz Transition Memorandum I]; Memorandum, New Source Review (NSR) Program Supplemental Transitional Guidance on Applicability of New Part D NSR Permit Requirements, from John S. Seitz, Director, OAQPS (Sept. 3, 1992) [hereinafter, Seitz Transition Memorandum II]; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, 57 Fed. Reg. 13498 (April 16, 1992) [hereinafter, 1992 General Preamble]; Memorandum, Guidelines for State Implementation Plan (SIP) Submittals Due November 15, 1992, from Michael H. Shapiro, Deputy Assistant Administrator for Air and Radiation (July 22, 1992).

²Seitz Transition Memorandum I, Attachment at 5.

³Seitz Transition Memorandum II, at 2. Although EPA declined to require that permits be issued by the SIP submittal deadline to obtain grandfather status, the guidance emphasized that states must expeditiously process permit applications and companies not unduly delay. *Id.*

⁴Seitz Transition Memorandum II, at 3. EPA initially had announced that it would develop a generic nonattainment area NSR FIP under 40 C.F.R. Part 52 (akin to the PSD FIP in § 52.21) that would be applied where a state missed the SIP submittal deadline. See 1992 General Preamble, 57 Fed. Reg. 13556 (1992); Seitz Transition Memorandum I, Attachment at 6. EPA had noted that it might adopt a "safe harbor" approach as an interim measure. 57 Fed. Reg. 13556 (1992). Delay in the issuance of updated NSR regulations apparently brought this to pass, at least temporarily. Should the Agency decide that this approach is unsatisfactory, EPA retains broad authority under amended section 113(a)(5) to ban construction in areas that lack revised NSR SIPs that comply with the new NSR requirements of the Act.

⁵See Memorandum, Guidelines for State Implementation Plan (SIP) Submittals Due November 15, 1992, from Michael H. Shapiro, Deputy Assistant Administrator for Air and Radiation (July 22,

§ 12:106 Current federal requirements—Nonattainment and PSD permitting—Substantive nonattainment nsr requirements

This subsection details the specific substantive NSR requirements applicable to nonattainment areas under Part D. Unlike the applicability rules, these substantive requirements differ substantially from those applicable under Part C. Accordingly, the PSD provisions are discussed separately in the next subsection.

§ 12:107 Current federal requirements—Nonattainment and PSD permitting—Substantive nonattainment nsr requirements—Offsets

The substantive conditions that an applicant for a permit has had to meet are contained largely in Clean Air Act section 173.¹ Under section 173(a)(1)(A), the permitting agency must determine that by the time a proposed major source or modification would commence operation, total “allowable emissions” in the area from existing sources, new sources or modifications which are not major, and the proposed major source or modification will be less than total emissions prior to the application for a permit.² The amount of reduced emissions must be sufficient so as to represent, when considered together with the other Part D plan provisions, “reasonable further progress” toward attainment of the NAAQS.³ This is termed the “offset” requirement.⁴

The 1990 Amendments retained the basic outline and content of this offset

1992). EPA stated that committal SIPs under section 110(k)(4) would not be allowed for new offset requirements (increased offset ratios and new provisions of section 173), lower applicability thresholds, new NSR provisions for NO_x in ozone nonattainment areas. *Id.* (Attachment). Thus, for example, EPA allowed deferral of the new requirement in section 173(a)(5) that states conduct a NEPA-like analysis that considers alternative sites, sizes, production processes, and environmental control techniques for a proposed new or modified source in nonattainment areas and determines whether the environmental and social benefits of the project exceed the costs. This decision is somewhat curious in light of EPA’s emphasis on pollution prevention.

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¹40 C.F.R. § 51.165(a) simply refers back to section 173 of the Act to describe the bulk of the substantive requirements. *See* 40 C.F.R. § 51.165(a)(2). EPA has vaguely regarded the Offset Ruling as a model for these substantive requirements. *See* 44 Fed. Reg. 20372, 20379 (1979).

²EPA has clarified that, in general, the offset must be federally enforceable before the permit is issued. *See* Memorandum, Offsets Required Prior to Permit Issuance, from John S. Seitz, Director, Office of Air Quality Planning and Standards, to Regional Air Directors (June 14, 1994).

³Clean Air Act § 173(a)(1)(A), 42 U.S.C.A. § 7503(a)(1)(A). “Reasonable further progress” is defined in section 171(1) of the Act as annual incremental reductions which are sufficient to provide for attainment of the NAAQS by the statutory deadline. Congress inserted the “reasonable further progress” requirement to force states to adopt measures to begin rectifying the nonattainment problem right away rather than postpone difficult planning decisions until the statutory deadlines were imminent.

⁴Section 173(1)(B) of the former Clean Air Act provides that, as an alternative to offsets, a permit may be issued if the increased emissions of a given pollutant from the proposed source will not exceed a “growth allowance” for that pollutant established in the SIP under section 172(b)(5). In practice, states have found it very difficult to provide a growth allowance in lieu of offsets as part of their Part D plan of phased reductions in emissions needed to demonstrate attainment of the NAAQS. Consequently, in most nonattainment areas this theoretical alternative to the offset requirement is not available. In addition, in at least one instance EPA has ruled that a previously approved growth allowance was rendered invalid by continued nonattainment after the statutory deadline and the issuance of a SIP call. *See* Letter from Bruce P. Miller, Chief, Air Programs Branch, Region IV, to Paul J. Bontrager, Director, Bureau of Pollution Control, Nashville-Davidson County (Jan. 31, 1989). The 1990 Amendments now eliminate the opportunity to create growth allowances and invalidate the previously approved allowances in any SIP that is inadequate. *See* Clean Air Act § 102(c), 104 Stat. 2399 (Clean Air Act § 173(b)). The Amendments carve out an exception, however, for HUD economic development zones. *Id.* (Clean Air Act § 173(1)(B)).

requirement, as EPA has been implementing it over the years. However, it removed the language that suggested that Congress in 1977 had intended EPA to give credit for reductions in allowable emissions in all circumstances. Now, the Act leaves it to EPA to establish by rule what is creditable and what is not “in a manner consistent with the assumptions underlying the applicable implementation plan.”⁵ The amended Act further specifies that reductions in “actual emissions” are required.⁶

While the statute clearly requires that an applicant obtain offsetting reductions that exceed the emissions increases that will result from the new source, it does not specify, with some important exceptions,⁷ any particular offset ratio. In practice, EPA has afforded states great leeway in establishing an offset ratio in their Part D permitting programs. However, EPA regulations do require several controls on the use of offset credits. These restrictions are intended to assure, as is the case with Part D NSR requirements generally, that new source growth can be accommodated within a state’s overall plan to attain air quality standards.⁸ Specifically, the restrictions are designed to insure that new source growth will result in real air quality improvement.

First, the EPA regulations require consistency between the type of emissions used for Part D planning purposes generally and the type used for offset calculations. Thus, where a state’s attainment demonstration is based on a combination of actual and allowable emissions, that same combination is also the baseline for offset purposes.⁹

In addition, EPA places restrictions on the type of emissions reductions which are

A partial exemption from the offset requirements is available in some instances to resource recovery facilities. When EPA revised the Offset Ruling in 1979 it allowed states to exempt resource recovery facilities which burned municipal solid waste from strict adherence to the offset provisions. Instead, the Agency only required an applicant to secure available offsets and make continuing “best efforts” to obtain the balance of the offsets usually required. *See* 44 Fed. Reg. 3274, 3284 (1979), codified at 40 C.F.R. part 51, Appendix S, § IV.B. EPA thereafter approved SIP revisions in several states which adopted this partial exemption. The exemption provision is still contained in the Offset Ruling. However, EPA policy no longer allows approval of such exemptions. *See, e.g.*, 51 Fed. Reg. 8495 (1986) (disapproving offset exemption for resource recovery and cogeneration facilities in the SIP for California’s South Coast nonattainment area). Nevertheless, they remain as part of the SIP in some states, *e.g.*, New Jersey. *See* 40 C.F.R. § 52.1570(27); N.J. Admin. Code tit. 7:27, § 18.5; American Ref-Fuel Co. of Essex County, PSD Appeal No. 86-1, Order of the Administrator, Oct. 8, 1986, at 4 n.5. In settlement of a claim by environmental groups that the offset exemption for resource recovery facilities in the New York SIP is improper, EPA called upon the state to revise its SIP to delete the exemption. *See* NRDC v. Muszynski, No. 89-6944 (Settlement Agreement, filed January 1990); Letter from Constantine Sidamon-Eristoff, Regional Administrator, EPA Region II, to Thomas C. Jorling, Commissioner, New York Department of Environmental Conservation (Feb. 2, 1990). The 1990 Amendments include a narrowly-crafted exception to the full offset requirement for rocket engine testing. *See* Clean Air Act § 102(c), 104 Stat. 2399 (§ 173(e)).

⁵*See* Clean Air Act § 173(a)(1).

⁶*See* Clean Air Act § 173(c)(1). This surgery most likely dampens the controversy in the *CMA* case that led to the settlement agreement to propose certain regulatory changes in the area of netting and offsets. *See* § 12:99.

⁷For ozone nonattainment areas, the 1990 Amendments increase the ratios progressively in proportion to the severity of the problem: 1.15 to 1 for moderate areas, 1.2 to 1 for serious areas, generally 1.3 to 1 for severe areas, and generally 1.5 to 1 for extreme areas.

⁸*See* S. Rep. No. 127, 95th Cong., 1st Sess. 55 (1977), reprinted in 3 Cong. Research Serv., A Legislative History of the Clean Air Act Amendments of 1977 1429 (Comm. Print 1978), cited in *Chevron U.S.A., Inc. v. NRDC*, 467 U.S. 837, 852, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20507, 20511 (1984).

An EPA contractor has compiled a list of the offset ratios used by various states, and their applicability. *See* Analysis of New Source Review Permitting Experience—Part 3, Radian Corp., March 1986 (Draft Final Report).

⁹40 C.F.R. § 51.165(a)(j)(3)(i). Different currencies for offset baselines may be used for different pollutants, where the attainment plan also so provides.

available as offsets. Interpollutant offsets are generally prohibited. Thus, for example, a decrease in sulfur dioxide emissions cannot be used to offset increased VOC emissions.¹⁰ The Part D regulations also restrict the crediting, for offset purposes, of emissions reductions resulting from the shutdown (or permanent curtailment of production levels or operating hours) of an existing source.

For areas with approved attainment demonstrations, the restrictions are modest. Credit may not be given for shutdowns that are already assumed in the demonstration. Hence, credit may not be given for shutdowns that occurred before the most recent attainment demonstration or emissions inventory. However, in no event may credit be given for shutdowns that occurred before August 7, 1977.¹¹ For areas lacking approved demonstrations, no credit may be given for shutdowns that occurred before the filing of the permit application, unless the applicant shows that the proposed new source is a replacement for the shutdown source. Even then, the time restrictions for areas with approved demonstrations apply.¹²

There are also regulatory restrictions on the permissible locations of offsetting sources, designed to assure that a net air quality benefit occurs at the location of the new source. Were it not for the 1990 Amendments, these provisions would allow offsets involving the ozone precursors, primarily VOC, generally to be obtained from any location within the same air basin, even across boundaries of nonattainment areas.¹³ In contrast, offsets of sulfur dioxide or carbon monoxide generally must be obtained within the immediate vicinity of the proposed new source.¹⁴

The 1990 Amendments tighten these geographic restrictions, and they do so in

¹⁰40 C.F.R. § 51.18, App. S, § IV.A., Condition 3.

¹¹54 Fed. Reg. 27286, 27299 (June 28, 1989) (codified at 40 C.F.R. § 51.165(a)(3)(ii)(C)(1)).

¹²54 Fed. Reg. at 27299 (June 28, 1989) (codified at 40 C.F.R. § 51.165(a)(3)(ii)(C)(2)). Until mid-1989, the general bar against crediting preapplication shutdowns had applied to areas with approved demonstrations as well as those without them. In 1983, as part of the *Chemical Mfrs. Ass'n* settlement, EPA proposed to delete this bar altogether. See 48 Fed. Reg. 38742, 38751. In June 1989, however, EPA decided to delete it only for areas with approved demonstrations. For areas without such demonstrations, EPA decided not only to retain the restriction, but also not to conform it to parallel provisions in the Emission Trading Policy, 51 Fed. Reg. 43814 (1986), under which credit may be given in bubble transactions for a shutdown occurring after an application to bank credit for the shutdown (as opposed to an application for the bubble itself). EPA reasoned under the logic of *Chevron U.S.A., Inc. v. NRDC*, 467 U.S. 837 (1984), that the requirement in section 173 of the Act to assure reasonable further progress (RFP) was so indefinite as to give it wide discretion on the crediting of offsets. EPA observed, however, that the extent to which a particular offset transaction assures RFP depends on the extent of the causal link between the new increase and the offsetting reduction. The weaker that link, the more other factors must be added to create a sufficient probability of RFP. The existence of an approved demonstration is a very strong factor. Hence, in an area with such a demonstration, the linkage between the increase and the offset could be practically nonexistent. In the context of the Emissions Trading Policy, there is another factor: the Policy's requirement of a 20 percent emissions discount and state assurances of SIP supplementation. (Section 173 does not explicitly include these safeguards.) Absent these factors, an increase has to have a close temporal (and therefore potentially causal) connection to the reduction in question. Hence, EPA kept the general requirement that the offset must occur after the permit application in the case of areas without approved demonstrations. See generally 54 Fed. Reg. 27286, 27292-94 (June 28, 1989). That decision is now under review in the D.C. Circuit. The court has severed the issue into Case No. 95-1070 and put it into abeyance pending status reports by the parties. Order No. 89-1514 (D.C. Cir. 1-27-95). See § 12:88. Meanwhile, in a 1993 memorandum to the regional offices, EPA Headquarters took the position that for purposes of crediting post-1990 shutdowns, those nonattainment areas still working to fulfill the new SIP planning obligations should be treated as if they had an approved attainment plant. Thus, these areas could give credit for post-1995, pre-application shutdowns through an interpretation of state regulations or a SIP revision, as necessary. Memorandum from John S. Seitz, Director, OAQPS (July 21, 1993).

¹³40 C.F.R. § 51.165(a)(3)(ii)(F), Appendix S, § IV.D.

¹⁴40 C.F.R. § 51.165(a)(3)(ii)(F), Appendix S, § IV.D. EPA's regulations contain several restrictions on offset credit beyond those described above. For instance, they restrict the credit that might otherwise occur from switches at existing sources to a cleaner fuel by allowing credit only if "the permit is

language that appears to operate directly on the permitting process, rather than indirectly by requiring the eventual adoption of mirroring SIP revisions. New section 173(c)(1) provides that, in general, the necessary offsets must come from the same nonattainment area as the proposed emissions. The exception allows credit for offsets in another nonattainment area if (1) the second area has an equal or higher nonattainment classification and (2) emissions from that area contribute to the nonattainment problem in the first area.¹⁵

§ 12:108 Current federal requirements—Nonattainment and PSD permitting—Substantive nonattainment nsr requirements—Lowest achievable emission rate

Section 173(a)(2) of the Act requires new major sources and modifications to comply with the “lowest achievable emission rate.” This term is defined as the emission rate that reflects the most stringent limitation for the relevant source category that either is “contained in” any SIP (unless the applicant demonstrates that such limitation is “not achievable” for the proposed new source), or is “achieved in practice.” In no event may LAER be less stringent than an applicable NSPS.¹

The LAER definition is intended to require the lowest emissions rate which is “actually, not theoretically, possible.”² In determining whether a limitation contained in a SIP (but not “achieved in practice”) is “not achievable,” cost may be taken into account in only a very limited fashion: If the cost of a given control strategy were so great that a new source could not be built or operated, such controls would not be achievable, and thus not required.³ In particular cases, EPA has considered an emissions limit in a permit issued pursuant to an approved SIP to be “contained in” that SIP for LAER purposes, even though NSR permits usually are not actually

conditioned to require the use of a specified alternative control measure which would achieve the same degree of emissions reduction should the [existing] source switch back to a dirtier fuel at some later date.” 40 C.F.R. § 51.165(a)(3)(ii)(B), App. S, § IV, C.2. The remaining restrictions bar credit for the difference between allowable limits and potential to emit, where the first exceeds the second; for reductions already relied upon in issuing a permit or demonstrating attainment; and for switching from one hydrocarbon compound to another of lesser reactivity (with minor exceptions). 40 C.F.R. § 51.165(a)(3)(ii)(A), (D), (G), App. S, § IV, C.1, 4. *See also* 40 C.F.R. § 51.165(a)(3)(ii)(A), (D), (G), App. S, § IV, C.6. In its June 1989 rulemaking, EPA expanded somewhat its list of negligibly photochemically reactive chemicals, which are excluded from the definition of VOC. 54 Fed. Reg. 27286, 27298 (codified at, e.g., 40 C.F.R. § 165(a)(1)(xix). Industry groups petitioned EPA and the courts to add certain halocarbon and perfluorocarbon compounds to this list, in order to facilitate their use as chlorofluorocarbon (CFC) substitutes. *See, e.g.,* Minnesota Mining and Manufacturing Co. v. EPA, No. 89-1500 (D.C. Cir., filed 1989). EPA proposed to add those compounds to the list. *See* 56 Fed. Reg. 11387 (March 18, 1991). In the same breath, it signalled that it will not enforce any requirement to treat those compounds as VOCs. *See* 56 Fed. Reg. 11419 col. 1 (March 18, 1991). EPA took final action to add those compounds on February 3, 1992. *See* 57 Fed. Reg. 3941.

¹⁵*See* Clean Air Act § 173(c)(1), 42 U.S.C.A. § 7503(c)(1).

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¹Clean Air Act § 171(3)(A), (B), 42 U.S.C.A. § 7501(3)(A), (B); 40 C.F.R. § 51.165(a)(1)(xiii).

²H.R. Rep. No. 564, 95th Cong., 1st Sess. 157 (1977) (conference report), *reprinted in* 3 Cong. Research Serv., A Legislative History of the Clean Air Act Amendments of 1977 537 (Comm. Print. 1978).

³H.R. Rep. No. 564, 95th Cong., 1st Sess. 157 (1977) (conference report), *reprinted in* 3 Cong. Research Serv., A Legislative History of the Clean Air Act Amendments of 1977 537 (Comm. Print. 1978). In a guidance memorandum, EPA has taken the position that, in general, a limitation is achievable for LAER purposes unless costs are so great that *no* new plant in the industry could afford the technology. Only a compelling showing of unusual circumstances would justify a lesser degree of control for a particular plant. *See* Memorandum, Guidance on Determining LAER, from John Calcagni, Director, Air Quality Management Division, to David Kee, Director, Air and Radiation Division, Region V (Feb. 28, 1989); *see also* Letter from Mary D. Nichols, Assistant Administrator for Air and Radiation, to William H. Lewis, Attachment, at 27 (May 30, 1995).

included as part of a SIP.⁴ Consequently, such an emissions limit may be deemed LAER for a new source applicant even if the previously permitted source has not completed construction and thus has not “achieved in practice” the emissions limit in question.

§ 12:109 Current federal requirements—Nonattainment and PSD permitting—Substantive nonattainment nsr requirements—Statewide compliance

Section 173(a)(3) of the Act requires the owner or operator of a proposed new source or modification to demonstrate that all major stationary sources owned or operated by the same firm (or its parent or subsidiary firm) are in compliance with all emissions limitations applicable under the Act. This provision defines firms in compliance to include firms on a schedule for compliance.

The statewide compliance requirement extends to all entities which control, are controlled by, or are under common control with, the applicant.¹ The demonstration needed under section 173(a)(3) includes, at a minimum, certification that the relevant sources are in compliance.² The reviewing authority may also require supporting evidence, such as performance test results, monitoring results, and fuel sulfur content documentation.³

§ 12:110 Current federal requirements—Nonattainment and PSD permitting—Substantive PSD requirements

The substantive NSR requirements applicable to major new sources in PSD areas are contained in 40 C.F.R. §§ 52.21 and 51.166. In a minority of states PSD permits are issued under section 52.21 by EPA directly, or by states pursuant to authority delegated by EPA under section 52.21(u).¹ In a majority of states, EPA has transferred PSD permitting to the state by approving, as part of the SIP, PSD rules meeting the requirements of section 51.166. The requirements of sections 52.21 and 51.166 are, for the most part, identical. Accordingly, regulatory references below will be made only to section 51.166 except where section 52.21 differs.

⁴This position relies on a provision of the Part 52 regulations that treats a NSR permit as if it were contained in the SIP for enforcement purposes. *See* 40 C.F.R. § 52.23 (failure to comply with a condition of a permit issued under a SIP is a violation of the SIP itself, and subjects the violator to enforcement action under section 113 of the Act).

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¹*See* 44 Fed. Reg. 3274, 3279 (1979). For example, EPA has ruled that the Department of the Air Force is an “entity controlling” all Air Force facilities in California. Thus, an Air Force command wishing to construct a rocket testing facility was required to demonstrate statewide compliance by all Air Force facilities even though that command had no authority or control over facilities of other Air Force commands. *See* Memorandum, Clean Air Act § 173(3) Statewide Compliance Certification Requirement as Applied to Air Force Facilities, from Lawrence J. Jensen, Acting General Counsel, to Nancy Marvel, Regional Counsel, Region IX (May 18, 1988).

²40 C.F.R. part 51, Appendix S, § IV, A.2. EPA rejected industry contentions that pollution control agencies bear the responsibility for identifying noncomplying sources controlled by the applicant. Relying on the “owner or operator . . . has demonstrated . . . compliance” language of section 173(a)(3), EPA ruled that a permit applicant’s duty to comply subsumes a duty to ascertain compliance status. 45 Fed. Reg. 59874, 59877 (1980).

³45 Fed. Reg. 59877 (1980).

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¹*See, e.g.*, 45 Fed. Reg. 8348 (1980) (delegation of PSD permitting authority to Michigan).

§ 12:111 Current federal requirements—Nonattainment and PSD permitting—Substantive PSD requirements—Source impact analysis

Section 165(a)(3) of the Act provides that proposed major new sources or modifications subject to PSD must demonstrate that they “will not cause or contribute to” a violation of a NAAQS or PSD increment in any area.¹ Taken together with section 110(a)(2)(C) and the implementing regulations at 40 C.F.R. sections 51.165(b) and 51.166, this provision requires any major source or modification locating in a PSD area that would cause or contribute to a NAAQS or increment violation to reduce its prospective impact on air quality insofar as necessary to “compensate” for the adverse impact of its emissions.² In EPA’s view, a source or modification in an area already experiencing violations of the relevant NAAQS, but still lacking an adequate SIP, could compensate for its impact only by providing greater than one-for-one emissions offsets and a net air quality benefit. On the other hand, if the area was previously free of violations or had a SIP assuring timely attainment and maintenance, the project would need to provide no more than one-for-one offsets and, in some cases, only enough offsets to avoid causing a new violation of the standard.³

To demonstrate that a proposed new source would not cause or contribute to NAAQS or increment violations, a permit applicant must assess both the current ambient air quality and the projected impact of the proposed source on air quality. In order to accomplish the first task, the PSD regulations require an applicant to conduct preapplication monitoring.⁴ For NAAQS pollutants, one year of monitoring

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¹An applicant for a PSD permit must submit all information necessary for the source impact analysis or for other PSD permitting purposes. 40 C.F.R. § 51.166(n)(1). This includes design specifications, construction and operating schedules, and a description of the proposed control technology. *Id.* § 51.166(n)(2).

The substantive source impact analysis requirements are contained in 40 C.F.R. § 51.166(k), (m), (o), (p). Pursuant to section 165(b) of the Act, 40 C.F.R. § 51.166(i)(7) exempts modifications of less than 50 tpy from the requirements of 40 C.F.R. § 51.166(k), (m), (o) as they related to class II increments, if the modified source was in existence on March 1, 1978. 40 C.F.R. § 51.166(i)(6) exempts temporary facilities from these requirements if the source will not impact a Class I area or an area where PSD increments are violated. For a discussion of when a source will be deemed to cause or contribute to increment violations in Class I areas, see Memorandum from John Calcagni, Director, Air Quality Management Division, OAQPS, to Thomas J. Maslany, Director, Air, Radiation and Toxics Division, Region III (Sept. 10, 1991).

²See 45 Fed. Reg. 31307, 31310 (1980); 52 Fed. Reg. 24684, 24687 (1987). If a major new or modified source would not exceed the significant ambient impact levels set forth at 40 C.F.R. part 60 it will be deemed not to cause or contribute to a NAAQS violation. These levels are also used for PSD Class II increment purposes.

³EPA articulated this view for the first time in describing how the PSD and section 110(a)(2)(C) permitting system would apply to sources of PM-10. See 52 Fed. Reg. 24684 n.14 (1987). EPA explained:

In areas [with violations but an inadequate plan], new sources would otherwise continue to “contribute” to existing violations if they merely compensated on a one-for-one basis for their own ambient impact and failed to also provide air quality progress, inasmuch as such areas have yet to satisfactorily provide for attainment through available reductions from existing sources. Only by providing for some air quality improvement could new sources help to remedy the existing nonattainment problems in such areas rather than “contributing” to them.

Id.

⁴40 C.F.R. § 51.166(m)(1)(iii). The preapplication monitoring requirement in general applies as to each regulated pollutant a major new source would emit in a significant amount, or which a major modification would emit in a significantly net increased amount. 40 C.F.R. § 51.166(m)(1)(i). There are two exceptions. First, an applicant may be able to escape this requirement as to a particular pollutant if the proposed project would cause concentrations lower than certain *de minimis* values (e.g., ten micrograms per cubic meter (twenty-four hour average) for particulate matter) or existing concentrations are below those values. See 40 C.F.R. § 51.166(i)(8). Second, an applicant may escape the require-

data generally is required.⁵ To accomplish the second task, a permit applicant must provide a detailed modeling analysis of the ambient air quality impact of the proposed source using approved air quality models.⁶ The reviewing authority may

ment as to volatile organic compounds if the applicant has satisfied the requirements of the Offset Ruling (LAER, offsets, state-wide compliance) for that pollutant.

EPA has issued guidelines to assist PSD applicants and reviewing authorities in carrying out this requirement. See OAQPS, Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD), EPA-450/4-80-012 (Nov. 1980) (as revised Feb. 1981, in minor ways); see also OAQPS, Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD) [DRAFT] (Aug. 1984) (incorporating material relating to small particles (PM-10) in response to 1984 proposal to revise the PM NAAQS).

⁵40 C.F.R. § 51.166(m)(1)(iv). The reviewing authority may allow preapplication monitoring for a period shorter than one year—but no less than four months—if it determines that a complete and adequate analysis can be accomplished with monitoring data gathered over that shorter period. *Id.* In practice, only a modest fraction of applicants have to perform monitoring themselves; permitting authorities frequently accept data collected by state or local agencies as part of their normal monitoring programs. See National Commission on Air Quality, *To Breathe Clean Air* 3.5-38 (1981).

The usefulness of monitoring data in showing whether a proposed project will cause or contribute to a violation of NAAQS or increments is compromised by several factors, especially the restrictions on giving credit for the effects of dispersion techniques (such as tall stacks) in setting emissions limitations and the operation of the PSD baseline. For instance, monitoring data may reflect concentrations that are lower than modeling would project because modeling corrects for the effects of dispersion techniques and the temporary absence of emissions from sources that have received permits but are not yet operating. Similarly, monitoring data may not reflect the PSD baseline because it may reflect concentrations from major sources on which construction commenced after January 6, 1975; the statute and regulations expressly exclude those concentrations from the baseline. See, e.g., 40 C.F.R. § 51.166(b)(13)(ii)(a). In view of this, both EPA and the D.C. Circuit have regarded preapplication monitoring as important largely for the purpose of imposing “a certain discipline on the use of modeling techniques” so that they will “be held to earth by a continuing process of confirmation and reassessment.” *Alabama Power Co. v. Costle*, 636 F.2d 323, 372, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20001, 20018-19 (D.C. Cir. 1979). See also 43 Fed. Reg. 26399 (1978) (cols. 1-2); 45 Fed. Reg. 52723 (1980) (col. 3).

⁶40 C.F.R. § 51.166(1), (n)(3). An applicant must use EPA’s *Guideline on Air Quality Models* for this purpose or, where the *Guideline* is inappropriate, an EPA-approved modification or substitution developed in accordance with public participation requirements. 40 C.F.R. § 51.166(I)(1). The *Guideline* is revised periodically, most recently in July 1993. See 58 Fed. Reg. 38817 (July 20, 1993).

40 C.F.R. § 51.166(h) provides that air quality modeling must also conform to EPA’s stack height regulations, which require that only so much of a stack’s height as is consistent with “good engineering practice” may be considered in assessing the air quality impact of an emissions source. See Clean Air Act § 123, 42 U.S.C.A. § 7423; 50 Fed. Reg. 27892 (1985); 40 C.F.R. §§ 51.100(hh)–(kk), 51.118(b). The purpose of these requirements is to discourage the use of dispersion techniques in place of emissions controls in meeting ambient air quality standards.

Issues sometimes arise over the definition of “ambient air” in determining the prospective impact of a PSD source. As a general matter, for purposes of compliance with both increments and NAAQS, EPA excludes only impacts on the atmosphere over land owned or controlled by the source and to which public access is precluded by a fence or other physical barriers. See Letter, Douglas M. Costle, Administrator, EPA, to Jennings Randolph, Chairman, Committee on Environment and Public Works, U.S. Senate, Dec. 19, 1980. This broad view is based on the definition of “ambient air” in 40 C.F.R. § 50.1(e) (“that portion of the atmosphere, external to buildings, to which the general public has access”) and the requirement in section 107 of the Act that states assure “air quality within the entire geographic area comprising such State.” Thus, an ambient air impact generally occurs even on those portions of the private property on which the source is located which lie beyond the “fence line,” because the public has the physical ability to enter such areas, even if entry would constitute an illegal trespass. See Memorandum, Applicability of PSD Increments Over Company Property, from Walter C. Barber, Director, OAQPS to Gordon M. Rapier, Director, Air and Hazardous Materials Division, Region III (May 23, 1977).

In particular cases, EPA has ruled that ambient air impacts occur over water. See Letter, Kee, Director, Air Division, U.S. EPA Region V, to Williams, Director, Indiana EPA, Sept. 4, 1985 (citing earlier memorandum dated Apr. 4, 1985, from Region V meteorologist); Letter, O’Keefe, Vice President, American Petroleum Institute, to Elkins, Acting Assistant Administrator, Office of Air and Radiation, U.S. EPA, Dec. 18, 1975); Letter, Emison, Director, Office of Air Quality Planning and Standards, U.S.

also require post-construction monitoring if it is necessary in determining the source's impact.⁷ In assessing air quality impacts, a permit applicant must consider the full amount of "allowable" primary emissions increase from the proposed new source or modification, as well as other "applicable" emissions increases and decreases.⁸ This aspect of the assessment is similar to the netting calculation conducted in threshold applicability determinations.⁹ However, the "secondary emissions" of the proposed source must also be included in the impact analysis.¹⁰ "Secondary emissions" are those which occur as a result of the construction or operation of the source, but are not emitted by the source itself.¹¹

Beyond the showings relating to NAAQS and increments, an applicant must provide an analysis of existing air quality for any regulated pollutants other than NAAQS pollutants that the proposed project would emit in significant amounts.¹² The applicant must also provide an analysis of the impairment to visibility, soils, and vegetation that would be caused by both the proposed source itself and by secondary commercial, residential, and industrial growth associated with the new source.¹³

Additional impact analysis requirements are applicable to PSD sources that

EPA, to O'Keefe, Jan. 22, 1986. EPA, by deferring to the status quo at the state level in Alabama, appears to have accepted that PSD increments do not apply to rooftops, although it would insist that NAAQS do apply there. See Memorandum, Applicability of PSD Increments to Building Rooftops, Joseph A. Cannon, Assistant Administrator for Air and Radiation, to Charles R. Jeter, Regional Administrator, Region IV (Jan. 11, 1984).

⁷40 C.F.R. § 51.166(m)(2).

⁸40 C.F.R. § 51.166(k). In determining the amount of "applicable" background emissions against which the allowable increase from the new or modified source should be assessed to determine whether it would cause or contribute to a NAAQS violation, EPA formerly called upon applicants to consider the actual level of emissions from existing sources. In recent years, EPA has urged permit applicants to instead rely more heavily on the allowable level of emissions from existing sources, in the same manner as is done for demonstrating stationary source compliance with the NAAQS for SIP purposes. Memorandum, Use of Allowable Emissions for NAAQS Impact Analyses Under the Requirements for PSD, from John Calcagni, Director, Air Quality Management Division, EPA, et al., to Thomas J. Maslany, Director, Air Management Division, EPA Region III, et al. (Mar. 16, 1989).

⁹At a minimum, 40 C.F.R. § 51.166(k) requires a proposed major modification to consider accumulated emissions increases at the source. An applicant must also account for minor source growth in the area, but typically accomplishes this by using a "background" concentration in the modeling exercise.

¹⁰40 C.F.R. § 51.166(k). Thus, the secondary emissions of a proposed source or modification must also be offset if necessary to prevent the source from causing or contributing to a NAAQS or increment violation. In 1983, as part of the *Chemical Mfrs. Ass'n* settlement, EPA proposed to delete these requirements relating to secondary emissions. See 48 Fed. Reg. 38742, , 38750-51. In June 1989, EPA rejected this proposal and retained the requirements. See 54 Fed. Reg. 27286, 27290 (June 28, 1989). The mining industry challenged the 1989 decision. See § 12:88. The court has severed this issue into Case No. 95-1071 and administratively terminated it (subject to reopening on a motion). Order No. 89-1514 (D.C. Cir. 1-27-95).

¹¹40 C.F.R. § 51.166(b)(18). Secondary emissions include those from an offsite support facility which would not occur but for the construction or operation of the major source. See *id.* Examples include a quarry owned by one company that would be located next to a cement plant which the PSD applicant proposes to build and that would supply mainly the cement plant. Secondary emissions do not include any emissions "which come directly from a mobile source." *Id.*

¹²40 C.F.R. § 51.166(m)(1)(i), (ii). This analysis is to include such monitoring as the permitting authority deems necessary. 40 C.F.R. § 51.166(m)(1)(ii). An applicant may be able to escape this requirement if the project would cause concentrations lower than certain *de minimis* values (e.g., 0.25 micrograms per cubic meter (twenty-four hour average) for fluorides), or existing concentrations are below those values, or EPA has yet to set *de minimis* values for the pollutant, as is true for certain regulated pollutants for which no NAAQS exists. 40 C.F.R. § 51.166(i)(8).

¹³40 C.F.R. § 51.166(o). In practice, this analysis often includes impacts on animal life as well. The applicant need not analyze impacts on vegetation having no significant commercial or recreational value. 40 C.F.R. § 51.166(o)(1). In addition, a reviewing court held that EPA need not consider such fac-

would affect a mandatory class I area (national parks and wilderness areas). Clean Air Act § 165(d)(2)(B) charges the officials responsible for such public land, called Federal Land Managers (FLMs), with an “affirmative responsibility to protect the air quality related values (including visibility)” (AQRVs) of such areas. Clean Air Act § 165(d) and 40 C.F.R. § 51.166(p) establish elaborate procedures to carry out this responsibility.

If the FLM (in consultation with EPA) demonstrates that the emissions from the proposed source would have an adverse impact on AQRVs even though the source would comply with class I PSD increments, and the state concurs, a permit cannot be issued.¹⁴ Conversely, the state may provide an increment variance where the permit applicant demonstrates to the FLM that AQRVs will not be adversely affected even though the proposed source would violate class I increments.¹⁵

The Department of Interior manages many of the mandatory class I areas. The Department has set substantive criteria for determining when AQRVs are adversely impacted. Under those criteria the Department examines changes in the physical, chemical, and biological environment (other than changes in air quality) which the proposed source would cause. Minimal impacts are acceptable. However, if the changes would diminish the national significance of the class I area, impair the structure or functioning of the ecosystem, or impair the quality of the visitor experience, the AQRVs will be deemed impaired.¹⁶ In recent years, concern that the individual and cumulative effects of new source growth would worsen existing adverse impacts on class I areas in Virginia and Tennessee has prompted the National Park Service to invoke AQRV protection procedures.¹⁷

tors as community opposition, a “no construction” alternative, alternate sites, and impacts on the local economy. *Hancock County v. EPA*, 22 Env 1714, 1719-20 (6th Cir. 1984).

¹⁴40 C.F.R. § 51.166(p)(3).

¹⁵40 C.F.R. § 51.166(p)(4). If the variance is granted, the source may be permitted if it can comply with alternate statutory increment levels. A similar class I variance from short-term sulfur dioxide increments may be granted by a state governor upon an appropriate demonstration by the applicant, if the source can comply with alternative statutory short-term increments. 40 C.F.R. § 51.166(p)(5), (7). If the FLM does not concur with the governor, an SO₂ variance can be granted only if the President approves it “in the national interest.” 40 C.F.R. § 51.166(p)(6), (7). No gubernatorial or presidential waivers have ever been requested or granted.

¹⁶The Department’s internal procedures for adverse impact determinations are set forth at 47 Fed. Reg. 30226 (1982). Pursuant to those procedures, the Department issued a final certification of no adverse impact on AQRVs despite prospective increment violations at Theodore Roosevelt National Park and Lostwood National Wildlife Refuge. *See* 47 Fed. Reg. 41480, 41482 (1982). The Department’s policy is to conduct worst case analyses with ample margins of protection and to resolve doubts in favor of the lands’ protection. 47 Fed. Reg. 41482 (1982).

In a case involving existing visibility impairment in a class I area, the Department concluded that so long as a PSD permit for a prospective major modification at a pulp mill capped emissions at premodification levels, there would be no adverse impact on AQRVs. Rather, existing impairment would be addressed under the visibility protection provisions of section 169A. *See* 54 Fed. Reg. 36948, 36950 (Sept. 5, 1989); *see also* Letter from Becky Norton Dunlop, Assistant Secretary for Fish and Wildlife and Parks, to Maggie Dean, Georgia-Pacific Corp. (Mar. 15, 1989).

¹⁷The Park Service’s generalized concern over the effects of several planned cogeneration and electric utility facilities on existing adverse impacts on visibility and other AQRVs at Shenandoah National Park prompted it to request that all planned new facilities near Shenandoah obtain emissions offsets to avoid adverse impacts. *See* 55 Fed. Reg. 38403 (1990). The U.S. Forest Service has voiced similar concerns over increased acid deposition at James River Face Wilderness, a class I area near Shenandoah. In the case of one proposed new source, both the Park Service and the Forest Service issued adverse impact findings that were rejected by Virginia. While appeals to the Administrator were pending, Virginia, the Park Service, the permit applicant, and environmental groups agreed to a settlement under which the applicant would obtain emissions offsets from an existing industrial source. In endorsing this compromise approach, the Administrator noted that although such offsets were not provided for in the Act or EPA’s regulations, they were analogous to the offset provisions of

§ 12:112 Current federal requirements—Nonattainment and PSD permitting—Substantive PSD requirements—Compliance with increments

Section 163(b) of the Act established statutory increments for sulfur dioxide and particulate matter (i.e., TSP). Different increments were established for class I, class II, and class III areas, with the least growth of pollutant-emitting sources allowed in class I areas and the most in class III areas. In addition, section 166 of the Act required EPA to promulgate increments or equivalent PSD regulations for other criteria pollutants by 1979. EPA still has not established regulations under section 166 for most of these pollutants.¹ However, in 1988 the Agency promulgated increments for nitrogen oxides.² Most recently, EPA promulgated increments for

Part D and would reasonably serve the purpose of protecting AQRVs. However, he declined to opine on whether the location or amount of emissions offsets in that case was appropriate. *See Multitrade Limited Partnership*, PSD Appeal No. 91-2 (Remand Order and Dismissal of Petitions for Review, Jan. 21, 1992) at 7 n. 5. In another case, *Virginia, the Park Service, and the applicant* agreed that the applicant could moot an adverse impact finding regarding a new power plant in Virginia by obtaining reductions from a power plant in West Virginia earlier than required under the acid rain program in Title IV of the Act. Environmental groups rejected the agreement as inadequate, but the Administrator denied the groups' appeal on its merits, essentially because of an inadequate quantitative showing of adverse impact. *See Old Dominion Elec. Coop.*, PSD Appeal No. 91-39 (Order Denying Review, 1-29-92). Most recently, in a decision with potentially far-reaching effects, the Environmental Appeals Board remanded a PSD permit to Virginia, primarily because of the state's failure to adequately address adverse impact findings by the FLMs. *See Hadson Power 14 - Buena Vista*, PSD Appeal No. 92-3 (Remand Order, 10-5-92).

A similar controversy has arisen regarding the impact of new sources on existing AQRV impairment at Great Smoky Mountains National Park. At one point, the Park Service declared preliminarily that any major new or modified sources within 200 km of the park would adversely impact AQRVs. 57 Fed. Reg. 4465 (1992). In commenting on a specific permit application, however, the Park Service remarked that federal land managers, EPA, industry, and states had agreed at a recent meeting that in addition to review of new sources, a regional strategy focusing on existing sources is needed to address this regional-scale problem.

These controversies highlight the potential conflict between the localized concerns of the PSD program and the regional, market-based approach of the acid rain provisions of Title IV of the 1990 Clean Air Act Amendments. Title IV is expected to significantly decrease regional scale visibility impairment in the East over time as regional sulfur dioxide emissions are reduced. However, EPA projects that Virginia in particular will experience a significant *increase* in emissions due to increases in electrical generating capacity. *See* 55 Fed. Reg. 38405. It may prove extremely difficult to demonstrate increased visibility or other AQRV impairment from one or more new sources that would locate near a class I area, given the present limitations of dispersion models and the fact that even very substantial new source growth would still be dwarfed by sulfur loadings due to existing sources under most conditions. If the federal land managers can overcome these obstacles to a sustainable adverse impact finding, offsets may be an appropriate remedy. Were this to occur, however, it would effectively impose an areawide emissions cap. This might be viewed as inconsistent with the nationwide market in sulfur dioxide allowances under Title IV. In addition, it is uncertain whether emissions reductions already required under the acid rain law should also be used as AQRV offsets under PSD. *Cf.* Clean Air Act § 173(c)(2) (emissions reductions otherwise required by the Act are not creditable as offsets in nonattainment areas under Part D).

[Section 12:112]

¹In 1980 EPA published an advance notice of proposed rulemaking stating the Agency's intention to develop regulations under section 166 for other criteria pollutants, termed "Set II" pollutants. *See* 45 Fed. Reg. 30068 (1980). The rulemaking project was suspended in 1981, however, due to budgetary restraints, changes in regulatory priorities within the White House, and uncertainty as to the efficacy of a PSD program for the Set II pollutants. (Those pollutants are primarily associated with mobile source emissions.) EPA's position is that the section 110(a)(5)(C) general prohibition on review of "indirect sources" of pollution (i.e., those which attract mobile sources), such as shopping centers and sports arenas, extends to section 166 programs as well (except as to federally-assisted projects). *See* Memorandum from Peter H. Wyckoff, Office of General Counsel (Aug. 7, 1979).

²As a result of a lawsuit by environmental groups, EPA promulgated increments for nitrogen

particulate matter to reflect the revised PM-10 NAAQS.³

As noted above, the PSD source impact analysis is conducted in reference to ambient pollution limits established both by PSD increments and by the NAAQS. With respect to the NAAQS, the new source's impact is assessed against the constant NAAQS limits set forth in 40 C.F.R. part 50. Demonstrating compliance with increments, however, is a more complex task which requires several interrelated determinations.

In a nutshell, the increment provision works as follows: The first complete application for construction of a major new source or modification in a PSD area after a "major source baseline date"⁴ triggers a "minor source baseline date" and a "baseline concentration" for the given pollutant in the "baseline area." The first permittee draws down the available increment.⁵ Subsequent applicants for PSD permits draw upon the amount of increment remaining following the issuance of the first permit and later permits, if any.⁶ The remaining increment is further reduced by any intervening minor source growth. The "baseline concentration" is defined as

oxides, measured in terms of nitrogen dioxide, on October 17, 1988 (53 Fed. Reg. 40656 (1988)). See *Sierra Club v. Thomas*, 658 F. Supp. 165, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20875 (N.D. Cal. 1987). The statute requires that section 166 regulations be "at least as effective as" the statutory increments in section 163 at fulfilling the "goals and purposes" of the PSD program. See Clean Air Act § 166(d), 42 U.S.C.A. § 7476(d). In adopting nitrogen dioxide increments, EPA interpreted section 166 as reflecting a congressional intent to focus on ambient air quality concentrations. Hence, the nitrogen dioxide increments reflect the same percentages of the NAAQS as the statutory increments for sulfur dioxide and (with one exception) particulate matter. In following this path, EPA rejected industry arguments that nitrogen dioxide increments should be less stringent than the sulfur dioxide increments because limiting nitrogen dioxide concentrations assertedly provides fewer environmental benefits. EPA likewise rejected environmental group arguments that it should have considered short-term increments and effects of other nitrogen oxides in order to address acid rain and visibility impairment. On judicial review, the D.C. Circuit ruled that Clean Air Act § 166(c) required an independent inquiry as to whether the increments chosen fulfilled the PSD "goals and purposes," and EPA erred in effectively subsuming Clean Air Act § 166(c) within the "at least as effective as" test of section 166(d). The court let stand the increments promulgated by EPA, but remanded the case to EPA for new rulemaking harmonizing subsections (c) and (d). *EDF v. EPA*, 907 F.2d 1179 (D.C. Cir. 1990). As of early 1996, EPA has yet to respond to this remand.

As required by section 166(b), the nitrogen dioxide increments were not "effective" for one year following promulgation, *after* which states were allowed nine months to submit, and EPA four more months to approve, corresponding SIP revisions. However, very few states submitted timely SIP revisions, and the NO_x increments were actually made effective in only one state by the targeted implementation date of November 17, 1990. See 54 Fed. Reg. 32971 (1989). Since most implementation issues were settled by the 1988 promulgation of the nitrogen dioxide increments, EPA presumably will issue a notice implementing the increments in the FIPs under 40 C.F.R. § 52.21 of states lacking an approved PSD program, and conduct expedited rulemaking to approve SIP revisions and promulgate FIPs as to the states that previously obtained approval of the balance of the PSD program.

³See 58 Fed. Reg. 31622 (June 3, 1993) (final); 54 Fed. Reg. 41218 (1989) (proposal dated Oct. 5, 1989). The 1990 Amendments now expressly authorize EPA to repeal the TSP increments and substitute PM-10 increments. The substitute increments, however, have to operate as stringently as the TSP increments. See Clean Air Act § 166(f), 42 U.S.C.A. 7476(f). The final substitution attracted a challenge, *American Mining Congress v. EPA*, No. 93-1477 (D.C. Cir. 1993), but that case has been administratively terminated (pending reopening by a motion). Order No. 89-1514 (1-27-95).

⁴For sulfur dioxide and particulate matter (TSP), the major source baseline date is January 6, 1975; for nitrogen dioxide, it is February 8, 1988. 53 Fed. Reg. 40670 (1988) (codified at 40 C.F.R. § 51.166(b)(14)(i)).

⁵Where EPA is the permitting authority, it has always allocated available increment on a first-come, first-served basis, using the date of submission of a "complete" application as the benchmark. See 43 Fed. Reg. 26380, 26401 (1978); *Hancock County v. EPA*, 742 F.2d 1455, 22 Env't Rep. Cas. (BNA) 1714, 1715 (6th Cir. 1984). Clearly, states are free to adopt different policies for increment allocation. 43 Fed. Reg. 26401 (1978); *Alabama Power Co. v. Costle*, 636 F.2d 323, 361, 364, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20001, 20012, 20013-14 (D.C. Cir. 1979). However, they have not elected to do so.

⁶Increment is also consumed by increased emissions from minor sources. However, 40 C.F.R. § 51.166(f) allows states to exempt some emissions increases from increment consumption. Examples

the ambient level of the pollutant in question on the minor source baseline date. It is derived from actual emissions, but includes certain adjustments.⁷

The minor source “baseline date” is the earliest date that a major source or modification files a complete application for a PSD permit, and is triggered for each pollutant which the new source would emit in a significant amount.⁸ The “baseline area” is also pollutant-specific and includes the designated attainment or unclassifiable area where the new source would locate, as well as any other such area within the state experiencing an impact of one microgram per cubic meter from that proposed source.⁹

§ 12:113 Current federal requirements—Nonattainment and PSD permitting—Substantive PSD requirements—Redesignation

States may alter the available emissions increments in PSD areas by the redesignation process. The 1977 Amendments both established an original classification scheme for PSD areas and provided for subsequent redesignation of areas within certain limits. The statute restricted a state’s ability to redesignate by establishing a subclass of “mandatory” class I areas which cannot be redesignated.¹ All other PSD areas were originally designated as class II.² However, Congress further restricted redesignation by establishing a subclass of mandatory class II areas which can only be redesignated as class I.³

In keeping with the general purposes of the PSD program, a redesignation decision either to allow increased pollutant-causing industrial activities or to further re-

include temporary increases, 40 C.F.R. § 51.166(f)(1)(ii), (f)(1)(v), (f)(4), and increases due to certain fuel switches. 40 C.F.R. § 51.166(f)(1)(i), (ii).

The 1990 Amendments allow the permitting authority in assessing the impact of fugitive emissions from strip mines to use “alternative empirical based modeling approaches” instead of the applicable EPA guideline model until such time as EPA revises that model and the accompanying emission factors to eliminate any significant overprediction. *See* § 234, 104 Stat. 2399.

⁷Principally, actual emissions from any major source on which construction commenced after the major source baseline date are excluded from the baseline concentration and instead “will affect the applicable maximum allowable increase(s).” Clean Air Act § 169(4), 42 U.S.C.A. § 7479(4); 40 C.F.R. § 51.166(b)(13)(ii)(a). Presumably, the quoted passage means that such emissions increases have consumed increment even though they occurred prior to the minor source baseline date. An argument could be made, however, that this consumption does not occur until the baseline is triggered by the first PSD applicant. Nevertheless, under either interpretation the first PSD applicant would be confronted with a depleted increment. Indeed, emissions from such previously constructed sources could, in theory, exceed the entire increment, leaving none available for even the first PSD applicant and requiring state action to remedy the increment violation. *See* 40 C.F.R. § 51.166(a)(3). In practice, EPA has never confronted such a situation, but has addressed the possibility that it would have arisen in Prudhoe Bay, Alaska, due to North Slope oil development if EPA had set a 1980 major source baseline date for the nitrogen dioxide increments. *See* 53 Fed. Reg. 3698, 3706 (1988) (proposed rule).

⁸40 C.F.R. § 51.166(b)(14). As to major modifications, the baseline date is triggered for each pollutant emitted in a significantly increased amount. 40 C.F.R. § 51.166(b)(14)(ii)(b).

⁹40 C.F.R. § 51.166(b)(15).

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¹The mandatory Class I areas are: international parks, national wilderness areas and national memorial parks larger than 5,000 acres, and national parks larger than 6,000 acres which were in existence on August 7, 1977. Any area redesignated as class I by EPA regulation prior to enactment of the 1977 Amendments is not mandatory and may be redesignated. Clean Air Act § 162(a), 42 U.S.C.A. § 7472(a). *See also* 40 C.F.R. § 51.166(e)(1)–(2). The 1990 Amendments updated the boundaries of Class I areas so as to reflect expansions or contractions since 1977. *See* § 108(m) and (n), 104 Stat. 2399.

²Clean Air Act § 162(b), 42 U.S.C.A. § 7472(b). *See also* 40 C.F.R. § 51.166(e)(3).

³The mandatory class II areas are the following national areas which are larger than 10,000 acres: monuments, primitive areas, preserves, recreation areas, wild and scenic rivers, wildlife refuges, lakeshores, seashores, and parks and wilderness areas established after August 7, 1977. Clean Air Act § 164(a)(1), (2), 42 U.S.C.A. § 7474(a)(1), (2). *See also* 40 C.F.R. § 51.166(e)(4).

strict economic growth must be consciously made, and only after notice to and opportunity for comment by the public and other interested parties. Clean Air Act § 164 and 40 C.F.R. § 51.166(g) set forth the detailed procedural requirements for redesignation.

There must be at least one public hearing on a proposed redesignation,⁴ with advance notice given to appropriate parties.⁵ At least thirty days before the hearing, the state must make available a detailed analysis of the reasons for and effects of the redesignation. This analysis must address health, environmental, economic, social, and energy effects.⁶ If the redesignation would include federal lands, the state must solicit comments from the FLM. His recommendations, and the state's reasons for proposing a redesignation despite a contrary recommendation by the FLM, must be published prior to the public hearing.⁷ Final approval of a redesignation to class III requires specific approval by the state's governor, after consultation with the legislature, and local governments representing a majority of the residents in the redesignated area. It is subject to other restrictions as well.⁸

Lands within Indian reservations may be redesignated only by the appropriate Indian governing body, which must follow the procedures outlined above.⁹

The role of EPA in the redesignation process is limited, reflecting congressional concern that states be given the maximum control over land use policies that is consistent with the Act's environmental preservation purposes.¹⁰ EPA may consult with the FLM, and may present its views to the state, thereby informally influencing the decision making process. Officially, however, EPA's role is limited to disapproving a proposed redesignation for failure to follow required procedures.¹¹

§ 12:114 Current federal requirements—Nonattainment and PSD permitting—Substantive PSD requirements—Best available control technology

Major projects constructing under a PSD permit are required to apply the best available control technology (BACT). BACT is defined as the maximum degree of emissions reduction that the reviewing authority determines is "achievable." BACT is determined on a case-by-case basis, "taking into account energy, environmental,

⁴40 C.F.R. § 51.166(g)(2)(i).

⁵The public, as well as other affected states, Indian governing bodies, and federal land managers whose lands might be affected must be notified thirty days prior to the hearing. 40 C.F.R. § 51.166(g)(2)(ii).

⁶40 C.F.R. § 51.166(g)(2)(iii).

⁷40 C.F.R. § 51.166(g)(2)(iv).

⁸40 C.F.R. § 51.166(g)(3)(ii). The state may require specific approval by the legislature. *Id.* In addition, redesignation to class III may not occur if it would cause a NAAQS or increment violation in another area. 40 C.F.R. § 51.166(g)(3)(iii). Further, any pending PSD application which could not be approved without the class III redesignation must be identified, and relevant information regarding the application made available, at the redesignation hearing. 40 C.F.R. § 51.166(g)(3)(iv).

⁹40 C.F.R. § 51.166(g)(4); *see also* Nance v. EPA, 645 F.2d 701, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20526 (9th Cir. 1981). Final action is pending on two redesignations to Class I that were instituted by Indian tribes. The proposals appear at 60 Fed. Reg. 33779 (June 29, 1995) and 59 Fed. Reg. 18346 (Apr. 18, 1994).

¹⁰*See* Alabama Power Co. v. Costle, 636 F.2d 323, 364, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20001, 20013 (D.C. Cir. 1979).

¹¹40 C.F.R. § 51.166(g)(5). In addition, the Administrator may resolve and, in some cases, must arbitrate redesignation disputes between states and Indian tribes. Clean Air Act § 164(e), 42 U.S.C.A. § 7474(e).

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¹Clean Air Act § 169(3), 42 U.S.C.A. § 7479(3); 40 C.F.R. § 51.166(b)(12). Where the reviewing

and economic impacts and other costs.”² By virtue of the strong discretionary flavor of this definition, cost plays a stronger role in BACT determinations than in LAER determinations under nonattainment NSR. This is understandable given the respective statutory goals of air quality improvement under Part D and air quality maintenance under Part C. Thus, balancing cost and the other enumerated factors can serve to weaken or to strengthen the control technology requirements in a given case.³

authority finds that technological or economic limitations render emissions limits infeasible, it may instead prescribe a design, equipment, work process, or operational standard. 40 C.F.R. § 51.166(b)(12). As with other substantive PSD requirements, BACT applies to all regulated pollutants emitted in a significant amount. 40 C.F.R. § 51.166(j)(2), (3).

²Clean Air Act § 169(3), 42 U.S.C.A. § 7479(3); 40 C.F.R. § 51.166(b)(12). In no event may BACT be less stringent than any standard under section 111 (NSPS) or section 112 (NESHAPS). *Id.* In addition to the BACT requirements, a PSD source must comply with all applicable emissions limits in the SIP. 40 C.F.R. § 51.166(j)(1).

³*See* Columbia Gulf Transmission Co., PSD Appeal No. 88-11 (6-21-89).

A reviewing court has ruled that EPA cannot set unachievable emissions control requirements as a means of addressing environmental or other concerns. *Hancock County v. EPA*, 742 F.2d 1455, 22 Env’t Rep. Cas. (BNA) 1714, 1719-20 (6th Cir. 1984). However, the Senate Report on the 1977 Amendments evinced Congressional intent that a state could “reject” a PSD application when an analysis of energy, economics, or environmental concerns indicate that the impact of a proposed source “could alter the character of the community.” S. Rep. No. 127, 95th Cong., 1st Sess. 31 (1977), *reprinted in* 3 Cong. Research Serv., A Legislative History of the Clean Air Act Amendments of 1977 1405 (Comm. Print 1978). Such a rejection would appear to prevent the construction of a major source as effectively as setting an unachievable emissions limit. This calls into question the wisdom of the *Hancock County* decision, since when EPA is the permitting authority, in essence it serves the same function as that of the state discussed in the Senate Report.

At the other extreme, there is also an open question as to a permitting authority’s ability to require only lax controls—or even none at all—as BACT in the absence of NSPS, NESHAPS, SIP, NAAQS, or increment strictures. Congress apparently envisioned the BACT requirement as a technology-forcing measure which would result in “the adoption of improvements in technology.” S. Rep. No. 127, 95th Cong., 1st Sess. 31 (1977), *reprinted in* 3 Cong. Research Serv., A Legislative History of the Clean Air Act Amendments of 1977 1405 (Comm. Print 1978). At the same time, however, Congress stressed that BACT is a case-by-case determination under which the state has broad flexibility to determine the weight assigned to the various relevant factors, including cost. *Id.* EPA engaged in protracted litigation over Michigan’s BACT decision, based largely on cost concerns, to require no controls on SO₂ emissions for a resource recovery facility in Detroit. However, the case was disposed of without addressing the merits of the BACT determination, although EPA’s authority to question the propriety of the SO₂ limits in the permit issued by the state acting as EPA’s delegate was ultimately upheld in collateral litigation regarding attorney’s fees. *See Greater Detroit Resource Recovery Auth. v. Adamkus*, 916 F.2d 317 (6th Cir. 1990).

Subsequent to the Detroit case, EPA challenged a BACT decision by Pennsylvania under an approved state program that incorporated 40 C.F.R. § 52.21 by reference. *See United States v. Solar Turbines, Inc.*, 732 F. Supp. 535 (M.D. Pa. 1990). In that case, the state decided not to require a cogeneration project to use available add-on controls for cost reasons. EPA directed its attack not to the outcome of the state’s deliberations, but rather to the rationality of those deliberations inasmuch as the record contained no substantiation for the applicant’s claims that the cost of the controls would threaten the financial viability of the project or the competitiveness of its owner. Thus, EPA appears to have concluded that at least one boundary on state BACT discretion consists of the traditional rules of rational administrative agency decisionmaking. *See* note 225.1. Indeed, a decision on appeal of a PSD permit affirms that EPA has so concluded. *See Hibbing Taconite Co.*, PSD Appeal No. 89-3, at 8 (Order on Petition for Review, 7-19-89). The district court in *Solar Turbines*, however, dismissed that case without reaching the merits. *United States v. Solar Turbines, Inc.*, 732 F. Supp. 535, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20562 (M.D. Pa. 1989). *But see* § 12:113.

In another case, the Administrator, in deciding an appeal from a PSD permit, identified yet more boundaries on state discretion. Kentucky had issued a permit for a gas turbine without requiring add-on controls, although water injection was available. EPA Region IV complained that water injection was not unreasonable and hence should have been adopted as BACT. The state argued that water injection would not significantly improve the air quality impacts of the turbine and would cost a substantial amount. The Administrator sided with the Region. He construed the definition of BACT as

Under the statutory definition, a control technology logically could be designated as BACT if it is “available” at any time prior to issuance of the PSD permit.⁴ For phased projects, BACT may be reviewed and modified up to the latest reasonable time, defined as eighteen months prior to the commencement of construction on that phase.⁵ The regulations provide that, as an alternative to BACT, a state may allow a major PSD source to utilize a system of innovative control technology which ultimately will be as effective as BACT in controlling emissions. Several restrictions are imposed on the use of innovative control technology to assure that the proposed source will not endanger the environment or public health and welfare.⁶

Recent years have seen tremendous growth in the number of resource recovery plants and other municipal waste combustion (MWC) facilities, largely in response to the solid waste disposal problems posed by the looming shortage of landfills and the environmental hazards they create. However, incineration is not a cost-free solution, but instead poses its own set of air pollution problems. The resulting PSD permitting of these new facilities has caused EPA to focus renewed attention on the BACT determination process. Two important developments arising from MWC permit proceedings led EPA in the late 1980s to adopt a so-called “top-down” BACT policy for all PSD source categories.

First, in a 1986 PSD permit appeal action, the Administrator interpreted the “environmental impacts” language of the BACT definition as allowing consideration of the effects of emissions of unregulated pollutants by a MWC, in determining BACT for regulated pollutants emitted by that facility.⁷ As a consequence, EPA policy now calls for such a “collateral impacts analysis”: where two technology

requiring adoption of the most effective available technology, unless the applicant shows that economic, environmental, or energy impacts make the choice of that technology unreasonable. In his view, the purpose of BACT is primarily technology-forcing and the consideration of costs and other factors is only a safety valve. The Administrator further ruled that the absence of air quality benefits is not a relevant factor, because Congress intended that only adverse collateral environmental impacts that would constrain the use of a particular technology were to be taken into account. Thus, for example, a state may select a less effective level of control if selection of the more effective level would cause unreasonable demands on local water resources. *See* Columbia Gulf Transmission Co., PSD Appeal No. 88-11 (Order, 6-21-89).

Still another boundary is the newly highlighted requirement that the applicant show how it will meet the BACT it proposes by specifying the controls it will use in order to comply. *See* Hibbing Taconite Co., PSD Appeal No. 87-3, at 10-12 (Order on Petition for Review, 7-19-89).

The EPA Environmental Appeals Board has affirmed that a PSD permitting authority may take the basic design of a proposed source as a given and not insist on fundamental changes to production processes. *See* In re SEI Birchwood, Inc., PSD Appeal Nos. 93-11, -12, at 11 (EPA EAB 1-27-94).

⁴Exclusion of a control technology from consideration as BACT because it became available only after a completed PSD permit application was filed would negate the PSD public participation requirements. *See* 40 C.F.R. § 51.166(q). Consequently, the permitting authority must consider technologies that become available prior to the close of the public comment period, and possibly at any time prior to permit issuance. *See* Letter from Gary McCutchen, Chief, New Resource Review Section, OAQPS, to John Daniel, Assistant Executive Director, Virginia Department of Air Pollution Control (June 15, 1989). In addition, in the nonattainment NSR context, where the Agency discovers that a source has been constructed without a permit, LAER is determined as of the time of “postconstruction review,” not the time of actual construction. Memorandum, LAER Determination for Previously Constructed Source, from John S. Seitz, Director, Stationary Source Compliance Division, to Thomas J. Maslany, Director, Air Management Division, Region III (Aug. 9, 1989).

⁵40 C.F.R. § 51.166(j)(4).

⁶*See* 40 C.F.R. § 51.166(s). In addition, EPA has indicated that innovative control technology waivers for any given technology will be limited in number. The Agency reasons that once a technology has been demonstrated, subsequent applications are no longer “innovative.” *See* Memorandum from Ed Lillis, Chief, Permits Program Branch, OAQPS, to Kenneth Eng, Chief, Air Compliance Branch, Region II (Aug. 20, 1991).

⁷*See* North County Resource Recovery Assocs., PSD Appeal No. 85-2, Order of the Administrator, June 3, 1986.

choices provide equivalent control for a regulated pollutant, but one would have the collateral effect of also controlling pollutants not directly regulated by the PSD program, that one should be chosen as BACT.⁸

Second, in another PSD appeal, the Administrator held that a PSD applicant had the burden of demonstrating that significant local cost factors warrant a finding that a control technology less efficient than scrubbers represents BACT for a MWC.⁹ That resulted in another policy guidance document extending the Administrator's ruling to all MWC permitting decisions. In essence, this operational guidance calls for a "top-down" approach to BACT determinations for MWCs: the most effective control technology that is available should be considered first. Only significant, local economic factors can justify a conclusion that these controls are too costly and allow consideration of the next most effective technology, and so on.¹⁰

The logic of the Administrator's permit appeal decisions and the subsequent EPA policy guidance is not limited to MWCs. Apparently as a result, the Agency in 1987 announced its intention to extend its "top-down" BACT policy to all source categories, and directed Regional Offices to apply it in reviewing permits issued by state agencies.¹¹ The top-down policy is procedural, not substantive, in nature. Hence, EPA's guidance for MWCs stressed that local permitting authorities retain their authority to make case-by-case BACT determinations.¹² As to other source categories and technologies, the use of a top-down methodology has become widespread

⁸See Memorandum, Implementation of North County Resource Recovery PSD Remand, from Gerald A. Emison, Director, Office of Air Quality Planning and Standards (Sept. 29, 1987); Memorandum, Supplemental Guidance on Implementing the North County PSD Remand, from Gerald A. Emison (July 28, 1988). This may result in significant de facto control of presently "unregulated" acid gases, toxic organics, and heavy metals.

⁹See Honolulu Resource Recovery Facility, PSD Appeal No. 86-8, Order of the Administrator, June 23, 1987. In a subsequent case, the Administrator reiterated the need for a thorough BACT analysis in remanding a PSD permit for a MWC because it lacked adequate justification for the failure to require "thermal de-NO_x" technology as BACT for NO_x. See Pennsauken County, New Jersey Resource Recovery Facility, PSD Appeal No. 88-8 (Remand Order, 11-10-88). See also Spokane Regional Waste-to-Energy, PSD Appeal No. 88-12 (Order Denying Review, 6-9-89).

¹⁰See Memorandum, Operational Guidance on Control Technology for New and Modified Municipal Waste Combustors, from Gerald A. Emison, Director, OAQPS (June 26, 1987). EPA has since proposed new source performance standards for emissions of regulated and unregulated (or "designated") pollutants from MWCs under section 111 of the Act, 54 Fed. Reg. 52251 (1989), and has agreed to take final action before 1991. See *NRDC v. Thomas*, No. 87-1466 (D.C. Cir. filed 9-4-87).

¹¹See Memorandum, Improving New Source Review Implementation, from J. Craig Potter, Assistant Administrator, to Regional Administrator, Regions I - X (Dec. 1, 1987), at 4.

In 1989 EPA issued a draft guidance summarizing the top-down methodology. See Office of Air Quality Planning and Standards "Top-Down' Best Available Control Technology: A Summary" (May 25, 1989). At about the same time, the Agency issued a paper discussing the origins of and rationale for the policy. See Memorandum, Transmittal of Background Statement on "Top-Down" Best Available Control Technology, from John Calcagni, Director, Air Quality Management Division to Air Division Directors, Regions I-X (June 13, 1989). The Agency subsequently issued further draft guidance containing much additional detail. See Office of Air Quality Planning and Standards "Top-Down' Best Available Control Technology Guidance Document" (March 15, 1990). For a recounting of the theory and application of the "Top-Down" approach, see Spokane Regional Waste-to-Energy, PSD Appeal No. 88-12, at 8-11 (Order Denying Review, 6-9-89).

The decision to apply the top-down requirement across-the-board provided that BACT decisions not reflecting adequate consideration of the factors relevant to a top-down analysis would be considered deficient by EPA. See Memorandum, Dec. 1, 1987, at 4. EPA will consider enforcement action to remedy such deficient permits. See § 12:113.

¹²The MWC guidance pointed out, however, that the availability, effectiveness, and manageable cost of scrubber technology made it highly likely that few, if any, future MWCs can in practice avoid the use of controls at least as effective as scrubbers. See Memorandum, Operational Guidance on Control Technology for New and Modified Municipal Waste Combustors, from Gerald A. Emison, Director, OAQPS (June 26, 1987), at 5. The guidance also made it clear that BACT is an evolving concept, and hence, that permitting authorities need to consider emerging technologies that might provide

since the mid-1980s. Judging from permits appealed to EPA, however, the top-down policy has not resulted in the widespread reversal of decisions by state permitting authorities.¹³ Nevertheless, the prospect that EPA's top-down policy will as a practical matter constrain permitting authorities' discretion to consider cost, thereby resulting in more stringent BACT determinations, has caused fierce opposition from industry groups. EPA has asserted that the top-down policy represents no fundamental change from the two "core criteria" set forth in earlier BACT guidance consideration of all available pollution control technologies (including the most stringent ones), and a reasoned explanation based on energy, environmental, and economic impacts of any decision not to use the most stringent technologies as BACT.¹⁴ In this view, industry's true objection is to increased oversight of state decisionmaking.

greater control. *Id.* at 6.

The 1987 guidance for MWCs is noticeably silent on the question of whether recycling, source separation, production and use limitations, or other methods of reducing the quantity of waste generated are suitable candidates for BACT. Given the broad scope of the BACT definition and the underlying purposes of PSD, it appears that such methods could not be dismissed out of hand without artificially narrowing the range of overall pollution control options.

The Administrator has addressed these issues in PSD permit appeal decisions. In one, the Washington State Department of Ecology had issued, under 40 C.F.R. § 52.21, a PSD permit for a large, well-controlled municipal waste incinerator in Spokane. Two citizen groups complained to EPA that the state had failed to consider adequately "fuel cleaning and separation." The Administrator dismissed the appeal primarily on the ground that the citizens had failed to establish "as a threshold matter that these practices are 'available' to the applicant, e.g., that there are sufficient data indicating (but not necessarily proving) that their additional control technologies, in conjunction with the conventional, state-of-the-art controls considered in the Spokane BACT analysis, will lead to a demonstrable reduction in emissions of regulated pollutants or will otherwise represent BACT." Spokane Regional Waste-to-Energy, PSD Appeal No. 88-12, at 22 (Order Denying Review, June 9, 1989). The Administrator emphasized that recycling and separation are key elements of any intelligent waste management program (*id.* at 4) and that he expected future PSD applications to consider whether enough data had emerged to support a conclusion that such strategies are "available" for BACT purposes (*id.* at 22). The Administrator's decision was upheld in *Citizens for Clean Air v. EPA*, 959 F.2d 839, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20669 (9th Cir. 1992). In an earlier decision regarding MWCs, the Administrator held that a petitioner could not force an applicant to fundamentally redefine the scope of the proposed project by abandoning the MWC in favor of co-firing municipal waste in existing power plants. See *Pennsauken County, New Jersey Resource Recovery Facility*, PSD Appeal No. 88-8 (Remand Order 11-10-88).

EPA shifted course on the source separation issue in 1992. In *Brooklyn Navy Yard*, PSD Appeal No. 88-10 (Remand Order, 2-28-92), the Administrator found that source separation is now an available technology, relying on developments since his earlier Spokane decisions. In particular, in a case involving nitrogen oxides emissions, he held that the petitioner had presented a better case for the air quality benefits of source separation, including newer studies, and the fact that the permitting authority had required separation of certain materials as back-up measure for nitrogen oxides controls, thereby implicitly determining that "certain separation programs are likely to reduce NO_x emissions." *Brooklyn Navy Yard* at 13. The Administrator's decision also reflected the basic policy decision, set forth in a final rule establishing new source performance standards for MWCs, *not* to establish a nationwide source separation requirement, but rather to raise it "on a case-by-case basis in individual BACT determinations." *Id.* (citing 56 Fed. Reg. 5496 n. 4 (1991)). The reasoning of *Brooklyn Navy Yard* leaves little doubt that EPA believes all future BACT determinations for MWCs must consider source separation for all pollutants. The decision also forecast that such consideration may result in downsizing new sources, and that this would be consistent with the air quality planning and pollution prevention purposes of the PSD program. *Id.* at 20 n. 7. This suggests that EPA may be reconsidering whether PSD permitting should be used to redefine the scope of a new source as originally proposed by a permit applicant.

¹³See, e.g., *Mecklenburg Cogeneration Limited Partnership*, PSD Appeal No. 90-7 (Order Denying Review, 12-21-90) (upholding delegated state decision using top-down methodology); *Union County Resource Recovery Facility*, PSD Appeal No. 90-1 (Order Denying Review, 11-28-90) (same).

¹⁴The Agency maintains that EPA's earliest guidance, "Guidelines for Determining Best Available Control Technology" (Office of Air Quality Planning and Standards, Dec. 1978) called for PSD applicants to follow these core criteria in a "bottom-up" fashion, by considering the least stringent options

In response to industry and White House concerns, EPA agreed in 1991 to undertake rulemaking to resolve the tension between local discretion and technology-forcing inherent in the BACT provision.¹⁵ It appears likely that EPA will follow a more general “core criteria” approach in this rulemaking that does not specify which technologies are considered first in the BACT analysis. As of this writing, however, EPA has not yet published a rulemaking proposal.¹⁶ In a related development, as part of the WEPCO rulemaking, EPA proposed to adopt a presumption that “low-NO_x burner technology” represents BACT for control of nitrogen oxides (NO_x) emissions from modifications at existing coal-fired utility boilers. In response to numerous negative comments to the effect that low-NO_x burners simply do not represent BACT, the final WEPCO rule dropped the NO_x presumption.¹⁷

§ 12:115 Current federal requirements—Nonattainment and PSD permitting—Procedural requirements: Permit processing, issuance, and appeals

Upon receipt of a complete PSD application, the reviewing authority has one year to issue a preliminary determination that the permit should be approved, approved with conditions, or denied.¹ The public and affected parties must be notified of the preliminary determination, and given an opportunity for a public hearing and

first, and that the top-down methodology is not fundamentally different. *See* Letter from Michael H. Shapiro, Deputy Assistant Administrator, EPA, to Michael C. Farrar, Vice President, American Paper Institute/National Forest Products Association (July 12, 1990).

¹⁵The pulp and paper and utility industries initiated litigation seeking to overturn EPA’s top-down policy on the grounds that it is inconsistent with the statutory BACT requirement and was improperly implemented without notice-and-comment rulemaking. *See* American Paper Inst. v. EPA, No. 89-1428 (D.C. Cir. filed 7-10-89); Alabama Power Co. v. EPA, No. 89-1429 (D. C. Cir. filed 7-11-89); American Paper Inst. v. EPA, No. 89-2030 (D.D.C. filed 7-18-89); American Paper Inst. v. Reilly, No. 90-1364 (D.C. Cir. filed 1990). EPA settled these cases by agreeing to propose revised BACT rules by early 1992. *See* 56 Fed. Reg. 34202 (July 26, 1991) (notice of proposed settlement agreement).

¹⁶56 Fed. Reg. 27630, 27638-9 (June 14, 1991). EPA reasoned that adopting such a presumption would appropriately reflect a congressional policy judgment in section 407(b) of the Act favoring use of low-NO_x burner technology for such units under the acid rain program in Title IV. *Id.* EPA acknowledged that available selective catalytic and noncatalytic reduction technologies are more effective in reducing NO_x emissions, but dismissed them due to their greater costs. 56 Fed. Reg. 27638 (June 14, 1991). The proposal did not address why a legislative judgment under title IV regarding appropriate technology to *reduce* current levels of emissions from existing plants should apply to a program intended to apply the best technology in order to limit *increases* in emissions from modified sources. The proposal also did not address section 413 of the Act, which provides that compliance with Title IV does not relieve compliance with other provisions of the Act.

¹⁷57 Fed. Reg. 32314, 32331-32 (1992). Indeed, recent BACT determinations for coal-fired utility and cogeneration projects reflect increasing usage of selective catalytic reduction and other advanced NO_x control technologies. *Compare* Old Dominion Elec. Cooperative, PSD Appeal No. 91-39, at 26-29 (Order Denying Review, 1-29-92) (upholding Virginia decision not to require SCR as BACT) *with* Hadson Power 14 - Buena Vista (PSD Appeal No. 92-3, at 33-40 (Remand Order, 10-5-92) (Virginia determined that SCR is BACT for coal-fire plant).

[Section 12:115]

¹Clean Air Act § 165(c), 42 U.S.C.A. § 7475(c); 40 C.F.R. § 51.166(q)(2)(i). The purpose of the one-year provision is to prevent PSD requirements from causing even a temporary delay in planned industrial development. H.R. Rep. No. 95-294, 95th Cong., 1st Sess. 171-72 (1977). The provision protects only PSD applicants, not third parties seeking to force EPA to release reserved increment to them. *Hancock County v. EPA*, 22 Env 1714, 1719 (6th Cir. 1984). In practice, EPA’s average processing time for PSD permit applications is approximately nine months; many permits are not issued within the required one-year period. National Commission on Air Quality, *To Breathe Clean Air* 3.5-34 (1981). However, failure by EPA to observe the one-year limitation does not deprive the Agency of its authority to issue a permit at a later date. *See* *Hancock County*, 22 Env’t Rep. Cas. (BNA) at 1719. Procedures for processing permit applications under 40 C.F.R. § 52.21 are set forth in 40 C.F.R. part 124. *See* 40 C.F.R. § 52.21(q).

submission of written comments. The reviewing authority makes a final determination upon consideration of all comments.² Issuance of a PSD permit does not relieve the obligation of the new source owner or operator to comply with applicable SIP provisions or other requirements of federal, state, or local law.³

Once a permit has been issued under 40 C.F.R. § 52.21, construction must “commence” within eighteen months or the approval becomes invalid.⁴ (Section 51.166 places no equivalent time limits on permits issued under that section.) An owner or operator is deemed to have “commenced” construction if it accomplishes two tasks. First, it must either actually begin a continuous program of on-site construction, or enter into binding contracts for such a program which cannot be cancelled without a substantial loss to the owner or operator.⁵ Second, the owner or operator must have obtained all necessary preconstruction approvals or permits required under air pollution laws by any governmental entity.⁶ It seems clear that Congress meant to include projects where an owner has made a major, legally responsible commitment to a particular site.⁷

Permits issued under section 52.21, including those issued directly by EPA Regional Administrators and those issued through delegation by states, are considered to be federal permits and may be appealed to the Environmental Appeals Board within thirty days under the procedures established in 40 C.F.R. section 124.19. Exhaustion of this administrative appeals procedure is a prerequisite to judicial review, which lies in the court of appeals.⁸

Permits issued by a state under state rules that have been approved by EPA

²40 C.F.R. § 51.166(q)(2). Under section 51.166(q), the states have a great degree of latitude in fashioning the details of their procedures for public participation. EPA’s Consolidated Permit Regulations, 40 C.F.R. part 124, which are somewhat more detailed and restrictive than section 51.166(q), generally do not apply to EPA’s review of state regulations, nor to the permitting process under an approved program. *See* 40 C.F.R. § 124.1(e). The consolidated regulations apply only to permitting under 40 C.F.R. § 52.21. *See* 40 C.F.R. § 52.21(q).

³40 C.F.R. § 51.166(r)(1). This “source obligation” requirement applies upon issuance of a nonattainment NSR permit as well. 40 C.F.R. § 51.165(a)(5)(i). Thus, for example, recipients of PSD and NSR permits must still pass muster under the Endangered Species Act.

⁴40 C.F.R. § 51.21(r)(2). Approval is also invalidated if construction is suspended for more than 18 months, or is not completed within a reasonable time. EPA may extend a 40 C.F.R. § 52.21 permit upon a good cause showing. *Id.*; *see* Letter from Sheldon M. Novick, Regional Counsel, to William F. Moses, Apr. 27, 1982 (discussion of criteria and rationales for permit extensions). However, the Agency may require additional air quality analyses or a reopening of the BACT determination where a permit is extended. *See* EPA, Revised Draft Policy on Permit Modifications and Extensions, July 5, 1985, at 27-79. For phased projects, construction on each stage must commence within 18 months of the scheduled date, and no extensions are possible. 40 C.F.R. § 52.21(r)(2).

⁵Clean Air Act § 169(2)(A)(i), (ii), 42 U.S.C.A. § 7479(2)(A)(i), (ii); 40 C.F.R. § 51.166(b)(9)(i), (ii). A reviewing court has upheld an EPA determination that expenditures of \$22.3 million, representing 2.3 percent of the \$790 million total cost of new electrical generating facilities, do not represent a “substantial loss” under these provisions. *Montana Power Co. v. EPA*, 608 F.2d 334, 349, 9 Env’tl. L. Rep. (Env’tl. L. Inst.) 20667, 20673-74 (9th Cir. 1979).

⁶Clean Air Act § 169(2)(A), 42 U.S.C.A. § 7479(2)(A); 40 C.F.R. § 51.166(b)(9). While the statute is far from clear, it appears to treat the beginning of a continuous program of on-site construction as the activity for which the owner or operator must have obtained “all permits.” *See* Clean Air Act § 169(2)(B), 42 U.S.C.A. § 7479(2)(B). Thus, an owner or operator need not have obtained “all permits” necessary for the completion of construction and subsequent operation. The transition provisions in section 168 of the Act and 40 C.F.R. §§ 52.21(i)(4)(i)–(v) provide “grandfathering” relief from current PSD requirements for sources which commenced construction prior to August 7, 1977, or were permitted under EPA’s pre-1977 PSD regulations. These provisions have become outdated.

⁷*See* *Montana Power v. EPA*, 608 F.2d 334, 355-56, 9 Env’tl. L. Rep. (Env’tl. L. Inst.) 20667, 20677-78 (9th Cir. 1979).

⁸40 C.F.R. § 124.19(e), (f). Prior to 1992, these appeals were heard by the Administrator. The Board was created to take over these and other adjudicative tasks in response to an increasing work load. *See* 57 Fed. Reg. 5320 (1992). Although the matter is not addressed in section 52.21, it is clear

under section 51.166 are subject to whatever administrative appeal process a state may have established under its SIP or otherwise.⁹ Judicial review of individual section 51.166 permits would lie in the state courts, as such permit decisions involve no final action by EPA reviewable in the courts of appeals under section 307(b)(1) of the Act.¹⁰

Petitions for administrative review of PSD permits under 40 C.F.R. § 124.19 are analogous to petitions for certiorari in the Supreme Court in that granting review merely allows the petitioner to submit briefs on the merits.¹¹ Likewise, PSD petitions are rarely granted. The petitioners must demonstrate that the permit determination is clearly erroneous in fact or law, or involves an exercise of discretion or an important policy consideration which the Administrator, in his discretion, should review.¹²

Judicial review of the Administrator's decision occurs under the "arbitrary and capricious" standard of review, but employs the highly deferential "rational basis" test.¹³ Given the narrow scope of administrative and judicial review, it is not surprising that only a small fraction of PSD permits have been appealed to the Administrator, and a mere handful of permits carried on to the federal courts of appeals.¹⁴

that provision for appeals under section 124.19 and review in the court of appeals extend to section 52.21 permits issued by states (or local permitting authorities) pursuant to authority delegated by EPA under section 52.21(u). 45 Fed. Reg. 33413 (1980); Memorandum from Director, Office of Air Quality Planning and Standards, Apr. 5, 1982; *see also* *Hancock County v. EPA*, 22 Env 1714 (6th Cir. 1984); *Toyota Mfg. U.S.A., Inc.*, PSD Appeal No. 86-4, order of the Administrator, Oct. 2, 1986. The state essentially functions as EPA's agent when acting under delegated authority pursuant to 40 C.F.R. § 52.21(u), and this should not alter the post-issuance treatment of section 52.21 permits. In addition, requiring delegated section 52.21 permits to be appealed to the Administrator rather than through disparate state appellate procedures serves the primary purpose of the federal appeals mechanism "to ensure consistency in a national program and to provide central policy guidance." 40 Fed. Reg. 33412 (1980).

In other instances, EPA makes only a "partial delegation" under 40 C.F.R. § 52.21(u), granting a state authority to conduct the technical and administrative portions of PSD review, but retaining authority to issue the actual permits. It is clear that these permits also are subject to the section 124.19 appeals procedures and review in the court of appeals. *See Valero Gathering Co.*, PSD Appeal No. 83-1, Order of the Administrator, Dec. 31, 1983.

⁹The administrative appeal provisions in 40 C.F.R. § 124.19 do not apply to permits issued under an "approved" section 51.166 state program. Nor must such a program conform to these provisions in order to qualify for EPA approval. *See* 40 C.F.R. §§ 124.1(e), 124.41.

¹⁰In contrast, EPA approval of a state's PSD program as meeting the requirements of section 51.166 is final agency action reviewable in the appropriate court of appeals under section 307(b)(1) of the Clean Air Act. Also, EPA presumably could challenge in federal district court a state permit, issued under an approved PSD program, which did not comport with the Act's requirements. *See* Clean Air Act §§ 113(a)(1), (a)(5), 167, 42 U.S.C.A. §§ 7413(a)(1), (a)(5), 7477. It would appear, moreover, that the supremacy clause dictates that EPA could do this even if it had not challenged the permit in any administrative appeal process, nor in state court. This is because a challenge is authorized under section 167 simply on the basis of whether the permit meets the requirements of Part C, under section 113(a)(1) on the basis of whether the permit meets the requirements of the SIP, and under section 113(a)(5) (as revised by the 1990 Amendments) on the basis of whether the permit meets the PSD requirements of the Act. In addition, the federal government probably cannot be forced to waive its sovereign immunity in order to seek vindication of its rights in state court. District courts might also have jurisdiction under section 304(a)(3), 42 U.S.C.A. § 7604(a)(3), to hear citizen suits alleging that a state-issued permit fails to meet PSD requirements and thus violates the SIP. This theory apparently is untested.

¹¹40 C.F.R. § 124.19(c).

¹²40 C.F.R. § 124.19(a)(1); *see also* 45 Fed. Reg. 33412 (1980) (power of PSD review "should be only sparingly exercised . . . most permit conditions should be finally determined at the Regional level").

¹³*E.g.*, *Hancock County v. EPA*, 22 Env't Rep. Cas. (BNA) at 1717 (*citing* *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 416 (1971) and *Udall v. Tallman*, 280 U.S. 1, 16 (1965)).

¹⁴Indeed, there have been only four direct challenges to permits issued under section 52.21:

EPA appears to be focusing increased attention on the mechanisms available under the statute for effective oversight of PSD implementation by state agencies. Recent policy directives injecting new rigor into aspects of the BACT determination process have been accompanied by instructions that EPA Regional Offices should consider initiating appeals to the Administrator, under 40 C.F.R. Part 124, of permits issued by delegate agencies that do not adhere to the substantive policy guidance. The mere threat of such an appeal gives the Agency considerable leverage over state decisionmaking because a suspect permit is automatically stayed during the pendency of a Part 124 appeal.¹⁵ For permits issued directly by states under approved PSD or nonattainment NSR rules, the Regions are instructed to use administrative and judicial enforcement authority under sections 113 and 167 of the Act.¹⁶ EPA has considerably less enforcement leverage over states with approved new source programs.¹⁷ Probably as a result, EPA has sought to use the process of

Hancock County v. EPA, 22 Env 1714 (6th Cir. 1984); *Northern Plains Resource Council v. EPA*, 645 F.2d 1349, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20635 (9th Cir. 1981); *Citizens Against the Refinery's Effects, Inc. v. EPA*, 643 F.2d 178, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20174 (4th Cir. 1981); *Citizens for Clean Air v. EPA*, 959 F.2d 839, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20669 (9th Cir. 1992). In addition, a court has indicated that EPA has authority to reconsider (due to inadequacies in the BACT determination) a PSD permit issued by a delegate state under 40 C.F.R. § 52.21(u) outside of the section 124.19 appeals procedures. See *Greater Detroit Resource Recovery Auth. v. Adamkus*, 916 F.2d 317 (6th Cir. 1990).

¹⁵Permits appealed to the Administrator under 40 C.F.R. § 124.19 are not effective until EPA review is exhausted. See 40 C.F.R. §§ 124.15(b)(2), 124.19(f)(1).

¹⁶See Memorandum, Implementation of North County Resource Recovery PSD Remand, from Gerald A. Emison, Director, Office of Air Quality Planning and Standards (Sept. 29, 1987), at 7-8; Memorandum, Operational Guidance on Control Technology for New and Modified Municipal Waste Combustors, from Gerald A. Emison, Director, OAQPS (June 26, 1987), at 5-6; Memorandum, Procedures for EPA to Address Deficient New Source Permits Under the Clean Air Act, from Michael S. Alushin, Associate Enforcement Counsel for Air, Office of Enforcement and Compliance Monitoring, and John S. Seitz, Director, Stationary Source Compliance Division, OAQPS (July 15, 1988).

In an enforcement case involving a facially valid state-issued PSD permit, a court held that absent a violation of "objective standards," EPA lacked authority to take enforcement authority against a source alone. *United States v. Solar Turbines, Inc.*, 732 F. Supp. 535, 539-40 (M.D. Pa. 1990). See § 12:112. The court reasoned that EPA had authority to proceed against the state under section 167, or in an action arising under section 113(a)(1), or, in a nonattainment area, under section 113(a)(5). *Id.* at 537, 539-40 (citing *United States v. Ohio Dep't of Highway Safety*, 635 F.2d 1195, 1203 (6th Cir. 1980)). EPA has asserted, with respect to *Solar Turbines*, that if a permit does not conform to the Act's requirements, the Agency will decide "whether to sue the state and/or the source." 55 Fed. Reg. 23547, 23548 (1990) (clarification notice regarding approval of Kentucky PSD program). The 1990 Clean Air Act Amendments have superseded *Solar Turbines* by expanding the reach of sections 113(a)(5) and 113(b)(3) to PSD areas. Read together, these sections clearly authorize suit directly against the source owner whenever the Administrator finds that the state is not acting in compliance with any new source provision of the Act. EPA, however, must make the finding and notify the source prior to construction in order to proceed under section 113(a)(5), according to Judge Posner of the Seventh Circuit. See *United States v. AM Gen. Corp.*, 34 F.2d 472, 474, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21497, 21498 (7th Cir. 1994).

¹⁷Administrative orders under sections 113 and 167 are not self-executing. Rather, the Agency must obtain an injunction in federal court before it can prevent construction under a state-issued permit. In addition, the permit holder may seek preenforcement review of administrative action under sections 113 or 167. See *Allsteel, Inc. v. EPA*, 25 F.3d 312, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20974 (6th Cir. 1994). A prior case reached a different conclusion, holding that under section 167, Congress intended to preclude preenforcement review of administrative orders under that section. *Solar Turbines, Inc. v. Seif*, 879 F.2d 1073, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 21091 (3d Cir. 1989). See also *Greater Detroit Resource Recovery Auth. v. Adamkus*, 916 F.2d 317 (6th Cir. 1990). In addition, the weight of precedent in non-NSR cases under section 113 suggests that the permittee's claims may only be raised in defense to judicial enforcement action by EPA. See *Union Elec. Co. v. EPA*, 593 F.2d 299, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20154 (8th Cir. 1979), cert. denied, 444 U.S. 839 (1979); *Lloyd A. Fry Roofing Co. v. EPA*, 554 F.2d 885 (8th Cir. 1977); *West Penn Power Co. v. Train*, 522 F.2d 302, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20557 (3d Cir. 1975), cert. denied, 426 U.S. 947 (1976); *Getty Oil Co. v.*

approving PSD programs for individual states as a mechanism to assert its ongoing authority to oversee the state programs,¹⁸ and to clarify the intentions of both EPA and the state regarding specific interpretive issues.¹⁹

EPA's issued regulations for state operating permit programs under Title V of the Act may provide a significant new mechanism for EPA oversight of state implementation of NSR programs. The regulations provide that if a state follows all of the Title V-mandated procedures in issuing an NSR permit, it may issue a Title V operating permit using streamlined "administrative permit amendment" procedures.²⁰ The Agency's intent is to allow consolidation of NSR and Title V permitting.²¹ The principal enhancement that NSR programs must undertake to meet Title V requirements is the opportunity for EPA review and veto of the state-issued permit as provided in section 505(b). EPA has indicated that in exercising its veto authority in the NSR context, it will apply roughly the same standard that it does in deciding whether to take enforcement action under sections 113 and 167.²²

§ 12:116 Current federal requirements—Nonattainment and PSD permitting—Permit modification or rescission

At this time EPA has no formal rules or policies governing modification of NSR permits, and deals with permit modification issues on an *ad hoc* basis.¹ This is a shortcoming, because post-application changes in construction or operating plans

Ruckelshaus, 467 F.2d 349, 2 Env'tl. L. Rep. (Env'tl. L. Inst.) 20683 (3d Cir. 1972), cert. denied, 409 U.S. 1125 (1973); *Dow Chem. Co. v. EPA*, 635 F. Supp. 126, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20845 (M.D. La.), *aff'd* on other grounds, No. 86-3376 (5th Cir. 1986); *Asbestos Constr. Servs., Inc. v. EPA*, 849 F.2d 765 (2d Cir. 1988); *Pacificorp v. Thomas*, 883 F.2d 661 (9th Cir. 1988). *But see* *Conoco, Inc. v. Garderbring*, 503 F. Supp. 49, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20497 (N.D. Ill. 1980).

¹⁸*See* 55 Fed. Reg. 23547 (1990) (clarification notice regarding approval of Kentucky PSD program asserting EPA authority to press interpretations of statutory and regulatory requirements in enforcement actions, and clarifying that such interpretations are not binding regulations); 57 Fed. Reg. 28093, 28095 (1992) (same regarding final approval of Texas PSD program).

¹⁹*See, e.g.*, 57 Fed. Reg. 28093, 28096 (1992) (approval of Texas PSD SIP). In Connecticut and Maine, EPA's rulemaking notices approving or revising state PSD programs have incorporated state commitments to follow elements of a top-down BACT process as part of the approved program. 58 Fed. Reg. 10957 (Feb. 23, 1993) (Conn.); 58 Fed. Reg. 15422 (Mar. 23, 1993) (Me.).

²⁰57 Fed. Reg. 32307 (1992) (to be codified at 40 C.F.R. § 70.7(d)(v)).

²¹*See* 57 Fed. Reg. 32289 (1992).

²²In the preamble to the final Title V rules, EPA discussed the prospective use of its veto authority in the context of a state BACT determination. The Agency stated that it would only review whether the state had conducted a BACT analysis, and would not object to (*i.e.*, veto) that analysis. *See* 57 Fed. Reg. 32289 (1992). In the same breath, however, EPA stated that its failure to veto would not limit its enforcement remedies to address a faulty BACT determination. *See id.* Taken literally, these statements are irreconcilable. EPA has stated repeatedly that it will not seek to substitute its judgment for a substantive state decision that constitutes a lawful exercise of discretion. However, EPA has also emphasized that a BACT analysis must conform to the requirements of the Act to be valid, and that EPA can seek a judicial determination of whether a permit was issued in conformity with applicable procedures and was not the product of arbitrary or capricious decisionmaking. *See, e.g.*, 57 Fed. Reg. 28093, 28095 (1992) (final approval of Texas PSD SIP). EPA appeared to place a similar gloss on the Title V preamble discussion in its response to comments on the Title V rule. *See* Response to Comments on the 40 CFR part 70 Rulemaking, at 7-7 (EPA Docket No. A-90-33, Doc. No. V-C-1) (EPA veto may be exercised if state's BACT analysis is not conducted "as required by the applicable implementation plan").

In 1995, EPA took the position that an applicant for a Title V permit, in preparing to certify as to its compliance with "applicable requirements," need not reexamine past applicability determinations. *See* Memorandum, White Paper for Streamlined Development of Part 70 Permit Applications, from Lydia N. Wegman, Deputy Director, OAQPS, to Regional Directors (July 10, 1995).

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¹An exception is made in 40 C.F.R. § 52.21(w), a vestigial provision allowing rescission of permits

are frequent, and raise questions regarding the impact of such changes on air quality. Construed strictly, Part C could be viewed as requiring a wholly new permit if the change would significantly increase emissions or ambient impacts. To remedy this uncertainty EPA has for some time been considering issuing policy guidance on PSD permit modifications.² While still in the draft stage, the EPA policy guidance reveals the Agency's thinking and suggests the parameters that will likely be reflected in a final document. The Agency's goal is to provide flexibility in the permit modification process, such that the extent of additional PSD review reflects the degree of altered environmental impact which will result from the change in plans.

Under the draft policy, operational changes that did not result in a significant net increase in the emissions that were projected under the original PSD permit application would require a "revision" in the original permit. Additional PSD review would be necessary, however, only to the extent that the original analysis would have been insufficient if it had reflected the later changes to the original project.³ Where the later change would result in a significant net increase in emissions over those projected in the original application, the change might still require only a permit "revision." Such a change would require complete PSD review. However, the additional review would be limited to only the change, and not the entire new source or modification.⁴ A central advantage to permit "revision" is that the revised application would retain any increment rights gained through the original filing of the complete PSD application.⁵ However, in processing a revision, the permitting authority would have to follow the same public participation procedures in section 51.166(q) as are required for original permit applications.⁶

Regardless of whether a change from the original construction or operations plans would result in a significant net increase in emissions, the draft policy would require a completely new PSD permit application if the change were "fundamental." A change would fall within this category if it either fundamentally affected the nature of the source or produced a large increase in size.⁷ Fundamental changes, requiring new permits, would not retain any increment allotted by virtue of the original PSD application. Thus, additional actual or planned growth in the area in the intervening time between when the original PSD application was filed and the fundamental change in plans arose might preclude issuance of a new permit.⁸

Under the draft policy, applications for changes that would affect sources that have already undergone PSD review and been placed in operation typically would undergo a less rigorous process of review. This would acknowledge the obviously

issued under the 1978 PSD regulations to sources which are not subject to PSD under the current regulations. This provision was intended to grant relief mainly to sources whose potential to emit would exceed threshold amounts only if emissions reductions brought about by air pollution control equipment were ignored. After *Alabama Power*, EPA considers emissions controls in determining a source's potential to emit.

²See EPA, Revised Draft Policy on Permit Modifications and Extensions, July 5, 1985.

³EPA, Revised Draft Policy on Permit Modifications and Extensions, at 12-15, July 5, 1985.

⁴EPA, Revised Draft Policy on Permit Modifications and Extensions, at 14, July 5, 1985.

⁵EPA, Revised Draft Policy on Permit Modifications and Extensions, at 15, July 5, 1985. In addition, a revised permit would be exempted from any new PSD requirements added in the intervening time if the source had commenced construction prior to adoption of the new requirement. *Id.* at 14.

⁶EPA, Revised Draft Policy on Permit Modifications and Extensions, at 14, July 5, 1985.

⁷A change in the nature of a source would generally be found if it would fall within a different 2-digit SIC code. A 50 percent increase in fixed capital costs would also be deemed a fundamental change. EPA, Revised Draft Policy on Permit Modifications and Extensions, at 16-17, July 5, 1985. Although a fundamental change would require a new permit, data from the original application could often be used, thereby expediting review of the new permit application. EPA, Revised Draft Policy on Permit Modifications and Extensions, at 17, July 5, 1985.

⁸EPA, Revised Draft Policy on Permit Modifications and Extensions, at 18, July 5, 1985.

extensive commitment a firm has made to an operational source and provide an enhanced degree of repose.⁹ However, if the reviewing authority found such a prospective change to be an attempt at circumvention of the policy, it would be treated the same as changes at sources which have not yet begun operation.¹⁰

§ 12:117 Current federal requirements—Visibility NSR requirements

As noted above, EPA has two sets of regulations relating to the review of new sources for the purpose of protecting visibility in those federal class I areas where visibility is an important value. One set, which appears at 40 C.F.R. sections 51.300 to 51.307, lays out what each SIP must contain for the protection of visibility in such special areas from new sources.¹ The other set, 40 C.F.R. sections 52.21(o)(1) and (p), 52.27, and 52.28, injects the provisions for which the Part 51 regulations call into each SIP for which the state has not adopted, and EPA approved, SIP revisions meeting the §§ 51.300 to 51.307 requirements.²

§ 12:118 Current federal requirements—Visibility NSR requirements—40 C.F.R. Part 51 regulations

The Part 51 regulations in relevant part require the SIP for each of thirty-six states—that is, those states that contain or closely neighbor one of the special class I areas—to contain a long-term strategy for preventing future visibility impairment that is attributable to a single source or group of sources.¹ That long-term strategy, according to the regulations, must include two NSR components.² First, the PSD permitting program in a SIP, whether state or federal, must extend certain procedural advantages toward FLMs. Specifically, it must provide for early written notice to the appropriate FLM of applications for “major” projects that might affect visibility in the FLM’s land adversely,³ and for a written response by the state to any timely demonstration by the FLM of an unacceptable impact on visibility that the state rejects.⁴ Second, the SIP must have a permit program applicable to any “major” project that would locate in a designated nonattainment area but nevertheless might affect visibility in one of the special class I areas.⁵ This program must in turn assure that emissions from each such project will be consistent with making reasonable progress toward the national visibility goal and that FLMs have the same procedural advantages they would have under regular PSD permitting, includ-

⁹See EPA, Revised Draft Policy on Permit Modifications and Extensions, at 8-9, July 5, 1985.

¹⁰EPA, Revised Draft Policy on Permit Modifications and Extensions, at 10, July 5, 1985. An example of attempted circumvention is a proposed *de minimis* increase in emissions which should have been included as part of the original permit application.

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¹As noted previously, EPA promulgated these regulations at 45 Fed. Reg. 80084 (1980).

²Promulgation of these regulations appeared at 50 Fed. Reg. 28544 (1985).

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¹See 40 C.F.R. §§ 51.302(c)(2)(i), 51.306(a)(1); 45 Fed. Reg. 80085 (1980) (indicating that the regulations are aimed at plume blight, not regional haze).

²See 40 C.F.R. § 51.306(d).

³See 40 C.F.R. § 51.307(a)(1) to (2). If the state receives notice of a permit application in advance of its filing, it must notify all potentially affected FLMs of the application. 40 C.F.R. § 51.307(a)(2). In all cases, it must give affected FLMs notice of any permit application within thirty days of its filing and sixty days before any public hearing on state action on the application. 40 C.F.R. § 51.307(a)(1). The visibility regulations use the same definitions of “major stationary source” and “major modification” as do the Part 51 PSD regulations. 40 C.F.R. § 51.301(p).

⁴40 C.F.R. § 51.307(a)(3).

⁵40 C.F.R. § 51.307(b)(2).

ing the advantages of early notification and state explanation described above.⁶

§ 12:119 Current federal requirements—Visibility NSR requirements—40 C.F.R. Part 52 regulations

EPA's Part 52 visibility regulations fall into two groups, mirroring these two NSR components for which the Part 51 regulations call. The group that deals with the procedural advantages in turn divides into two subcategories. On the one hand, EPA simply injected those advantages into its PSD permitting program at 40 C.F.R. section 52.21.¹ That program, however, applies only in some states which lack EPA-approved SIPS. For states with otherwise EPA-approved SIPS, the Agency adopted a novel means of assuring that FLMs enjoy the advantages even if they were not yet adopted and approved into the state program. EPA created a mechanism by which any person, including a FLM, may cause EPA to take over the permitting for a particular project if the state fails by whatever means to provide the FLM with the advantages.² EPA separately created a federal permit program for the projects locating in nonattainment areas and inserted it into the SIP of each of the relevant states.³

VI. TECHNOLOGY FORCING FOR MOTOR VEHICLES*

§ 12:120 Introduction

In the Clean Air Act, Congress tried to force industries to use new and different technologies in an effort to reduce air pollution.¹ The most visible example of this effort was the requirement for automobile manufacturers to drastically reduce tailpipe and evaporative emissions from precontrolled levels, commonly known as “technology forcing.” This dose of “drastic medicine”² clearly affected the most prized possession of many Americans—their automobile.

This section will examine the history of the mandatory development of new technology to reduce air pollution under Title II of the Clean Air Act; in particular, this section will focus on the types of technological changes made to vehicles by their manufacturers. The question of whether new technology was actually developed and whether pollution was reduced will also be examined to determine

⁶40 C.F.R. § 51.307(c). The regulations state a third NSR component but it is now largely moot. They require preconstruction review for any “major” project that would affect an “integral vista” of a special class I area if the FLM has identified the vista on or before December 31, 1985. 40 C.F.R. §§ 51.307(b)(1), 51.304(a). An “integral vista” is “a view perceived from within the mandatory Class I Federal area of a specific landmark or panorama located outside the boundary of the [area].” 40 C.F.R. § 51.301(n). With the exception of Roosevelt Campobello International Park, 46 Fed. Reg. 22707 (1981), no FLM identified any “integral vista” on or before December 31, 1985.

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¹50 Fed. Reg. 28550 (1985) (40 C.F.R. § 52.21(p)).

²50 Fed. Reg. 28551 (1985) (40 C.F.R. § 52.27). The alternative, in EPA's view, was to take over the entire PSD program by disapproving the state program and reinserting 40 C.F.R. § 52.21. That seemed to EPA to be a medicine far more detrimental than the malady it would cure. *See* 50 Fed. Reg. 28548 (1985); 49 Fed. Reg. 42670 (1984) (proposal).

³50 Fed. Reg. 28551-53 (1985) (40 C.F.R. § 52.28).

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¹*See* J. Bonine, “The Evolution of Technology Forcing in the Clean Air Act” (BNA Env'tl. Rep. Monograph No. 21, 1975).

²116 Cong. Rec. 32904 (1970) (remarks of Sen. Muskie). *See* *Union Elec. Co. v. EPA*, 427 U.S. 246, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20570 (1976); *Sierra Club v. Costle*, 657 F.2d 298, 11 Env't 20455 (D.C. Cir. 1981).

whether the technology forcing effort was successful. The indicia for determining success will be the emission levels of prototype vehicles in the Environmental Protection Agency's (EPA) certification program,³ the emissions of in-use vehicles, and the effect of this program on ambient air quality levels.⁴

§ 12:121 History of technology forcing under title II of the 1970 and 1977 Clean Air Act

In this section, the history of the mobile source program *under the 1970 Act and 1977 Amendments* will be examined. Section 202 of the 1970 amendments to the Clean Air Act mandated 90 percent reductions in hydrocarbon (HC) and carbon monoxide (CO) by model year 1975.¹ In addition, a 90-percent reduction in the emissions of oxides of nitrogen (NO_x) was required by model year 1976.² These were the technology forcing requirements: The controls or design changes needed to meet these standards were not then in use anywhere in the industry, and there was testimony that they might not be achievable at all.³ Nevertheless, the statutory command was clear and implementation imminent: Section 202 gave EPA the authority to set interim standards for each model year between the date of enactment and model years 1975 and 1976.⁴ In the event that the statutory standards could not be achieved, however, a one day year delay was also provided by section 202 of the Act.⁵

During the initial stages of implementing Title II of the Clean Air Act, vehicle manufacturers made modifications to the basic operating parameters of their engines. For example, in model years 1972 and 1973, most manufacturers met EPA's emission standards by altering the ignition timing, improving carburation, and restricting the air-fuel ratio during cold starts (limiting the allowable choke after the engine had been started).⁶ While these changes had a slightly adverse effect on driveability and fuel economy, the most significant change in vehicle performance came as a result of the use of devices that recirculated a portion of the vehicle's exhaust gas back into the combustion chamber of the engine, commonly known as exhaust gas recirculation valves (EGRs). Most automobile manufacturers were forced to use EGRs to meet EPA's interim standards for the 1973 and 1974 model years, which required control of NO_x emissions for the first time. EGRs, however, were rushed into use with much less testing than is normal for the automobile industry, and numerous complaints from vehicle owners about poor performance

³See Clean Air Act § 206, 42 U.S.C.A. § 7525 (vehicle engine compliance testing and certification).

⁴The costs associated with technology forcing are beyond the scope of this section. For a discussion of the economic consequences of technology forcing under Title II, see R. Crandall, T. Keeler & L. Lave, *Regulating the Automobile* (1986).

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¹Clean Air Act Amendments of 1970, Pub. L. No. 91-604, § 6(a), 84 Stat. 1676, 1690 (amending Clean Air Act § 202(b)(1)(A), 42 U.S.C.A. § 1857f-1(b)(1)(A)) (recodified at 42 U.S.C.A. § 7521(b)(1)(A)).

²Clean Air Act Amendments of 1970, Pub. L. No. 91-604, § 6(a), 84 Stat. 1690 (amending Clean Air Act § 202(b)(1)(B), 42 U.S.C.A. § 1857f-1(b)(1)(B)) (recodified at 42 U.S.C.A. § 7521(b)(1)(B)).

³See, e.g., H.R. Rep. No. 1146, 91st Cong., 2d Sess. 19-20 (1970) (additional views of Rep. van Deerlin, Rep. Ottinger, and Rep. Tiernan), *reprinted in* United States Code Congressional and Administrative News pp 5356, 5370-71.

⁴Clean Air Act Amendments of 1970, Pub. L. No. 91-604, § 6(a), 84 Stat. 1676, 1690 (amending Clean Air Act § 202(b)(5), 42 U.S.C.A. § 1857f-1(b)(5)(A)).

⁵Clean Air Act Amendments of 1970, Pub. L. No. 91-604, § 6(a), 84 Stat. 1690 (amending Clean Air Act § 202(b)(5)(D), 42 U.S.C.A. § 1857f-1(b)(5)(D)) (recodified at 42 U.S.C.A. § 7521(b)(5)(D)).

⁶Other engine modifications included heating the fuel during cold operating conditions to assure better vaporization and the addition of air pumps to create better oxidation in exhaust systems.

and fuel economy ensued.⁷ Indeed, among many knowledgeable engineers in the automobile industry, model year 1974 has a reputation as having some of the worst performing vehicles in modern automotive history.⁸

Prior to 1975, all domestic and import automobile manufacturers, except one,⁹ concluded that achieving a 90-percent reduction in HC and CO by model year 1975 was not possible. Using the suspension provision in section 202, both the domestic and import manufacturers formally applied to EPA for a waiver of the 1975 emission standards. Applications were submitted by various manufacturers during March and April of 1972¹⁰ and public hearings were held by EPA from April 10 to 27. On May 12, 1972, EPA Administrator William Ruckelshaus formally denied the petitions.¹¹ This decision was challenged in court by the automobile industry, and on February 10, 1973, the U.S. Court of Appeals for the D.C. Circuit remanded the Administrator's decision in *International Harvester v. Ruckelshaus*.¹² Judge Leventhal's notable opinion contained several reasons for remanding the Administrator's decision to deny the waiver. First, the court pointed out that the auto manufacturers had not produced a single vehicle that had actually been driven 50,000 miles and achieved conformity with the 1975 emission standards.¹³ The court emphasized that with an issue as significant as the possible shutdown of the automobile industry, "[o]ne must distinguish between prediction and prophecy."¹⁴ Second, the court examined a series of technical issues and "unexplained assumptions" used by the Administrator in reaching his decision.¹⁵ Third, the court was concerned that basic market demand may not have been met if the waiver applica-

⁷This information is based on the author's personal communications with the engineering staff from the domestic and import vehicle manufacturers over the past ten years. These individuals clearly preferred to have a lead time of at least four model years before making major modifications to engines. In the case of EGR valves, only eighteen to twenty months were available for the design and refinement prior to certification testing. As a practical matter, no changes to these devices could be made once certification testing began. These logistical constraints thus acted as a freeze on vehicle design.

⁸This information is based on the author's personal communications with numerous automobile industry representatives and with former EPA mobile source staff. In fairness, it must also be noted that model year 1974 brought with it the ignition interlock system requirement. This system was a safety device that assured that the vehicle would not start unless the front safety belts were fastened. These systems were so widely disliked that Congress amended the National Highway Traffic Safety Act in 1974 to prohibit the use of those devices. See Motor Vehicle and Schoolbus Safety Amendment of 1974 Pub. L. No. 93-492, § 109, 88 Stat. 1470, 1482, *codified at* 15 U.S.C.A. § 1410(b); see H.R. Rep. No. 1191, 93d Cong., 2d Sess. 28-30 (1974), *reprinted in* United States Code Congressional and Administrative News pp 5046, 6073-75. Thus, some of the consumer dissatisfaction directed at 1974 models may have been as a result of the interlock rather than EGR and other emission control devices.

⁹Honda Motors submitted a statement at EPA's 1972 Suspension Hearings indicating that it could achieve the 1975 statutory standards.

¹⁰On March 13, 1972, Volvo was the first manufacturer to file an application for suspension. 37 Fed. Reg. 5766 (1972). This application was followed quickly by those from Ford, GM, Chrysler, and International Harvester. See *International Harvester v. Ruckelshaus*, 478 F.2d 615, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20133 (D.C. Cir. 1978).

¹¹In re Applications for Suspension of 1975 Motor Vehicle Exhaust Emission Standards, Decision of the Administrator, May 12, 1972.

¹²*International Harvester v. Ruckelshaus*, 478 F.2d 615, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20133 (D.C. Cir. 1978).

¹³*International Harvester v. Ruckelshaus*, 478 F.2d 615, 625, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20133 (D.C. Cir. 1978).

¹⁴*International Harvester v. Ruckelshaus*, 478 F.2d 615, 642, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20133 (D.C. Cir. 1978).

¹⁵*International Harvester v. Ruckelshaus*, 478 F.2d 615, 647, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20133 (D.C. Cir. 1978).

tion was denied.¹⁶ Finally, the court concluded that “the risk of an ‘erroneous’ denial of suspension outweighed the risk of an ‘erroneous’ grant of suspension.”¹⁷ After the D.C. Circuit’s remand, EPA once again held a lengthy series of hearings on the question of suspension of the automobile standards for 1975. As a result of these hearings, new EPA Administrator Russell Train granted the manufacturers’ waiver request, but imposed interim standards that in many cases required the use of the catalytic converter.¹⁸

In late 1973, when the 1974 models were being introduced, hostilities in the Middle East led to the first Arab oil embargo. The shockwaves of this event, which almost instantaneously produced long lines at service stations and substantial increases in the price of gasoline, had a significant impact on the vehicle emission program under Title II of the Clean Air Act: Congress considered making widespread changes in the nation’s energy and environmental statutes. After a considerable number of congressional hearings, and after intense negotiations between the Federal Energy Administration (FEA)¹⁹ and EPA, a compromise was reached that relaxed auto emission standards. This compromise, which was eventually incorporated into the Energy Supply and Environmental Coordination Act of 1974,²⁰ consisted of an extension of the 1975 interim HC and CO standards for model year 1976; 1974 interim NO_x standards were to be applied to 1975 and 1976 vehicles; and model year 1977 vehicles were required to meet a NO_x standard of 2.0 grams per mile, which represented a reduction from the 3.1 grams per mile 1975-1976 standard, but was well above the 0.4 grams per mile level specified in the 1970 Act. A one-year suspension of the HC and CO standards for these vehicles was also included in this legislation.²¹

The debate within the Administration over the issue of appropriate automobile emission standards was intense. The FEA argued that EPA’s interim standards for model year 1975, which it believed would require a large number of vehicles to use catalytic converters, would be harmful to the nation’s energy position because catalyst-equipped vehicles could only operate properly on unleaded gasoline. Accordingly, FEA argued that the loss in production of gasoline per barrel associated with refining crude oil into unleaded gasoline more than made up for any increase in vehicle mileage that was associated with the use of a catalytic converter. In the end, EPA Administrator Russell Train exercised his political ability, particularly with members of Congress, and prevailed over FEA. The debate, however, provided the House and Senate the opportunity to fashion the compromise with respect to auto emissions that would be incorporated into the first piece of major energy legislation of the 1970s.

Model year 1975 brought the first application of the catalytic converter control technology. Prior to the introduction of its 1975 model vehicles, General Motors (GM) announced its decision to use catalytic converters by placing advertisements in publications, such as *Newsweek*, which showed a catalytic converter with flowers

¹⁶*International Harvester v. Ruckelshaus*, 478 F.2d 615, 639, 3 Env’tl. L. Rep. (Env’tl. L. Inst.) 20133 (D.C. Cir. 1978).

¹⁷*International Harvester v. Ruckelshaus*, 478 F.2d 615, 648, 3 Env’tl. L. Rep. (Env’tl. L. Inst.) 20133 (D.C. Cir. 1978).

¹⁸The waiver decision, issued on April 11, 1973, also established emission standards for California vehicles; these standards were intended to require the use of catalysts in vehicles sold in that state.

¹⁹The FEA was the successor to the Federal Energy Office, established by President Nixon, and the predecessor to the Department of Energy.

²⁰Pub. L. No. 93-319, 88 Stat. 245 (codified as amended at 15 U.S.C.A. §§ 791-798 and in scattered sections of 42 U.S.C.A.).

²¹Pub. L. No. 93-319, § 5, 88 Stat. 246, 258 (amending Clean Air Act § 202(b), 42 U.S.C.A. § 7521(b)).

coming out one end.²² GM was the earliest advocate of catalytic converter technology and employed the devices on a very high percentage of its 1975 model production. Ford also used the catalyst on a number of its vehicle lines, while Chrysler used the catalytic converter only on the largest displacement engines in its model year 1975 vehicles.²³ Import manufacturers were somewhat slower to employ catalyst technology.²⁴ In part, this was because the smaller engines of most imports could be controlled by engine modifications, air pumps, and other devices. Honda, for example, introduced the CVCC (a form of a stratified charge engine) in 1975 to meet the statutory standard. As well, the CVCC had the economic advantage of running on leaded fuel. The catalytic converter, however, allowed GM to recalibrate its engines to improve fuel economy, driveability, and overall performance. Thus, GM saw catalyst technology as the answer to the performance problems that were then confronting the auto industry.

Throughout 1975 and into 1976, auto manufacturers warned Congress that even if an EPA waiver for the HC and CO standards for model year 1977 were obtained, compliance with the HC, CO, and NO_x standards for model year 1978 was highly unlikely, if not impossible.²⁵ This argument framed the debate that led to the Clean Air Act Amendments of 1977. During 1976, both House and Senate committees held extensive hearings on the ability of auto manufacturers to meet the statutorily-prescribed standards for model year 1978.²⁶ At a Senate hearing in early 1976, a witness from the California Air Resources Board testified that Volvo was in the process of testing a vehicle equipped with an oxidation/reduction catalytic converter.²⁷ The Volvo had as its most critical engine component an onboard computer that precisely measured the air-fuel ratio under all driving conditions. This system was known as the “Closed Loop/Three-Way-Catalyst system,”²⁸ and could be used to meet current emission standards. Domestic manufacturers argued that one test of one vehicle did not demonstrate the ability of the entire industry to utilize this technology within one to two model years, that the cost of such a system was significant, and that it could not be utilized on lower cost vehicles.²⁹ After a bitter and emotional debate in both the House and Senate, a compromise on auto emission standards was reached, only to evaporate at the last minute in the face of a filibuster

²²See, e.g., *Newsweek*, Oct. 14, 1974, at 70-71.

²³See generally EPA Certification Test Results for Model Year 1975 Vehicles (the certification test results are issued maker-by-maker, and not as a single, comprehensive document covering all vehicles; see, e.g., Application for Certification 1985 Model Year Light-Duty Vehicles—Ford Motor Company (PB85-185294/REB) (1985)). This report contains not only the result of EPA’s certification tests but also a brief description of the vehicle’s major emission control components.

²⁴EPA Certification Test.

²⁵These views were expressed publicly during hearings before the relevant House and Senate committees during 1975 and early 1976. In essence, the manufacturers argued that while the statutory HC and CO levels possibly could be met, they could not be met together with the requirement to meet the 0.4 gram per mile NO_x standard.

²⁶See, e.g., “Clean Air Act Amendments of 1977: Hearings Before the Subcommittee on Env’tl. Pollution, Senate Env’t and Pub. Works Comm.,” 94th Cong., 2d Sess. (1976) [hereinafter cited as *Hearings*].

²⁷See “Clean Air Act Amendments of 1977: Hearings Before the Subcommittee on Health and the Env’t, House Comm. on Interstate and Foreign Commerce,” 95th Cong., 1st Sess. 839 (1977) (testimony of Thomas Austin, Deputy Executive Officer, California Air Resources Board).

²⁸This system was jointly developed by Volvo and Bosch, the latter a major European electronics vendor to the automobile industry.

²⁹See “Clean Air Act Amendments of 1977: Hearings Before the Subcommittee on Env’tl. Pollution, Senate Env’t and Pub. Works Comm.,” 94th Cong., 2d Sess. 55–62, 79–98 (1976) (testimony of David Potter of GM, Herbert Misch of Ford, and Sidney Terry of Chrysler).

of the legislation during the closing days of the 94th Congress.³⁰

The failure of Congress to act in 1976 caused the auto industry to face a critical problem: Production of 1978 model vehicles would begin during the summer of 1977, but virtually none of the manufacturers were in a position to certify vehicles that could meet the statutory emission standards. The inability of auto manufacturers to meet the statutory deadlines, combined with renewed concerns over the nation's energy dependence in early 1977, led to the compromise embodied in Section 202 of the 1977 Clean Air Act.³¹

The 1977 compromise continued the 1975 interim HC and CO standards through model year 1979. The 1980 CO standards were reduced from 15.0 grams per mile to 7.0 grams per mile, and the 1981 CO standard was reduced to the 90-percent reduction level originally required for model year 1975 vehicles—3.4 grams per mile.³² Hydrocarbon emissions for model years 1980 and 1981 were set at 0.41 grams per mile.³³ With respect to NO_x emissions, Congress continued the 2.0 gram per mile interim standard through model year 1980; for model year 1981 and thereafter the standard was reduced to 1.0 gram per mile.³⁴ This level, however, is well above the 0.4 gram per mile standard required by the 1970 amendments: The 1977 amendments made the 0.4 NO_x standard merely a research goal.³⁵ Congress also enacted a provision that would allow manufacturers to obtain waivers of the CO and NO_x standards for model years 1981 and 1982. Waivers could allow CO emissions of no greater than 7.0 grams per mile, and NO_x emissions could not exceed 1.5 grams per mile.³⁶ Congress also enacted a provision that required vehicles that operated in high altitude areas to meet emission standards identical to those for vehicles that operated at lower altitudes.³⁷ During the interim period, EPA was to set standards that required the same percentage reduction in high-altitude vehicles as those sold in sea level areas.³⁸

During the late 1970s, the nation's energy problems grew more severe. On President Carter's initiative in 1977, energy legislation was adopted that directly affected the auto industry. One piece of energy legislation amended the Corporate Average Fuel Economy (CAFE) program,³⁹ which had set fleet-wide fuel economy averages for manufacturers. Pursuant to CAFE, Congress authorized the National Highway Transportation Safety Administration to set increasingly stringent fuel economy standards for model years 1981 through 1984, while Congress itself set the standards for 1978 to 1980, and 1985 and later model years. Congress also established a

³⁰Senator Jake Garn led a filibuster on the Conference Report of the 1976 amendments based on his concerns over the implications of the "Prevention of Significant Deterioration" provisions on energy development. *See* 122 Cong. Rec. 34389-98 (1976).

³¹Clean Air Act § 202, 42 U.S.C.A. § 7521.

³²*See* Clean Air Act § 202(b)(1)(A), 42 U.S.C.A. § 7521(b)(1)(A).

³³*See* Clean Air Act § 202(b)(1)(A), 42 U.S.C.A. § 7521(b)(1)(A).

³⁴Clean Air Act § 202(b)(1)(B), 42 U.S.C.A. § 7521(b)(1)(A).

³⁵Clean Air Act § 202(b)(7), 42 U.S.C.A. § 7521(b)(7).

³⁶Clean Air Act § 202(b)(1)(A), 42 U.S.C.A. § 7521(b)(1)(A).

³⁷Clean Air Act §§ 202(b)(1), 205(f)(1), 42 U.S.C.A. §§ 7521(b)(1), 7525(f)(1).

³⁸This interim policy for high-altitude vehicles incorporated a program that had been begun by EPA in 1976. Since vehicles operated at high altitude tend to run "richer" (a lower air-fuel ratio) than vehicles at sea level, because of the less dense air at high altitudes, the proportional reduction level led to higher numerical emission standards for high-altitude vehicles.

³⁹Department of Energy Organization Act, Pub. L. No. 95-91, § 305, 91 Stat. 565, 580-81 (1977); *see* S. Rep. No. 164, 95th Cong., 1st Sess. 34-35 (1977), *reprinted in* United States Code Congressional and Administrative News pp 854, 888-89.

tax on so-called “gas guzzler” models in 1978.⁴⁰ In response to this and to the energy problems of the early 1970s, many domestic manufacturers initiated a vigorous program to “downsize” their vehicles,⁴¹ which reduced both weight and overall size. It also limited the types of engines that were available in a number of product lines.⁴²

The combination of energy related legislation and the Clean Air Act standards for model years 1981, 1982, and 1983 played a major role in the decision of manufacturers to utilize the Closed Loop/Three-Way Catalyst system. Beginning with the 1980 model year, some domestic and import manufacturers began to install this system on virtually all vehicles, with the exception of those of lowest cost.⁴³

As was the case with the oxidation catalyst system, GM made the earliest and most definitive commitment to the Closed Loop/Three-Way Catalyst technology and to onboard computers to adjust the air-fuel ratio. Ford and Chrysler used this technology only on some of their higher priced vehicles.⁴⁴ Many European manufacturers utilized the Closed Loop/Three-Way Catalyst system since it was originally developed in Europe by Bosch. Japanese manufacturers by and large utilized the Three-Way catalyst system without any electronic control of the air-fuel mixture, and instead relied on improvements in the fuel metering in carburetors to ensure reduced emissions.⁴⁵ By 1983, however, virtually all manufacturers had installed electronic fuel metering systems and had some form of fuel injection on a large number of their vehicle lines.⁴⁶

The use of this technology has enabled manufacturers to meet increased standards more easily. When the high altitude emission standards took effect in 1984, for example, manufacturers were able to meet them by adding a relatively simple altitude compensation device to the electronic fuel metering system. As a result, current model vehicles have achieved levels of driveability and performance that many thought were unattainable in the 1970s because of the dual, and apparently conflicting, requirements for vehicles to meet more stringent emission control and fuel economy standards.

The achievement of current passenger car tailpipe standards has not created significant technical problems for vehicle manufacturers; this may be traced to the relative stability of the standards themselves and to technological advances in electronics. The stabilization and gradual improvement in the nation's energy supply, however, has created problems both for GM and Ford with respect to the corporate fuel economy standards. In testimony before the National Highway Transportation Safety Administration (NHTSA) and House and Senate committees during 1985,⁴⁷ GM and Ford stated that while they had the technology and production capacity to meet the 27.5 miles per gallon fleet-wide standard prescribed by CAFE, consumer demand for roomier and better performing vehicles had made the standard impossible to satisfy. Thus, on March 1, 1985, GM and Ford applied to

⁴⁰Energy Tax Act of 1978, Pub. L. No. 95-618, § 201, 92 Stat. 3174, 3180-84 (amending Internal Revenue Code § 4064, 25 U.S.C.A. § 4064).

⁴¹See National Highway Traffic Safety Administration, First Annual Report to Congress Concerning the Implementation of the Corporate Fuel Economy Program (1976).

⁴²See EPA Certification Test Results for 1976, 1977, and 1978 Model years.

⁴³See EPA Certification Test Results for Model Year 1981.

⁴⁴See EPA Certification Test Results for Model Year 1981.

⁴⁵See EPA Certification Test Results for Model Year 1981.

⁴⁶See EPA Certification Test Results for Model Year 1983.

⁴⁷See testimony of Maria Whitman (GM) and Helen Petrauskas (Ford) before Senate Commerce, Transportation and Tourism Committee, May, 1985.

have the corporate average fuel economy standard relaxed to 26.0 miles per gallon.⁴⁸ Chrysler bitterly contested the application and argued that it had made major investments in reliance on achieving the existing corporate average fuel economy and federal emission control requirements,⁴⁹ and that its product decisions were made because of demands imposed upon it by the federal government as part of its federal loan guarantee program. Chrysler stated that it would be unfair to penalize them for making those decisions. Nevertheless, on September 30, 1985, the Administrator of NHTSA announced that the GM and Ford request had been granted for model year 1986.⁵⁰ Shortly thereafter, NHTSA issued a notice of proposed rulemaking that would consider a range of alternative standards between 26.0 and 27.5 miles per gallon for model years 1987 and 1988.⁵¹ In the preamble to the proposed rulemaking, NHTSA pointed out that Ford has said that it will be able to meet the statutory standard of 27.0 miles per gallon by 1990,⁵² and that GM would also meet the standard by that time.⁵³ Chrysler, however, projected fleet averages well above the minimum standard.⁵⁴ NHTSA adopted a final standard of 27.0 miles per gallon for these model years,⁵⁵ and for model year 1990 increased the standard back to the 27.5 miles per gallon level.⁵⁶

§ 12:122 Congressional action leading to the 1990 Clean Air Act Amendments

Beginning in 1982, efforts were made to amend the Clean Air Act.¹ In the early 1980s, there was an attempt to relax some of the requirements imposed on the motor vehicle industry, but those efforts failed. Later, proposals to further tighten mobile source requirements were proposed. A legislative gridlock, however, occurred over these efforts. The gridlock extended through the 100th Congress, and no amendments to the overall bill were enacted.

In 1989 President Bush attempted to break the impasse that had been created by the introduction of a comprehensive set of amendments to the Clean Air Act.² The Bush Administration's proposal for mobile sources began serious debate over the question of further tightening of tailpipe standards for both passenger cars and light-duty trucks versus a mandate to produce and sell alternatively fueled vehicles. In announcing the Administration's proposal, both the President and EPA Administrator Reilly called the alternative fuel program "the centerpiece" of the mobile source requirements in the bill.

The Bush Administration proposal called for tailpipe emission standards for

⁴⁸The relaxation of the CAFE standard is authorized by the Cost Savings and Vehicle Information Act § 502(a)(4), 15 U.S.C.A. § 2002(a)(4).

⁴⁹See testimony of Robert Conner before Senate Commerce Committee, Transportation and Tourism May, 1985.

⁵⁰50 Fed. Reg. 40528 (1985).

⁵¹51 Fed. Reg. 2912 (1986).

⁵²51 Fed. Reg. 2916 n.4 (1986).

⁵³51 Fed. Reg. 2915 (1986).

⁵⁴51 Fed. Reg. 2916 (1986).

⁵⁵See 51 Fed. Reg. 35594 (daily ed. Oct. 6, 1986).

⁵⁶See 54 Fed. Reg. 42303 (daily ed. Oct. 16, 1989).

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¹See, e.g., H.R. 3476 (98th Congress), S.2023 (98th Congress); H.R. 99 (100th Congress), S.2814 (100th Congress).

²Announcement of the legislative proposal was made on June 12, 1989; but the final text of the bill was not available until early July. The bills were introduced in the House and Senate as H.R. 3030 and S.1490, respectively.

vehicles to be reduced from the existing levels under the 1977 Act to 0.25 grams per mile HC and 0.4 grams per mile NO_x beginning in the mid-1990s. These are the same tailpipe exhaust standards imposed by the state of California, albeit under a somewhat different time schedule. (Similar standards would be imposed on light-duty trucks.) In addition, the Administration proposal would have imposed new controls on evaporative emissions, lowered the volatility of gasoline, and imposed a new program to control CO emissions in cold weather conditions.

To achieve increased reductions from mobile sources in the late 1990s and early into the twenty-first century, which both the Administration and environmental organizations said would be necessary to offset the effect of growth in both vehicle population and use, the Administration proposed a requirement for one million alternative fuel vehicles to be produced and sold beginning in 1995.³ While the Administration professed that this requirement would not favor any fuel or power source, many observers of this issue felt the Administration favored the use of methanol.⁴

The Administration argued that the use of alternative fuels would be more cost-effective than proposals put forward by Rep. Waxman in H.R. 2323 and Sen. Baucus in S.1630 that would impose a second round of tailpipe emission standards beginning early in the 21st century. These standards would reduce the first round standards by an additional 50 percent for each pollutant.

Environmental organizations opposed over-reliance on alternative fuels, and strongly supported the second-round of tailpipe standards. In a July 12, 1989 memorandum to congressional members, the National Clean Air Coalition stated:

The second phase of the President's motor vehicle control program relies solely on "unproven 'alternative fuel' technologies (thatching, methanol, natural gas). Alternative fuel requirements will play a role. They are not a substitute for cleaner gasoline powered cars. Questions for fuel supply, handling, safety, costs, and overall environmental impact suggests that the more prudent approach would be to commit the nation to a clean car without dictating the choice of control.

Conversely, the motor vehicle industry opposed the second-round of emission controls on technological and cost-effectiveness grounds, and the mandate in the Administration's proposal to sell the 1 million alternative fuel vehicles. The vehicle industry's position on the second-round of tailpipe standards was expressed succinctly by Ford Motor Company at September 28, 1989 hearings on Title II. In that testimony Ford stated:

The proposed "second tier" emissions standards in S.1630 are technically infeasible and, even if they could be met, EPA has indicated that these standards would have little effect on improving the nation's air quality. The standards in S.1630 in combination with the proposed 100,000 mile useful life requirement represent about an 80 percent increase in stringency versus today's standards. Even though 2003 seems far in the future, there is no promising breakthrough technology on the horizon.

In our talks with Committee members and staff, there appeared to be wide recognition that these requirements are not achievable with existing or anticipated technology. But the bill's sponsors seem to believe that it is important to set standards that are beyond the ability of manufacturers. It would be far better to set realistic standards, and allow manufacturers to devote their resources to meeting those standards as efficiently as possible. Otherwise, the likelihood is that the industry will have to return to Congress

³See Section 212(d)(1) of H.R. 3030, as introduced.

⁴Questions asked by both popular and vehicle industry trade press at the June 12, 1989 announcement of the Administration were based on acknowledged support for methanol by EPA's Assistant Administrator for Air and Radiation at his Confirmation hearings and subsequent public statements.

to seek revisions in the requirements.⁵

This position was shared by all domestic and import manufacturers.⁶

With respect to alternative fuel vehicles, the industry generally supported the concept in the Administration proposal, but objected to the “sales mandate” in that proposal. Ford Motor Company’s statement to the Senate Environment and Public Works Committee summarized the position of the entire motor vehicle industry.⁷ They said:

[T]he bill requires manufacturers to “sell” a fixed, large number of alternative fuels vehicles in designated locations even though customer acceptance of the products is presently uncertain. While we can assure production capability and capacity to produce a fixed number of vehicles, it is unfair—and unprecedented—to require manufacturers to guarantee sales of any product.⁸

As the legislative process progressed through 1989 and 1990, the issues of the second round emission standards and alternative fuels dominated the debate on Title II of the House and Senate bills.

In the House, a historic agreement on tailpipe standards was reached in October 1989 between long-time opponents, Representatives Dingell and Waxman. This agreement would require a comprehensive study of the technological feasibility and air quality necessity of the second-round tailpipe standards before they would be imposed.⁹ Also, as the House version of the bill neared final floor action, Representatives Dingell and Waxman reached an interim agreement on alternative fuel vehicles that would require the sale of 150,000 of these vehicles in California beginning in model year 1994 with increases to 300,000 per year in 1997.¹⁰ Fleet vehicles in many urban areas that do not meet the NAAQS for ozone and CO would be required to meet emission levels that would have forced the use of alternative fuels.¹¹ In addition, the gasoline sold in certain nonattainment areas would be for the first time required to achieve reductions in ozone producing substances and air toxics.¹²

In the Senate, the Environment and Public Works Committee adopted the second round tailpipe standards, but deferred the alternative fuel issue to the full Senate. Once the full Senate began debate on the Environment and Public Works Committee bill, it became apparent that there was wide opposition to many of its provisions, both mobile source and stationary source. As a result, a highly publicized, albeit closed-door, negotiation process between the Senate Democratic and Republican leadership and the Bush Administration was undertaken. After several weeks of intense negotiations, the negotiators agreed to a proposal that would impose the second-round tailpipe standards beginning in 2004, if air quality levels in more than eleven of the nation’s most heavily polluted areas still exceeded the

⁵Testimony of Donald R. Buist, Director, Automotive Emissions and Fuel Economy Office, Ford Motor Company before the Senate Environment and Public Works Committee September 28, 1989.

⁶*See, e.g.*, Testimony of GM, Chrysler, Nissan, Honda, and Toyota to the September 28, 1989 Senate Environment and Public Works Committee hearing.

⁷*See, e.g.*, Testimony of GM, Chrysler, Nissan, Honda, and Toyota to the September 28, 1989 Senate Environment and Public Works Committee hearing.

⁸*See, e.g.*, Testimony of GM, Chrysler, Nissan, Honda, and Toyota to the September 28, 1989 Senate Environment and Public Works Committee hearing note (g).

⁹*See* Section 202(A) of H.R. 3030, which adds several new subsections to Section 202.

¹⁰*See* Section 212(d)(3)(A), H.R. 3030; *see also* 136 Cong. Rec. 2842-2843, May 23, 1990.

¹¹Section 212(d)(3)(A), H.R. 3030.

¹²*See* Section 205(k), H.R. 3030.

NAAQS for ozone in the late 1990s.¹³ The alternative fuel program agreed to by these negotiators would apply to fleets in the most heavily impacted ozone non-attainment areas and would have virtually mandated the use of alternative fuels in these vehicles.

Before ultimately accepting this agreement, the Senate narrowly defeated a proposal by Senators Wilson and Wirth that would have re-inserted the original second-round tailpipe standards and would have imposed a one million vehicle sales mandate for alternative fuel vehicles.¹⁴ The vote on this amendment was 46 to 52.¹⁵

The final bill incorporated most of the House provisions regarding the first phase and second phase of tailpipe emission standards, including a study prior to the imposition of the second phase standards.¹⁶ Additional controls will be required to reduce evaporative and running losses from the fuel tanks and engines and to control CO emissions under cold temperature conditions.¹⁷ The alternative fuel provisions in the final bill rely heavily on the new Low Emission Vehicle program adopted by the California Air Resources Board on September 28, 1990. Fleet vehicles in 20 to 25 of the most heavily polluted areas of the country will be required to meet tailpipe emission standards that are nearly 75 percent more stringent than the 1994 tailpipe standards for HC and 50 percent more stringent for CO and NO_x.¹⁸ A clean-vehicle program for California is also included in the bill, which utilizes the California Low Emission Vehicle program standards.¹⁹

In addition to these provisions, the new amendments retain the existing authority under Section 177 of the law for states with non-attainment areas to adopt California emission standards. If a state should adopt the California Low Emission Vehicle program, the use of hybrid electric or fully electric vehicles may be required.²⁰

Several northeastern states have adopted the California emission standards pursuant to the authority in Section 177. New York and Massachusetts have adopted regulations that would impose these standards beginning in Model Years 1994 and 1995, respectively. Judicial challenges to these states have been brought by the trade associations for the vehicle manufacturers.²¹ These suits claim, among other things, that the adoption of California standards in these states without the requirement for California fuels violates the “no third-car” provisions of Section 177. With regard to zero emission vehicles, the suits claim that the states’ sales requirements violate the Section 177 prohibition on indirect sales limitation of other vehicles certified by California.

The only rulings in these challenges have occurred in the New York litigation. In that case the court initially granted the auto industry’s motion for summary judg-

¹³See Section 201(A), tables 1-C through 1-F, S.1630.

¹⁴See Section 201(A), tables 1-C through 1-F, S.1630.

¹⁵See Cong. Rec. S.2734-2760 (daily edition Mar. 20, 1990).

¹⁶See Section 203 of S.1630, as enacted, which adds new subsections (g) to (1) to the existing § 202 of the Act.

¹⁷See Sections 202 and 205 of S.1630, as enacted, which add new or revised Sections 202(a)(6) and 202(j) to the existing bill.

¹⁸See Section 229 of S.1630, as enacted, which adds new Sections 241 to 250 to the existing bill.

¹⁹See Section 229 of S.1630, as enacted, which adds new Sections 241 to 250 to the existing bill.

²⁰The California Low Emission Vehicle program establishes standards for “Ultra Low Emission Vehicles” (0.04 gpm non-methane organic gases), and Zero Emission Vehicles. These regulations contain a 2-percent sales mandate for Zero Emission Vehicles beginning in 1998 with increases up to 10 percent in 2003.

²¹See *Motor Vehicle Mfrs. Ass’n v. N.Y. Dep’t Env’tl. Conserv.*, 810 F. Supp. 1331, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 20879 (N.D.N.Y. 1993); *American Auto. Mfrs. Ass’n v. Greenbaum*, 1993 WL 443946, No. 93-10799-MA (D. Mass. 10-27-93).

ment on the third-car/fuels issue,²² but on a request for rehearing by the state the court ruled that this issue should go to trial.²³ With regard to the zero emission vehicle requirement, the court has agreed with auto industry arguments that the sales mandate constitutes a limitation on the sale of all other new motor vehicles in New York.²⁴ The state has appealed this issue to the U.S. Court of Appeals for the Second Circuit.

Under the new amendments, fuels will play a significant role in helping to reduce total vehicle emissions in certain non-attainment areas. The legislation limits the concentration of benzene, aromatics and metals in motor fuels. In the alternative, fuel suppliers are required to achieve a 15 percent reduction in total vehicular emissions from 1990 vehicles using 1990 baseline fuels by 1995, and a 25 percent reduction (with a possible relaxation to 20 percent) by 2000.²⁵

These new requirements will pose significant engineering hurdles for the vehicle industry and the motoring public, since the technology to comply with many of these requirements must be developed in some cases, and perfected for wide-spread use in other cases.

§ 12:123 Evaluation of technology forcing

The House Energy and Commerce Committee Report accompanying H.R. 3030 provides a clear view of that Committee's evaluation of technology forcing under Title II.

The 1970 Clean Air Act forced technological innovation on the foreign and domestic automobile industry. It required EPA to set tailpipe standards that reduced hydrocarbon (HC), nitrogen oxide, and CO pollution in automobile exhaust by at least 90 percent from 1970 baseline which includes some controls on HC and CO emissions. No technology existed at the time to meet the 90 percent standards. EPA by rule set an exhaust standard of 0.41 grams per mile (gpm) for HC emissions. It set a standard of 0.4 gpm for NO_x, which was subsequently relaxed in the 1977 Clean Air Act Amendments to 1.0 gpm. And it set a standard of 3.4 gpm for CO. The theory was that the 1970 standards would force the development of brand-new technology.

The theory worked. The industry responded by developing the "catalytic converter," which fits on the end of the tailpipe and converts HC, NO_x, and CO into carbon dioxide, water vapor, and nitrogen gas. The original standards, as amended in 1977, remain in effect today. However, these specific standards and technology have not, as yet, achieved the 90 percent of 1970 in all cases and the number of recalls annually by foreign and domestic companies indicates some of the difficulty in meeting even current standards in use. On the other hand, there is testimony that the standards can easily be met.¹

Measuring the success of *technology forcing on other than a political level* involves the examination of three factors. The first factor is the performance of vehicles in EPA's certification testing program,² the second is the actual in-use performance of vehicles in the hands of consumers; and the third is whether ambient air quality

²²Motor Vehicle Mfrs. Ass'n v. N.Y. Dep't Env'tl. Conserv., 810 F. Supp. 1331, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20879 (N.D.N.Y. 1993).

²³Motor Vehicle Mfrs. Ass'n v. N.Y. Dep't Env'tl. Conserv., 810 F. Supp. 1331, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20879 (N.D.N.Y. 1993), 831 F. Supp. 57 (N.D.N.Y. 1993) (on reconsideration).

²⁴Motor Vehicle Mfrs. Ass'n v. N.Y. Dep't Env'tl. Conserv., 810 F. Supp. 1331, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20879 (N.D.N.Y. 1993), 831 F. Supp. 57 (N.D.N.Y. 1993) (on reconsideration).

²⁵See Section 219 of S.1630, as enacted, which adds new Section 211(k) to the existing bill.

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¹H.R. Rep. No. 101-490, accompanying H.R. 3030, 1990, at 280.

²The EPA certification procedure relies on emissions testing of a relatively small number of manufacturer's prototype vehicles. Some vehicles are tested over 50,000 miles, others are tested for 4,000 miles and have emission deterioration derived from the 50,000 mile testing applied to determine

levels for mobile source related pollutants have improved since the enactment of Title II.

When EPA certification data for prototype vehicles from the 1980 and 1981 model years is compared with that from the 1968 model year, it is clear that startling reductions in pollutant emissions were achieved. It seems evident, then, that since the enactment of Title II, prototype vehicles tested in EPA's certification program pollute less than their predecessors. With regard to carbon monoxide, pre-1968 vehicles emitted approximately 80 to 100 grams per mile.³ The emissions of CO from the 1986 certification data reported by EPA, in contrast, shows mean emission levels under 2.0 grams per mile.⁴ Hydrocarbon emissions have shown similar reductions: pre-1968 vehicles emitted approximately 8.2 grams per mile,⁵ whereas the certification level for hydrocarbon in 1986 passenger vehicles is in the range of 0.2 grams per mile.⁶ Similarly, oxides of nitrogen emissions have shown significant reductions: Pre-1968 emission levels were 3.4 grams per mile,⁷ as compared with a mean of approximately 0.3 grams per mile in 1988.⁸

It should be recognized that the certification levels consist of data from vehicles from each manufacturer's model lines. These figures are derived from vehicles with engine-transmission configurations that are sold in forty-nine of the fifty states, with the exception of California, which has its own certification system.⁹ The certification levels for tailpipe emissions, however, are actually below the standards set for them. Manufacturers have desired to build in a margin of safety with respect to these levels, since the variability inherent in the actual production process is not reflected in the prototype vehicles. The certification figures, while impressive, therefore do not necessarily reflect the performance of vehicles in the hands of the motoring public. Actual emissions are dependent upon a large number of variables, all of which may cause emissions to increase above certification levels. These variables include poor maintenance practices on the part of vehicle owners; tampering with or removal of emission control systems; the use of leaded fuel in catalyst-equipped vehicles; emission control system deterioration; and component failures. In order to more accurately measure actual performance of vehicles in use, EPA has carried out a program to inspect and test in-use vehicles.¹⁰ The test data generated from this in-use performance program, together with data collected by California under its program, have been used by EPA to create what are commonly referred to as "emission factors" for motor vehicles. Emission factors are those figures that indicate the severity of pollution and are used by the states in developing and revising State Implementation Plans (SIPs) to calculate the total emissions from classes of mobile sources. In developing these factors, it must be recognized that data for the most recently produced vehicles are based upon testing of low mileage vehicles. Low mileage vehicles generally are less susceptible to the negative variables listed

compliance with the applicable standard. *See, e.g.,* International Harvester Co. v. Ruckelshaus, 478 F.2d 615, 642-47, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20133, 20145-47 (D.C. Cir. 1973) (description of both kinds of EPA procedures for certification).

³Report of the National Commission on Air Quality 194 (1981).

⁴Testimony of Michael P. Walsh, former EPA Deputy Assistant Administration for Mobile Sources Before the House Energy and Commerce Committee, Subcommittee on Health and the Environment May 23, 1989.

⁵Report of the National Commission on Air Quality 194 (1981).

⁶*See* discussion § 12:120.

⁷Report of the National Commission on Air Quality 194 (1981).

⁸*See* discussion § 12:120.

⁹California's certification system operates in a manner identical to that of EPA. This program is discussed in greater detail in § 12:124.

¹⁰*See* 40 C.F.R. §§ 85.2201 to 85.2218 (EPA's In-Use Compliance Testing Program) (short test).

above. As the vehicles accumulate greater mileage, the effect of these variables is manifested. Table 1 contains a comparison of the average lifetime emissions of low-altitude gasoline-fueled automobiles in use from pre-1968 to 1982 or 1984, and are based on EPA's "Mobile 2" emission factors. In addition, Table 1 shows the estimates of the National Commission on Air Quality for in-use emissions, but are based on somewhat different assumptions with respect to vehicle deterioration. Table 1 also compares the EPA average lifetime emissions to those estimated by the National Commission on Air Quality.

TABLE 1
Average Lifetime (100,000 Miles) Emissions of Gasoline Automobiles*

Pollutant	Year Model	Standard (gm/mi)	Average Emissions (GM/mi)		Ratio of Emissions to Standard	
			EPA	NCAQ	EPA	NCAQ
Hydrocarbons	Pre-1968	None	8.15			
	1975-1976	1.5	2.74	2.41	1.8	1.6
	1977-1978	1.5	2.74	2.55	1.8	1.7
	1979	1.5	2.74	1.83	1.8	1.2
	1980	0.41	1.74	0.94	4.2	2.3
	1981	0.41	1.34	0.87	3.3	2.1
	1982	0.41	1.34	0.82	3.3	2.0
	1983	0.41	1.34	0.79	3.3	1.9
	1984+	0.41	1.34	0.79	3.3	1.9
Carbon Monoxide	Pre-1968	None	89.5			
	1975-1976	15.0	34.5	29.8	2.3	2.0
	1977-1978	15.0	34.5	32.9	2.3	2.2
	1979	15.0	34.5	22.6	2.3	1.5
	1980	7.0	20.4	16.9	2.9	2.4
	1981	3.4	19.0	16.9	5.7	5.0
	1982	3.4	19.0	14.7	5.6	4.3
	1983	3.4	18.8	11.7	5.5	3.4
	1984+	3.4	18.8	12.4	5.5	3.6
Nitrogen Oxides	Pre-1968	None	3.44			
	1975-1976	3.1	2.63	2.55	0.8	0.8
	1977-1979	2.0	2.19	2.10	1.1	1.1
	1980	2.0	2.06	2.10	1.0	1.0
	1981	1.0	1.50	1.34	1.5	1.3
	1982+	1.0	1.50	1.44	1.5	1.4

* Report of the National Commission on Air Quality 199 (1981).

Note: EPA emission estimates include impact of use of leaded gasoline on vehicles with catalytic converters; Commission estimates do not take this into account.

Data presented by General Motors at the 1989 Annual Meeting of the Society of Automotive Engineers indicates that the average 1987 GM model is meeting the applicable emission standards at 50,000 miles.¹¹ The reasons stated for the improvements in recent years include: more precise electronic control systems, improved catalysts, reductions in oil consumption (oil additives foul catalytic converters) and

¹¹Haskew, Garrett & Gumbleton, "GM's Results—The EPA/Industry Cooperative Test Program SAE Paper 890185." Mar. 1989.

improved engine designs.¹²

First, it is clear from these data that the introduction of new technology (oxidation catalysts and three-way closed-loop systems) has caused in-use emissions to drop significantly. Second, there is a significant reduction in emissions attendant to the application of new technology. The average emissions of in-use vehicles are decreasing as manufacturers have more time to perfect emission control systems. However, a number of in-use vehicles continue to exceed applicable emission standards.

While it may be argued that technology forcing has not been successful because in-use emissions have exceeded applicable standards,¹³ such an argument fails to consider the actual emission levels in perspective. The levels of carbon monoxide, for example, declined from approximately 90 grams per mile prior to 1968 to approximately 15 grams per mile in 1984 to 1985. Hydrocarbon emissions have been reduced from over 8 grams to approximately 1.0 gram per mile over the same time period, and NO_x emissions have been reduced from 3.4 grams to approximately 1.4 grams per mile. Given the enormous potential for tampering, misfueling, and component deterioration, the actual reductions achieved should be viewed as quite significant.

While the in-use emission data from passenger vehicles is susceptible to two interpretations, an examination of ambient air quality levels for CO and ozone inexorably leads to the conclusion that air quality has substantially improved since the advent of Title II of the Clean Air Act. Since carbon monoxide is directly emitted from motor vehicles, a comparison of monitored ambient CO levels in major urban areas provides a good yardstick for the progress, or its lack, that has been made.

A comparison of EPA's *Emission Trends* reports from 1975 to 1985¹⁴ clearly evidences that both the number and the severity of violations of the ambient CO standard have decreased in most major urban areas. This decrease has occurred in spite of a growth in both total vehicle population and in vehicle miles traveled. Nevertheless, some areas *will* continue to experience problems with CO in the future. In New York City and Chicago, for example, vehicle density and congestion in downtown areas are continuing sources of high CO levels. *Areas such as Anchorage and Fairbanks have high CO levels due to the extremely cold climate in the winter.* Denver has high levels of carbon monoxide both because of its high vehicle density and because of its high-altitude location.¹⁵ If the trend in other urban areas is followed, however, Denver's air quality can be expected to improve over the next several years as vehicles achieve better emissions performance, especially following implementation of the 1984 high-altitude standards.¹⁶

It is much more difficult to gauge the success of the vehicle emission program, however, by reference to ambient ozone concentrations. Automobiles do not directly emit ozone; instead, ozone is formed by the chemical reaction of hydrocarbons, oxide, and nitrogen emissions in the presence of sunlight. Thus, atmospheric conditions are critical in the formation of ozone. Many other stationary sources also make significant contributions to the total hydrocarbon and NO_x emissions. For example,

¹²Haskew, Garrett & Gumbleton, "GM's Results—The EPA/Industry Cooperative Test Program SAE Paper 890185." Mar. 1989.

¹³See, e.g., R. Crandall, T. Keeler & L. Lave, *Regulating the Automobile* ch. 5 (1986).

¹⁴See Environmental Protection Agency, Office of Air Quality Planning and Standards, *Emission Trends* (1975 & 1985).

¹⁵The difference in air pressure between sea level areas and high-altitude locations (above 4,000 feet) causes vehicles to run with a lower air-fuel ratio, which in turn causes higher CO and HC emissions.

¹⁶See Clean Air Act § 206(f)(1), 42 U.S.C.A. § 7525(f)(1) (1982).

petroleum refining, coating of products paint and solvent, manufacturing, and the production of other commonly used industrial and household chemicals are all major contributors of hydrocarbons.¹⁷ Major contributors of NO_x emissions to the atmosphere include electric utility boilers, industrial boilers, home heating systems, and similar items. Table 2 shows the ratio of stationary source to mobile source VOC emissions for the years 1987-2004.

TABLE 2*
Summary of 2004 VOC Emissions in Nonattainment Cities and Attainment Regions (Emissions in 1,000 Tons Per Year)**

	VOC emissions			Change from 1985 emission (in percent)		
	Total	Stationary	Mobile	Total	Stationary	Mobile
Nonattainment cities by design value category (in ppm O ₃)						
0.13-0.14	3,100	2,000	1,100	-2	20	-26
0.15-0.17	5,400	3,400	2,000	-1	21	-24
0.18-0.26	1,600	1,000	590	0	19	-22
0.26	930	640	290	-4	24	-36
Total						
(nonattainment).....	11,000	7,100	4,000	-1	21	-25
Attainment Regions .	14,000	8,500	5,700	3	26	-18
Total	25,000	16,000	9,700	1	23	-21

* Office of Technology Assessment, 1989.

** Totals are rounded. Assumes no regulation other than those in place in 1987. The estimates that we present are representative of the emissions on a typical nonattainment day, multiplied by 365 days per year, rather than estimates of the annual emissions. For convenience, throughout the report, we refer to these estimates as annual emissions rather than as "nonattainment-day-equivalent-annual-emissions." Note that the baseline does not include reductions due to the recently promulgated limit on gasoline volatility of 10.5 psi Reid vapor pressure (RVP).

An examination of Table 2 indicates that the ratio of stationary to mobile sources is predicted to increase. According to the 1989 OTA report to the House and Senate Committees:

*Although the number of vehicle-miles-traveled is forecast to increase in many areas over this period, the gradual replacement of current vehicles with newer, cleaner ones will result in an overall decline in highway vehicle emissions. * * * VOC emissions from highway vehicles are projected to decline by about 25 percent between 1985 and 1999. Stationary source emissions, on the other hand, are forecast to increase steadily between 1985 and 2004, showing a 10-percent increase by 1994 and a 23-percent increase by 2004, over 1985 levels. Growth of small (less than 50 ton-per-year) stationary VOC source emissions is one of the most important reasons why overall VOC emissions are not expected to decline more rapidly in the earlier years and why total emissions may show a net increase after 1999. This source category effectively offsets much of the emissions reduction realized from highway vehicles.*

Likewise, in 1981 the National Commission on Air Quality found that by 1990 the ratio of stationary to mobile NO_x emissions would be approximately 53 percent stationary source to 47 percent mobile source.¹⁸ Another factor that must be considered with respect to the production of ozone is that ozone has been known to be subject to long range transport, such as with sulfates and fine particulate matter. Thus, there will be anomalies when the emission inventories of certain areas are

¹⁷See, e.g., Environmental Protection Agency, Office of Air Quality Planning and Standards, Control Techniques for Volatile Organic Emissions from Stationary Sources (PB-284 804/2BE) (1978).

¹⁸Environmental Protection Agency, Office of Air Quality Planning and Standards, Control Techniques for Volatile Organic Emissions from Stationary Sources (PB-284 804/2BE) 192 (1978).

compared with the monitored ozone concentrations for those same areas.¹⁹

Even considering these confounding factors, if the ozone concentration in an area that is not subject to transport and that has long been identified with excessive ozone concentrations—that is, Los Angeles—is examined, it is apparent that peak ozone concentrations have been reduced, as has the frequency of violations.²⁰ The reduction in ozone concentrations was obtained despite the substantial population growth of Los Angeles, and despite the historically high vehicle/population ratio, which has not appreciably decreased in the last ten years. Much of the credit for Los Angeles' improvement is due to California's aggressive mobile source program, as well as the state's pioneering efforts in the areas of stationary source controls of hydrocarbons and NO_x emissions. If emission controls had not been installed on motor vehicles, it is likely that ozone concentrations would have continued to increase to the point where air quality would be completely unacceptable from a public health perspective.²¹

Another measure of the success of the emission control program under Title II of the Clean Air Act is the effect that emission control devices have had on vehicle performance and fuel economy. Prior to the installation of catalytic converters, vehicle performance and fuel economy suffered because of engine modifications; improvements in performance and economy were attributable to the technology that produced the oxidation catalyst, installed on a large scale in model year 1975. Manufacturers were able to rely on the catalyst to reduce emissions, which in turn allowed them to recalibrate their engines so as to both achieve better fuel economy and better performance. Manufacturers were also assisted in achieving performance and fuel economy improvements by downsizing and by the *relatively constant* emission standards in the *mid- to late-1980s*. Thus, manufacturers could begin to refine the modifications made to engines to better fuel economy and performance while still complying with emission standards. Beginning with model years 1980 and 1981, onboard electronic control systems have meant better vehicle driveability and fuel economy. The corporate average fuel economy levels for model year 1985 show that GM, Ford, and Chrysler each have achieved improvements of *over* ten miles per gallon in their fleets from 1975 levels.²² Import manufacturers have likewise *substantially* improved the fuel efficiency of their vehicles.²³

The installation of electronic engine control systems has also led to other changes in motor vehicles. The success of onboard computers, originally used to monitor air-fuel ratios, has prompted manufacturers to use computer technology for other major systems to improve performance, safety, and comfort. The recent innovations such as the anti-lock braking system,²⁴ as well as improvements in amenities such as electronic dashboards, anti-theft systems, and trip computers have all resulted from

¹⁹See, e.g., "EPA Notice of Proposed Rulemaking for the Federal Implementation Plan for the South Coast Air Quality Management District, 55 Fed. Reg. 36458 (Sept. 5, 1990)."

²⁰See van Ommering, Post 1987 Clean Air Attainment, *Envtl. Forum*, Dec. 1985, at 10.

²¹See, e.g., "Simulated Ozone Concentrations in the South Coast Air Basin: Comparison Between 1974 and 1987 Levels," in Report to the National Commission on Air Quality (Control No. 61-AQ-8349) (Sept. 1980) (Southern California Regional Study).

²²Petitions of GM and Ford to NHTSA regarding the relaxation of CAFE standards for Model Year 1986 vehicles, Mar. 1, 1985. Fleet-wide fuel economy for domestic vehicles has increased from about 14 mpg to about 27 mpg.

²³Comments of Automobile Importers of America, Inc., to NHTSA regarding the relaxation of CAFE standards for model year 1986 vehicles, Feb. 28, 1985. While many of the import vehicles started at a higher level of fuel economy, fleet-wide fuel economy for major Japanese manufacturers is above 30 mpg. This increase has occurred while these vehicles have become more roomy and more powerful.

²⁴The anti-skid braking system's computer monitors the electrical current generated by the friction of the braking action. If the wheel locks, the computer automatically releases the brake and acts

the ability of manufacturers to use onboard computers.

§ 12:124 Conclusion

The implementation of Title II of the Clean Air Act generated controversy both with the manufacturers and, initially, with the motoring public. As manufacturers gained time to adjust the stringent emission control program, however, they adapted to this major technological forcing effort. Vehicles now emit significantly less pollution than previously, owing to the application of new technology. The program has not been perfect, however; in-use emission levels continue to exceed applicable standards.

With the 1990 Clean Air Act Amendments imposing new, much more stringent requirements for all classes of vehicles, the vehicle manufacturers will face another significant test. Congress seems to have learned that adequate leadtime and periods of stability in standards enhance the actual performance of the vehicles in the hands of the consumers. The test this time will be whether the technological challenge can be met and what the costs and benefits of this effort will be. The 1990s will be a quite lively and interesting decade for the motor vehicle industry.

VII. REGULATION OF MOTOR VEHICLES AND FUELS: “MOBILE SOURCES”*

§ 12:125 Overview

Title II of the Clean Air Act establishes a comprehensive structure for regulating emissions from automobiles, motorcycles, trucks, and buses. In addition, the regulation of fuels and fuel additives fall within the statutory scheme. Under section 202 of the Act, the Environmental Protection Agency (EPA) is empowered to promulgate emission standards. Statutory standards and deadlines are specified for emissions of hydrocarbons, carbon monoxide, and nitrogen oxides emitted by light-duty vehicles.¹ The statutory standards have required manufacturers to accelerate the development and application of new technologies, most notably catalysts. Beyond these statutory standards, EPA is given broad discretion to establish standards for other pollutants covering light-duty vehicles and all pollutants for all other mobile source categories: The essential criterion is technological feasibility. Through the discretionary standard setting process, EPA has further pressed the automobile industry to develop and apply available technology.

The technology forcing impetus of Title II was further directed by the antitrust consent decree entered into by the major domestic automobile companies in 1974.² Under this decree, automobile companies were required to pursue their technology development independently. Thus, in considering waivers from statutory standards and limits for discretionary standards, EPA evaluated the feasibility of the independently developed technologies and made industry-wide decisions based on the most advanced of the available technologies.

In addition to the standard setting process, Title II establishes a number of enforcement mechanisms by which the Administrator of EPA can assure compliance

to “pump” the brakes so that skidding is minimized.

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¹42 U.S.C.A. § 7521. Limited waivers from these standards and deadlines are available and have been granted in the past. *See, e.g.*, § 12:124.

²*United States v. AMA*, Civ. Action No. 69-75-JWC (C.D. Cal. 1969) (consent decree) (as modified Aug. 1982).

with emission standards established under section 202. The statutory scheme empowers the Administrator to review the emissions performance of vehicles at various stages: prototype, assembly line, and in-use. The major enforcement mechanisms are prototype certification under section 206(a),³ assembly line testing under section 206(b),⁴ and recall under section 207(c).⁵ Other mechanisms are warranty enforcement under sections 207(a)⁶ and 207(b),⁷ and enforcement of the prohibited acts provision of section 203.⁸ Under that section, a manufacturer may not sell a vehicle unless the vehicle is covered by a certificate of conformity,⁹ refuse to provide information to EPA that is required under section 208,¹⁰ remove or render inoperative (“tamper” with) any device or element installed for compliance with emission standards,¹¹ or refuse or fail to comply with labeling requirements, warranties, or recall orders.¹² Under section 203(a)(3),¹³ auto mechanics and fleet owners also are prohibited from tampering with emission controls. Under section 204,¹⁴ EPA may seek to enjoin violations of section 203. Under section 205,¹⁵ violations of section 203 are subject to civil penalties of up to \$10,000 per vehicle for manufacturers and \$2,500 for auto mechanics and fleet owners.

Under the authority of these enforcement mechanisms, EPA has extended the push for development of technology beyond new car performance to include that development necessary to prevent or mitigate deterioration of the emissions performance of vehicles in actual use. As the focus of EPA’s attention has shifted more and more to in-use emissions performance, auto manufacturers have had to apply increasingly sophisticated hardware to prevent in-use deterioration, misadjustment, and tampering, and they have had to dedicate more resources to assembly line quality control programs. In addition, because of the interrelationship between fuels and fuel additives and performance of emission control systems, regulation under the fuels and fuel additives program has resulted in further technological innovations.¹⁶

§ 12:126 Standard setting

The authority of the Administrator of EPA to establish emission standards for motor vehicles derives from section 202 of the Act. While this provision is frequently considered “technology forcing,”¹ requiring the development of emission control technology that might otherwise not be available, section 202 is actually an amalgamation of technology forcing, environmental necessity, and cost-effectiveness

³42 U.S.C.A. § 7525(a).

⁴42 U.S.C.A. § 7525(b).

⁵42 U.S.C.A. § 7525(c).

⁶42 U.S.C.A. § 7541(a).

⁷42 U.S.C.A. § 7541(b).

⁸42 U.S.C.A. § 7522.

⁹Clean Air Act § 203(a)(1), 42 U.S.C.A. § 7522(a)(1).

¹⁰Clean Air Act § 203(a)(2), 42 U.S.C.A. § 7522(a)(2).

¹¹Clean Air Act § 203(a)(3), 42 U.S.C.A. § 7522(a)(3).

¹²Clean Air Act § 203(a)(4), 42 U.S.C.A. § 7522(a)(4).

¹³42 U.S.C.A. § 7522(a)(3).

¹⁴42 U.S.C.A. § 7523.

¹⁵42 U.S.C.A. § 7524.

¹⁶See § 12:130.

[Section 12:126]

¹See, e.g., *International Harvester v. Ruckelshaus*, 478 F.2d 615, 3 Env’tl. L. Rep. (Env’tl. L. Inst.) 20133 (D.C. Cir. 1973).

considerations.² Other factors such as fuel economy, noise, and safety enter into the calculation as well.³

Section 202 is also a mixture of Congressionally-mandated standards, that allow virtually no administrative discretion, and grants of authority to EPA to set standards, limited only by broad environmental considerations and the general limitations on administrative action circumscribing arbitrary and capricious action.⁴ Between those poles lie presumptive standards with administrative discretion to set alternative requirements based on certain criteria. The way in which these provisions force technological development is, necessarily, a product of their inception: as Congressionally mandated standards, as broad grants of authority, or as directives to assess technological feasibility.

Although EPA has the authority to set emission standards for any pollutant that contributes to health-endangering air pollution,⁵ the Agency is required to establish standards for all classes of motor vehicles for four pollutants: carbon monoxide, hydrocarbons, oxides of nitrogen, and particulate matter.⁶ While the nature of these pollutants has not generally been an issue, in *Ford Motor Company v. EPA*⁷ the issue arose as to whether EPA could control emissions of methane hydrocarbons as well as non-methane hydrocarbons, since methane hydrocarbons are generally agreed to be photochemically unreactive and do not contribute to smog formation.⁸ EPA argued that in implementing section 202(b),⁹ which initially required a 90 percent reduction in light-duty vehicle hydrocarbon emissions from the 1970 base year, Congress intended the Agency to regulate emissions on the basis of total hydrocarbon exhaust.¹⁰ The U.S. Court of Appeals for the D.C. Circuit agreed, and upheld EPA's action.¹¹

It has generally been presumed that standards, regardless of their origin in section 202, apply to each vehicle individually.¹² However, EPA has promulgated provisions allowing compliance with certain standards on the basis of averaging families of vehicles; to wit, a manufacturer may show compliance with the standard by demonstrating that the production-weighted average of families within a class of vehicles meet the applicable standard, with the specific families certified to "standards" above and below the applicable standard.¹³ This approach has been adopted for light-duty diesel particulates,¹⁴ and for heavy-duty NO_x and particulates, where

²Natural Resources Defense Council, Inc. (NRDC) v. EPA, 655 F.2d 318, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20361 (D.C. Cir. 1981), cert. denied, 454 U.S. 1017 (1981).

³See, e.g., Clean Air Act § 202(b)(5)(C), 42 U.S.C.A. § 7521(b)(5)(C).

⁴Natural Resources Defense Council, Inc. (NRDC) v. EPA, 655 F.2d 318, 328, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20361, 20365-66 (D.C. Cir. 1981), cert. denied, 454 U.S. 1017 (1981).

⁵Clean Air Act § 202(a), 42 U.S.C.A. § 7521(a).

⁶Clean Air Act § 202(a)-(b), (g), 42 U.S.C.A. § 7521(a)-(b), (g).

⁷Ford Motor Company v. EPA, 604 F.2d 685 (D.C. Cir. 1979).

⁸Ford Motor Company v. EPA, 604 F.2d 685 n.2 (D.C. Cir. 1979).

⁹42 U.S.C.A. § 7521(b).

¹⁰Ford Motor Company v. EPA, 604 F.2d 685, 688 (D.C. Cir. 1979).

¹¹Ford Motor Company v. EPA, 604 F.2d 685, 688-89 (D.C. Cir. 1979). This leaves open the question of whether EPA *could* establish a nonmethane hydrocarbon standard of equivalent stringency. See *Id.* at 688-89 nn.12 & 13.

¹²See, e.g., *International Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 628, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20133, 20135 (D.C. Cir. 1973).

¹³48 Fed. Reg. 33456 (1983).

¹⁴48 Fed. Reg. 33456 (1983).

averaging withstood legal challenge.¹⁵

This approach to regulation presents the related questions of whether averaging to meet standards is sanctioned at all by the Act, and the extent to which the issue is dependent upon the nature of the standard setting authority (*i.e.*, statutory standards versus discretionary standards, light-duty versus heavy-duty). While the court in *NRDC v. Thomas* upheld averaging in the absence of a clear Congressional prohibition, the court did leave open the argument that the testing and certification provisions of the Act might preclude averaging. Since that argument was not raised, the court found it could not be dispositive of the issue and set it out only for consideration in some other proceeding.

EPA has authority under section 202 to set standards for motor vehicles, defined as self-propelled vehicles designed for transporting persons or property on a street or highway.¹⁶ EPA has established regulations enumerating criteria by which to determine whether a vehicle is intended for street or highway use, such as the ability to exceed 25 miles per hour on paved roads.¹⁷ In the 1990 Clean Air Act Amendments, Congress extended EPA's standard-setting authority to include "non-road" vehicles and engines, including various classes of agricultural and construction equipment.¹⁸

The statute defines two classes of motor vehicles: light-duty vehicles, and heavy-duty vehicles (exceeding 6,000 lbs. gross vehicle weight rating (GVWR)).¹⁹ EPA had included within its definition of light-duty vehicles any vehicle designed for transportation of persons or property and rated at 6,000 lbs. GVWR or less. Upon petition for review to the U.S. Court of Appeals for the D.C. Circuit, that definition was struck down on the basis that legislative history showed that the term light-duty vehicle was intended to denote passenger cars.²⁰ The result was the formation of four classes of vehicles: light-duty vehicles; light-duty trucks under 6,000 lbs. GVWR; light-duty trucks between 6,000 lbs. and 8,500 lbs. GVWR (light-duty trucks meeting the statutory definition of heavy-duty vehicles); and heavy-duty vehicles (over 8,500 lbs. GVWR).²¹

The general authority for standard-setting in section 202(a)(1)²² allows the EPA Administrator to set standards applicable to the emission of any air pollutants "which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." These standards are "technology based" in that section 202(a)(2) requires that standards set under section 202(a)(1) shall not take effect until "after such period as the Administrator finds necessary to permit the development and application of the requisite technology."

In the case of *Natural Resources Defense Council, Inc. (NRDC) v. EPA*,²³ the U.S. Court of Appeals for the D.C. Circuit set out the conditions the court will look to in

¹⁵50 Fed. Reg. 10606 (1985). *NRDC v. Thomas*, 805 F.2d 410 (D.C. Cir. 1986).

¹⁶Clean Air Act § 216(2), 42 U.S.C.A. § 7550(2).

¹⁷40 C.F.R. § 85.1703(a)(1). This particular provision is actually defined in the negative: A vehicle which cannot exceed twenty-five miles per hour is not considered to be a motor vehicle for purposes of regulation.

¹⁸See Clean Air Act § 213(a), 42 U.S.C.A. 7547(a); *see also* Engine Mfrs. Assn. v. EPA, 88 F.3d 1075, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 21477 (D.C. Cir. 1996).

¹⁹Clean Air Act § 202(b)(3), 42 U.S.C.A. § 7521(b)(3).

²⁰*International Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 640, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20133, 20143 (D.C. Cir. 1973).

²¹See *NRDC v. EPA*, 655 F.2d 318, 322 n.3, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20361, 20362 n.3 (D.C. Cir. 1981).

²²42 U.S.C.A. § 7521(a)(1).

²³*Natural Resources Defense Council, Inc. (NRDC) v. EPA*, 655 F.2d 318, 11 Env'tl. L. Rep. (Env'tl.

assessing whether EPA has reasonably projected that technology will be available. The court drew from its earlier decision in *International Harvester v. Ruckelshaus*,²⁴ in which it had established that technological availability did not mean that all development had to be completed before the tooling up period.²⁵ The court indicated, however, that EPA was required to have a reasoned basis for its projection of availability and could not just base a decision on a “crystal ball inquiry.”²⁶ Applying these general criteria in *NRDC v. EPA*, the court established three principles for evaluating the reasonableness of EPA’s technological prediction under section 202(a): First, the Agency must identify projected technology and answer any theoretical objections to the projected technology to be used in meeting the standard; second, EPA must identify the major steps necessary for refinement of the device; and third, the Agency must offer plausible reasons to believe the necessary steps will be completed within the available leadtime.²⁷

Beyond the general standard-setting section, the Act provides for “various specific provisions related to particular classes of vehicles or pollutants.”²⁸ For light-duty vehicles, section 202(g) establishes standards for hydrocarbons, carbon monoxide, oxides of nitrogen, and particulate matter.

For light-duty vehicle hydrocarbon emissions, the statute leaves little discretion: for 1977 through 1979 a 1.5 gram per mile standard is mandated, with the standard for 1980 set at a level representing a 90 percent reduction from the 1970 standard. As noted above, this has been interpreted to mean a 90 percent reduction in total hydrocarbon exhaust (methane and nonmethane), resulting in a 0.41 gram per mile standard. For subsequent years, standards are set forth in section 202(g).

For light-duty vehicle carbon monoxide, the statute set a 15.0 gram per mile standard for 1977 through 1979, a 7.0 gram standard for 1980, and for 1981 and later the standard presumptively was set at 90 percent below the level of emissions allowed in model year 1970, or 3.4 grams per mile.²⁹ For model years 1981 and 1982 section 202(b)(5)(A)³⁰ of a previous version of the Act allowed EPA to grant a waiver of the 3.4 gram per mile standard (up to a level of 7.0 grams per mile³¹ if (1) the waiver is essential to the public interest or the public health and welfare, (2) good faith efforts have been made to meet the standards, (3) the applicant has established that “effective control technology, processes, operating methods, or other alternatives are not available or have not been available with respect to the model in question for a sufficient period of time to achieve compliance prior to the effective date of such standards, taking into consideration costs, driveability and fuel economy,” and (4) National Academy of Sciences studies have not indicated that requisite technology is, in fact, available.³²

This CO waiver provision mirrors the language contained in section 202(b)(5)(D)

L. Inst.) 20361 (D.C. Cir.), cert. denied, 454 U.S. 1017 (1981).

²⁴*International Harvester v. Ruckelshaus*, 478 F.2d 615, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20133 (D.C. Cir. 1973).

²⁵*International Harvester v. Ruckelshaus*, 478 F.2d 615, 629, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20133, 20137 (D.C. Cir. 1973).

²⁶*International Harvester v. Ruckelshaus*, 478 F.2d 615, 629, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20133, 20137 (D.C. Cir. 1973).

²⁷*Natural Resources Defense Council, Inc. (NRDC) v. EPA*, 655 F.2d 318, 331-32, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20361, 20367-68 (D.C. Cir. 1981), cert. denied, 454 U.S. 1017 (1981).

²⁸*Natural Resources Defense Council, Inc. (NRDC) v. EPA*, 655 F.2d 318, 322, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20361, 20362 (D.C. Cir. 1981), cert. denied, 454 U.S. 1017 (1981).

²⁹Clean Air Act § 202(b)(1)(A), 42 U.S.C.A. § 7521(b)(1)(A).

³⁰42 U.S.C.A. § 7521(b)(5)(A).

³¹Clean Air Act § 202(b)(5)(B), 42 U.S.C.A. § 7521(b)(5)(B).

³²Clean Air Act § 202(b)(5)(C)(i)-(iv), 42 U.S.C.A. § 7521(b)(5)(C)(i)-(iv).

of the pre-1977 version of the Clean Air Act, which authorized EPA to suspend otherwise applicable hydrocarbon and carbon monoxide standards of 0.41 and 3.4 grams per mile respectively for one year.³³ In *International Harvester*, the appellate court described the nature of the inquiry EPA must undertake in making this kind of decision. The court indicated that this type of case involved “an analysis which balances the costs of a ‘wrong decision’ on feasibility against the gains of a correct one.”³⁴ Stated another way, EPA must weigh the “risk of an erroneous denial” against the “risk of an erroneous grant”;³⁵ that is, “the risks of economic impacts must be balanced against the environmental risk.”³⁶ Again, the question was raised as to the technology forcing aspect of a waiver provision, particularly in the context of retroactive CO waivers, the authority for which has not been judicially determined.

Light-duty vehicle oxides of nitrogen standards were established in section 202(b)(1)(B).³⁷ In the 1977 through 1980 model years a 2.0 gram per mile standard applies, with 1981 and later models required to meet a 1.0 gram per mile standard. Three different waivers of the 1.0 gram per mile standard are provided: Section 202(b)(1)(B) permits a two year waiver of the standard for small manufacturers which are dependent upon other manufacturers for emission control technology, and was enacted principally to aid American Motors Corporation (and was so employed by EPA);³⁸ section 202(b)(6)(A) allowed up to a four model year waiver (1981-1984) to permit the use of innovative technology, which has never been utilized; and section 202(b)(6)(B) also allowed up to a four model year waiver after 1980 from 1.0 gram per mile, not to exceed 1.5 grams per mile, if shown to be necessary to permit the use of diesel technology. This third waiver is appropriate if EPA determines that (1) the waiver will not endanger public health, (2) the waiver will result in fuel savings, and (3) that the technology has a potential for long-term air quality benefit and has the potential to meet or exceed fuel economy standards. EPA granted a number of waivers under this provision, with the basic rationale that “looser NO_x standards were necessary to permit compliance with the new particulate standard” the Agency had promulgated for light-duty diesel vehicles.³⁹

The grant of waivers to permit diesel technology was challenged in *NRDC v. EPA* on the basis that (1) the waivers would endanger public health due to increased NO_x emissions and due to increased particulates caused by greater sales of diesel vehicles,⁴⁰ and (2) the technology was not shown to have a potential air quality benefit because the waiver resulted in “standards so lacking in content.”⁴¹ The waivers were upheld, however, because the waiver process “was not intended as an op-

³³*International Harvester v. Ruckelshaus*, 478 F.2d 615, 623, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20133, 20134 (D.C. Cir. 1973).

³⁴*International Harvester v. Ruckelshaus*, 478 F.2d 615, 623, 641, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20133, 20134, 20144 (D.C. Cir. 1973).

³⁵*International Harvester v. Ruckelshaus*, 478 F.2d 615, 623, 642, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20133, 20134, 20144 (D.C. Cir. 1973).

³⁶*International Harvester v. Ruckelshaus*, 478 F.2d 615, 623, 641, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20133, 20134, 20144 (D.C. Cir. 1973).

³⁷42 U.S.C.A. § 7521(b)(1)(B).

³⁸*American Motors Corp. v. Blum*, 603 F.2d 978, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20549 (D.C. Cir. 1979).

³⁹*Natural Resources Defense Council, Inc. (NRDC) v. EPA*, 655 F.2d 318, 340, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20361, 20373 (D.C. Cir. 1981), cert. denied, 454 U.S. 1017 (1981).

⁴⁰*Natural Resources Defense Council, Inc. (NRDC) v. EPA*, 655 F.2d 318, 342, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20361, 20374 (D.C. Cir. 1981), cert. denied, 454 U.S. 1017 (1981).

⁴¹*Natural Resources Defense Council, Inc. (NRDC) v. EPA*, 655 F.2d 318, 343, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20361, 20374-75 (D.C. Cir. 1981), cert. denied, 454 U.S. 1017 (1981).

portunity to decide the ultimate fate of diesel technology.”⁴² The court found reasonable EPA’s position that the net effect of some increased NO_x levels was *de minimis*.⁴³ The court also indicated that it was proper for EPA to take into account the trade-off between NO_x and particulate levels in evaluating the public health impact; relaxed NO_x standards would tend to reduce the particulate levels of diesel vehicles.⁴⁴

The court also accepted as reasonable EPA’s position that the air quality criteria were met so long as diesel vehicles have the likelihood of complying with statutory standards upon the expiration of the waiver period.⁴⁵

EPA delayed implementation of strict diesel particulate standards for light-duty vehicles and light-duty trucks from 1985 until 1987 to allow additional time for development of “trap-oxidizer” technology.⁴⁶ While one could question whether the light-duty vehicle provisions have been in actuality “technology forcing” or merely “technology-nudging,” the provisions related to heavy-duty engines entail even greater flexibility.

The starting point for heavy-duty engine standards was the previous section 202(a)(3)(A)(ii),⁴⁷ which generally required that HC and CO standards in 1983 represent at least a 90 percent reduction from the baseline model year levels,⁴⁸ and that NO_x standards in 1985 represent at least a 75 percent reduction. Two escape valves were included, however; EPA could temporarily revise the standards, or could change them altogether. Under the previous section 202(a)(3)(B),⁴⁹ EPA could temporarily revise these standards for three model years, so long as the revised standard is determined to represent “the maximum degree of emission reduction which can be achieved by means reasonably expected to be available for production of such period,” and so long as the revised standard requires a reduction from the previous model year standard. This section could be invoked if the Administrator found that the standard is not technologically feasible “without increasing cost or decreasing fuel economy to an excessive and unreasonable degree,” and that the National Academy of Sciences had not issued a report contradicting such a finding.⁵⁰ It is noteworthy that this provision, as in the general standard setting criteria of section 202(a)(2) and the 1981-1982 CO light-duty vehicle waiver provision of section 202(b)(5), permits cost considerations to be taken into account.⁵¹ This provision has been used liberally by EPA in setting heavy-duty engine standards.⁵²

The alternative to a temporary revision of heavy-duty standards is a changed

⁴²Natural Resources Defense Council, Inc. (NRDC) v. EPA, 655 F.2d 318, 341, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20361, 20373-74 (D.C. Cir. 1981), cert. denied, 454 U.S. 1017 (1981).

⁴³Natural Resources Defense Council, Inc. (NRDC) v. EPA, 655 F.2d 318, 342, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20361, 20374 (D.C. Cir. 1981), cert. denied, 454 U.S. 1017 (1981).

⁴⁴Natural Resources Defense Council, Inc. (NRDC) v. EPA, 655 F.2d 318, 342, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20361, 20374 (D.C. Cir. 1981), cert. denied, 454 U.S. 1017 (1981).

⁴⁵Natural Resources Defense Council, Inc. (NRDC) v. EPA, 655 F.2d 318, 343, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20361, 20374-75 (D.C. Cir. 1981), cert. denied, 454 U.S. 1017 (1981).

⁴⁶49 Fed. Reg. 3010 (1984).

⁴⁷42 U.S.C.A. § 7521(a)(3)(A)(iii).

⁴⁸Baseline model year is defined at Clean Air Act § 202(a)(3)(A)(1), 42 U.S.C.A. § 7521(a)(3)(A)(1), as the year before federal standards applied.

⁴⁹42 U.S.C.A. § 7521(a)(3)(B).

⁵⁰Clean Air Act § 202(a)(3)(C), 42 U.S.C.A. § 7521(a)(3)(C).

⁵¹See also *International Harvester v. Ruckelshaus*, 478 F.2d 615, 641, 3 Env’tl. L. Rep. (Env’tl. L. Inst.) 20133, 20144 (D.C. Cir. 1973).

⁵²See, e.g., 48 Fed. Reg. 1413 (1983); see also 50 Fed. Reg. 10606 (1985).

standard under the previous section 202(a)(3)(E).⁵³ EPA was required to conduct a “pollutant specific” study of hydrocarbons, carbon monoxide, and oxides of nitrogen every three years.⁵⁴ Based on this study and on other information, the Administrator could change the standard prescribed under section 202(a)(3)(A)(ii).⁵⁵ This provision has never been invoked to change a standard.

One interesting inquiry is whether, and to what extent, the technology forcing aspect of section 202(a), relative to light-duty vehicles, is commensurate with the standard setting requirements applicable to heavy-duty engines. In *NRDC v. EPA*⁵⁶ the plaintiff-environmentalists claimed that EPA erred in not setting light-duty diesel particulate standards on the basis of that vehicle capable of meeting the most stringent standards. The court upheld the standards set by EPA, however, and found it reasonable to “impose standards which provide significant particulate reductions, but which do not force any diesel models out of production.”⁵⁷

In a case brought in the U.S. Circuit Court of Appeals for the D.C. Circuit, petitioner-environmentalists challenged EPA-promulgated NO_x and particulate standards for heavy-duty engines. In *NRDC v. Thomas*,⁵⁸ the petitioners argued that EPA erred in not setting standards based on the technological leader, even if most engines could not meet standards the first year in which they apply.⁵⁹ The petitioners have distinguished *NRDC v. EPA*⁶⁰ in two ways: First, that Congress required standards reflecting the maximum degree of reduction feasible for heavy-duty engines only, establishing a “technological leader mandate”; and second, that the language of section 202 and the statutory provision for nonconformance penalties (NCP) bolstered Congress’ intent to set leader-based standards. NCPs are intended to safeguard the position of technologically lagging engines.⁶¹ The court rejected these arguments, finding that Congress did not intend to require leader-based standards, but rather that EPA reasonably considered industry-wide considerations in setting standards.⁶²

In general, states are preempted from attempting to set or enforce their own standards for emissions from new motor vehicles or engines under section 209 of the Act.⁶³ The one exception to that preemption is contained in section 209(b)(1),⁶⁴ which allows the Administrator of EPA to waive preemption for any state which has adopted new vehicle standards prior to 1966. California is the only state eligible for

⁵³42 U.S.C.A. § 7521(a)(3)(E).

⁵⁴Clean Air Act § 202(a)(3)(E)(ii), 42 U.S.C.A. § 7521(a)(E)(ii).

⁵⁵Clean Air Act § 202(a)(3)(E)(ii), 42 U.S.C.A. § 7521(a)(E)(ii).

⁵⁶*NRDC v. EPA*, 655 F.2d 318, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20361 (D.C. Cir. 1981), cert. denied, 454 U.S. 1017 (1981).

⁵⁷*NRDC v. EPA*, 655 F.2d 318, 338, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20361, 20372 (D.C. Cir. 1981), cert. denied, 454 U.S. 1017 (1981).

⁵⁸*NRDC v. Thomas*, 805 F.2d 410, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20269 (D.C. Cir. 1986).

⁵⁹*NRDC v. Thomas*, 805 F.2d 410, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20269 (D.C. Cir. 1986).

⁶⁰*NRDC v. EPA*, 655 F.2d 318, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20361 (D.C. Cir. 1981), cert. denied, 454 U.S. 1017 (1981); see this section notes 2–7, 23–30 and accompanying text.

⁶¹*NRDC v. Thomas*, 805 F.2d 410, 422, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20269 (D.C. Cir. 1986). EPA is required, under section 206(g), to set monetary nonconformance penalties for heavy-duty vehicles and engines. Payment of such a penalty allows a manufacturer to market a vehicle or engine notwithstanding failure to meet applicable standards. See *NRDC v. Ruckelshaus*, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20817 (D.D.C. 1984).

⁶²*NRDC v. Thomas*, 805 F.2d 410, 422, 424, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20269 (D.C. Cir. 1986).

⁶³42 U.S.C.A. § 7543.

⁶⁴42 U.S.C.A. § 7543(b)(1).

this waiver.⁶⁵ The statute requires the Administrator to waive preemption if the state standards will be, in the aggregate, at least as protective of public health and welfare as the Clean Air Act, unless the Administrator finds that the states' determination of protectiveness was arbitrary and capricious, that it does not need the standards to meet compelling and extraordinary circumstances, or that the standards and accompanying enforcement procedures are inconsistent with section 202.⁶⁶ "Standard" is limited to regulations setting quantitative emission levels,⁶⁷ whereas enforcement procedures are criteria designed to determine compliance with applicable standards.⁶⁸ If a waiver has already been granted for the underlying standards, only the consistency determination needs to be considered by EPA in deciding on a waiver for enforcement procedures alone.⁶⁹

The requirement of consistency with section 202 draws from the requirement that standards must be technologically feasible.⁷⁰ On its face, section 209(b)(1)(C) only refers to consistency with section 202(a). However, in *American Motors Corporation v. Blum*,⁷¹ the court held that in making the consistency determination, one must read section 202(a) to incorporate the leadtime determinations in section 202(b). In that case, the court considered that the small volume manufacturer NO_x waiver was section 202(b)(1)(B), which required the Administrator to grant a waiver of the 1981 and 1982 1.0 gram per mile NO_x standard for small volume, vendor-dependent manufacturers. The court held that the Congressional mandate of two years additional leadtime had the effect of assimilating section 202(b)(1)(B) into section 202(a)(2), thereby only permitting a waiver of California standards consistent with that two year leadtime mandate.⁷²

Two other aspects of California waivers deserve mention. Prior to the 1977 Amendments section 209(b) permitted a waiver only if California standards were more stringent than federal standards.⁷³ The 1977 Amendments revised that section to require only that California standards would be "in the aggregate" at least as protective of health and welfare, recognizing California's interest in trading off NO_x control against CO control, since California had an interest in more stringent NO_x control but was concerned about the technological difficulty in meeting a more stringent NO_x standard with the federal CO standard: California passenger car standards for 1984 and later model years, for example, set limits of 7.0 grams per

⁶⁵*Motor & Equip. Mfrs. Ass'n v. EPA*, 627 F.2d 1095, 1100 n.1, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20581 (D.C. Cir. 1979); *Ford Motor Co. v. EPA*, 606 F.2d 1293, 1296 (D.C. Cir. 1979).

⁶⁶*Motor & Equip. Mfrs. Ass'n v. EPA*, 627 F.2d 1095, 1111, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20581 (D.C. Cir. 1979).

⁶⁷*Motor & Equip. Mfrs. Ass'n v. EPA*, 627 F.2d 1095, 1112-14, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20581 (D.C. Cir. 1979).

⁶⁸*Motor & Equip. Mfrs. Ass'n v. EPA*, 627 F.2d 1095, 1111-13, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20581 (D.C. Cir. 1979).

⁶⁹*Motor & Equip. Mfrs. Ass'n v. EPA*, 627 F.2d 1095, 1113, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20581 (D.C. Cir. 1979). For a discussion of preemption issues relating to non-road vehicles and engine standards, see *Engine Mfrs. Assn. v. EPA*, 88 F.3d 1075, 1082, 62 Env'tl. L. Rep. (Env'tl. L. Inst.) 21477 (D.C. Cir. 1996).

⁷⁰*Motor & Equip. Mfrs. Ass'n v. EPA*, 627 F.2d 1095, 1125, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20581 (D.C. Cir. 1979).

⁷¹*American Motors Corp. v. Blum*, 603 F.2d 987, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20549 (D.C. Cir. 1979).

⁷²*American Motors Corp. v. Blum*, 603 F.2d 987, 981, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20549, 20550 (D.C. Cir. 1979).

⁷³*American Motors Corp. v. Blum*, 603 F.2d 987, 981, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20549, 20550 (D.C. Cir. 1979).

mile CO, but 0.4 gram per mile NO_x.⁷⁴ That presented the question of the meaning of section 209(b)(3),⁷⁵ providing that for a motor vehicle or engine to which California standards apply under a waiver, compliance with California standards “shall be treated as compliance with applicable federal standards.” Ford argued that this meant that vehicles meeting California standards, but not necessarily federal standards, could be lawfully sold nationwide.⁷⁶ The D.C. Circuit disagreed, finding that as a result of the change in the waiver provision—allowing a waiver only upon an “in the aggregate” determination rather than requiring every standard be more stringent—the once unexceptional practice of distributing California cars nationwide was rendered unlawful for the simple reason that such cars will no longer comply with federal standards.”⁷⁷

One issue, as of yet not addressed directly, is the coextensiveness of federal and California enforcement of California standards. For example, the question could arise as to whether EPA may attempt to enforce, through a section 206 recall, compliance with a California standard when California itself has not acted under its own authority. If so, is EPA limited to California enforcement procedures, or may EPA employ federal enforcement provisions?

Section 177 of the Act permits other states with approved state implementation plans to adopt standards identical to those for which California has been granted a waiver under section 209. The 1990 Clean Air Act Amendments further modified this provision to provide that state action was prohibited if it had the effect of creating a motor vehicle different from that certified in California. That is, a state may not, through its implementation of section 177, require manufacturers to produce a “third vehicle,” with federal and California vehicles being the first and second. On motions for summary judgment, a federal court in New York found, among other things, that New York’s adoption of California standards without restrictions on fuels similar to California violated the third-vehicle prohibition due to the effect that fuels available in New York would have on emission systems, and that New York’s requirement for sales of zero emission vehicles violated the third-vehicle prohibition due to climatic differences.⁷⁸ However, on reconsideration, the court found that material issues of fact remained on the effect of New York fuels on the emission controls of vehicles designed for California, and therefore the court vacated that part of the summary judgment decision.⁷⁹

On appeal, the Second Circuit held that New York could legitimately adopt emissions requirements without necessarily adopting California’s clean fuels regulations, and that New York could adopt regulations before EPA granted the state a waiver.⁸⁰ However, the court also held that the two-year lead time requirement precluded the state from applying regulations to model year 1995 cars, because some manufacturers would be producing model year 1995 cars prior to the end of the two-year period after the passage of the regulations. The court left the matter of the effect of local fuels as a factual issue to be determined at trial. The First Circuit subsequently reached a contrary conclusion on the issue of lead time, holding that Massachusetts

⁷⁴Ford Motor Co. v. EPA, 606 F.2d 1293, 1296 (D.C. Cir. 1979).

⁷⁵42 U.S.C.A. § 7543(b)(3).

⁷⁶Ford Motor Co. v. EPA, 606 F.2d 1293, 1297 (D.C. Cir. 1979).

⁷⁷Ford Motor Co. v. EPA, 606 F.2d 1293, 1300 (D.C. Cir. 1979).

⁷⁸Motor Vehicle Mfrs. Ass’n v. New York Dep’t of Env’tl. Conserv., 810 F. Supp. 1331, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 20879 (N.D.N.Y. 1993).

⁷⁹Motor Vehicle Mfrs. Ass’n v. New York Dep’t of Env’tl. Conserv., 831 F. Supp. 57, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20311 (N.D.N.Y. 1993) (on reconsideration).

⁸⁰Motor Vehicle Mfrs. Ass’n v. New York Dep’t of Env’tl. Conservation, 17 F.3d 521, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20552 (2d Cir. 1994) and Motor Vehicle Mfrs. Ass’n v. New York Dep’t of Env’tl. Conservation, 79 F.3d 1298, 26 Env’tl. L. Rep. (Env’tl. L. Inst.) 20564 (2d Cir. 1996).

may apply its regulations to model year 1995 as well as later model year engine families produced two years after issuance of the regulations, even though some 1995 engine families will be produced before that date.⁸¹

Litigation between the vehicle manufacturers and northeastern states continued regarding efforts of the states to adopt electric vehicle sales mandates similar to those adopted by California. Efforts by Massachusetts to adopt a sales mandate based on a memorandum of agreement between the manufacturers and California were struck down in *American Automobile Manufacturers Association v. Commissioner*.⁸² Efforts by New York to retain the 1998 model year effective date of its electric vehicle mandate, when California officials had previously deferred the effective date of their program until 2003, were struck down in *American Automobile Manufacturers Association v. Cahill*.⁸³

An association of northeastern states attempted to use EPA's Title I authority to require the adoption of California standards on a regional basis over twelve states and the District of Columbia. The Commonwealth of Virginia and vehicle manufacturers successfully opposed the plan, arguing that EPA lacks the authority to compel states to adopt California standards.⁸⁴

In 2001, the EPA established stricter exhaust emission standards for heavy-duty engines and vehicles and sulfur control requirements for highway diesel.⁸⁵ The new standards are a component of a developing national control program to regulate heavy-duty vehicles and fuel within a single system and will take effect in 2007. The objective is to reduce emissions of particulate matter by 90% and oxides of nitrogen by 95% below existing standards. To meet these stringent requirements, the regulations also require a 97% reduction of sulfur levels in highway diesel fuel by 2006. In response the motor vehicle industry sought judicial review of the new rule, but the D.C. Circuit Court held that the EPA's actions were not arbitrary and capricious.⁸⁶

§ 12:127 Compliance enforcement—Certification of prototypes

Section 206(a) directs EPA to require manufacturers to certify their vehicles.¹ Pursuant to § 206(a), EPA has created an extensive program through promulgation of regulations and issuance of manufacturer's advisory circulars. These regulations and advisory circulars set out procedures for applying for a certificate of conformity and vehicle test procedures, all for the purpose of allowing a determination of whether a manufacturer's prototype design is capable of conforming with emission

⁸¹*American Auto. Mfrs. Ass'n v. Commissioner*, 31 F.3d 18 (1st Cir. 1994).

⁸²*American Auto. Mfrs. Ass'n v. Commissioner*, 998 F.Supp. 10, 28 Env'tl. L. Rep. (Env'tl. L. Inst.) 20210 (D.Mass. 1997).

⁸³*American Auto. Mfrs. Ass'n v. Cahill*, 973 F.Supp. 288, 28 Env'tl. L. Rep. (Env'tl. L. Inst.) 20092 (2d Cir. 1998).

⁸⁴*Virginia v. EPA*, 108 F.3d 1397, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 20718 (D.C. Cir. 1997).

⁸⁵66 Fed. Reg. 5002 (Jan. 18, 2001).

⁸⁶*National Petrochemical & Refiners Ass'n v. EPA*, 287 F.3d 1130 (D.C. Cir. 2002).

[Section 12:127]

¹Clean Air Act § 206(a)(1), 42 U.S.C.A. § 7525(a)(1), states, in pertinent part, that:

The Administrator shall test, or require to be tested in such manner as he deems appropriate, any new motor vehicle or new motor vehicle engine submitted by a manufacturer to determine whether such vehicle or engine conforms with the regulations prescribed under section 202 of this Act [42 U.S.C.A. § 7521]. If such vehicle or engine conforms to such regulations, the Administrator shall issue a certificate of conformity upon such terms, and for such period (not in excess of one year), as he may prescribe.

standards.²

For light-duty vehicles, a manufacturer is required to subject a prototype representing an “engine family” to a mileage accumulation of 50,000 or more miles in accordance with an approved mileage accumulation procedure.³ At each 5,000 mile interval, the vehicle is tested in accordance with the Federal Test Procedure (FTP). These tests are relied upon to establish an emissions deterioration factor for the engine family. Production prototypes of differing configurations, but within the same family, are then tested at 4,000 miles and emission deterioration factors are applied to these results. If the production prototype emissions, with the deterioration factor applied, are under the standards at 50,000 miles, the Agency issues a certificate of conformity.⁴ Prior to receiving the certificate, a manufacturer may not introduce vehicles into commerce or offer to sell them.⁵ After the certificate is issued, it is unlawful for manufacturers to sell, offer for sale, or introduce into commerce any vehicles which are not, in all material respects, identical to the prototype design described in the manufacturer’s application for a certificate of conformity. For parts which reasonably could be expected to affect emission controls, use of parts different from those specified in the application (a “misbuild”) is sufficient to support a finding that a vehicle is not covered by the certificate. This is true whether or not the emission performance of the vehicle *actually* is affected.⁶ The penalty for the sale of a vehicle which is not covered by a certificate of conformity is a maximum of \$25,000 per vehicle.⁷

With respect to heavy-duty trucks, § 206(g), as amended in 1977, permits manufacturers to pay a nonconformance penalty in lieu of certifying a class to the emission standards established by the Agency.⁸ The Agency promulgated regulations that establish the formula for computing nonconformance penalties. This formula is designed to eliminate any economic benefit which a manufacturer might derive by virtue of the savings on research, engineering, and hardware as a result of

²The practice of issuing “advisory circulars,” setting forth procedures and requirements without formal notice and opportunity for comment, has never been challenged by the industry, although it can be argued that the practice is not consistent with rulemaking requirements. That manufacturers cannot introduce their new model lines until they have been certified often forces manufacturers to accept EPA’s requirements with minimal challenge.

³There are other certification procedures for determining durability, such as the alternative durability program for light-duty vehicles and light-duty trucks using production vehicles, *see, e.g.*, 40 C.F.R. § 86.085-13, and the more flexible procedures for generating light-duty truck and heavy-duty engine deterioration factors. *See, e.g.*, 40 C.F.R. § 86.085-22(d)(2).

⁴The Clean Air Act and EPA’s implementing regulations require that vehicles intended to be sold at high altitudes be specially certified to meet the standards at the high altitude. 40 C.F.R. § 86.087-30. Vehicles certified at sea level typically will have higher emissions at higher altitudes because the reduced amount of oxygen at higher altitudes causes a higher air-fuel ratio. EPA defines any altitude above 4,000 feet above sea level to be a high altitude. 40 C.F.R. § 86.087-30(a)(5)(iii).

⁵42 U.S.C.A. § 7522(a)(1). There is a limited exception for importation by individuals of nonconforming vehicles under joint EPA and Treasury Department regulations insuring that the vehicles are brought into compliance. 42 U.S.C.A. § 7522(b)(2). However, this exception has been made extremely narrow through regulations permitting importation of a nonconforming vehicle only by an independent commercial importer, who must have the vehicle modified and tested to show compliance with emission standards for five years or 50,000 miles (whichever comes first) after sale of the vehicle to the ultimate purchaser or after release to the owner following the modification and testing. 52 Fed. Reg. 36136 (1987). The D.C. Circuit has upheld these regulations. *Anderson Shipping Co. v. EPA*, No. 87-1705 (D.C. Cir. 1988).

⁶*United States v. Chrysler Corp.*, 591 F.2d 958, 9 Env’tl. L. Rep. (Env’tl. L. Inst.) 20091 (D.C. Cir. 1979).

⁷Clean Air Act §§ 203(a)(1), 205, 42 U.S.C.A. §§ 7522(a)(1), 7524.

⁸42 U.S.C.A. § 7525(g).

not having to conform with the standards.⁹

Manufacturers have accordingly instituted quality control procedures to avoid misbuilds. EPA has also established a program of inspections to assure that data and information submitted by manufacturers during the certification process are accurate and valid.¹⁰ In 1972, Ford Motor Company paid a fine of \$7 million after it was discovered that the company had submitted false certification information to EPA.

While certification was the predominant enforcement mechanism relied upon in the early 1970s, it became evident that certification of prototype designs was not necessarily a good barometer of the emissions performance of in-use production vehicles. The conditions of certification mileage accumulation involve use of standard fuels, trained drivers, and expert maintenance, and fail to reflect the effects of time, weather, and in-use road conditions. Thus, while the certification program has adopted requirements designed to reduce in-use emissions (most notably, the parameter adjustment regulations),¹¹ the Agency shifted emphasis to assembly line and in-use enforcement programs in the late 1970s.¹²

§ 12:128 Compliance enforcement—Production line testing

Section 206(b) expressly authorizes EPA to test actual production vehicles on the assembly line to determine whether they are conforming to standards.¹ If a prescribed percentage of vehicles do not conform to standards, EPA may revoke or suspend the certificate, thereby prohibiting the manufacturer from introducing the line of vehicles into commerce.² This was one of the provisions inserted in the 1970 Amendments to the Clean Air Act because of the recognition by Congress that production vehicles were exceeding standards, even though the prototype vehicles had met standards.³ This provision, constituting an explicit Congressional recognition that EPA is not bound by its certification of a prototype, countered arguments that manufacturers should not be held responsible for the failure of certified designs to comply with standards in actual use.

Known as the Selective Enforcement Auditing (SEA) program, EPA typically issues under it a test order to a manufacturer. EPA inspectors then visit the manufacturer's assembly line and test facility to observe the selection of vehicles

⁹50 Fed. Reg. 53454-68 (1985) (40 C.F.R. §§ 86.1105-87, 86.1113-87, 86.1115-87).

¹⁰Pursuant to section 208, 42 U.S.C.A. § 7542, EPA may require manufacturers to make records available for EPA inspection.

¹¹The parameter adjustment regulations require that certain easily accessible engine adjustments, any one of which can have a significant effect on emissions, either be sealed or set so that adjustment in any direction will not cause emissions to exceed standards. 40 C.F.R. § 86.085-22(3).

¹²EPA has proposed regulations that would revise the certification program to reduce costs and place significantly greater emphasis on in-use performance. *See* 63 Fed.Reg. 39654 (July 23, 1998).

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¹Section 206(b)(1), 42 U.S.C.A. § 7525(b)(1), provides in part: "In order to determine whether new motor vehicles or new motor vehicle engines being manufactured by a manufacturer do in fact conform with the regulations with respect to which the certificate of conformity was issued, the Administrator is authorized to test such vehicles or engines." Section 206(b)(2)(A)(i), 42 U.S.C.A. § 7525(b)(2)(A)(i), further provides that "[i]f, based on tests conducted under paragraph (1) on a sample of new vehicles or engines, . . . the Administrator determines that [such] vehicles or engines . . . do not conform with the regulations . . . and requirements of section 7521 (a)(4), he may suspend or revoke such certificate . . . and shall so notify the manufacturer."

²*See* 40 C.F.R. §§ 86.601 to 86.614 (SEA regulations for light-duty vehicles); 40 C.F.R. §§ 86.1001-84 to 86.1014-84 (SEA regulations for heavy-duty vehicles).

³*See* 1 Senate Comm. on Pub. Works, 93d Cong., 2d Sess., A Legislative History of the Clean Air Act Amendments of 1970 134 (Comm. Print 1974) (Exhibit 1 to remarks of Sen. Muskie); *id.* at 200 (Conference Report, discussion of sections 206, 207).

and the conduct of the tests. Vehicles are selected and tested according to a statistical scheme to determine, with a prescribed degree of confidence, whether EPA's assembly line criteria are met.

Section 206(b) does not specify the percentage of vehicles exceeding emissions or the average emissions level which will give rise to a suspension or revocation order. After significant debate, EPA adopted a 40 percent Acceptable Quality Level (AQL); unless the Agency has a high degree of confidence that the failure rate of any class is greater than 40 percent, the class "passes" the assembly line test. Given statistical variability, a 40 percent AQL approximates a requirement that the average vehicle meets standards. In adopting this requirement, however, the Agency expressly stated that it was not adopting "averaging" for purposes of assessing in-use compliance.⁴

§ 12:129 Compliance enforcement—In-use vehicle compliance—Warranty

The Act also establishes mechanisms by which compliance of vehicles actually in use can be enforced. Under section 207(a),¹ the manufacturer warrants to owners that each new car: (1) is designed, built, and equipped to conform with emission requirements at the time of sale; and (2) is free from defect in materials or workmanship which would cause the car to exceed emissions standards over its "useful life" period.

Under section 207(b), the manufacturer must warrant that if a vehicle fails an emission test in a state inspection and maintenance (I/M) program which imposes a sanction for such failure, and the vehicle has been maintained and used in accordance with the manufacturer's recommended instructions, then the manufacturer will repair the vehicle at no cost to the owner. The warranty provisions create a relationship between the manufacturer and vehicle owner, although pursuant to section 203² EPA has the power to require manufacturers to honor warranty claims and to prosecute manufacturers for failure to honor valid claims. EPA has promulgated regulations to implement section 207(b).³ These regulations, *inter alia*, create conditions under which owners are assumed to have valid warranty claims and place upon the manufacturers the burden of showing why a claim is not valid.

A key issue in implementing the warranty provisions concerns their potential anticompetitive impacts on aftermarket parts manufacturers. Congress specifically directed the Agency to establish an aftermarket parts certification program in the 1977 Clean Air Act Amendments.⁴

EPA's implementation of the warranty and parts certification program has been a difficult process. As discussed elsewhere,⁵ the development of an appropriate short test for use in state I&M programs (to trigger the section 207(b) warranty) was an analytically difficult and time consuming task. In 1980, EPA issued regulations specifying the short test and a parts certification program. Along with the section 207(b) warranty procedures, all three sets of regulations were challenged by automobile and parts manufacturers in separate actions. In 1983, the Court of Appeals for the D.C. Circuit upheld the regulations, although it struck down certain aspects of the parts certification regulations. EPA had included a requirement that

⁴See 41 Fed. Reg. 31475 (1977).

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¹42 U.S.C.A. § 7541(a).

²42 U.S.C.A. § 7522.

³See 40 C.F.R. §§ 85.2101 to 85.2122, App.

⁴Clean Air Act § 207(a)(2), 42 U.S.C.A. § 7541(a)(2).

⁵See § 12:148.

auto manufacturers honor claims where certified parts were found to be the cause of a short test failure, and then seek reimbursement from the part manufacturer. The court held that this was an unworkable scheme in light of the absence of any dispute resolution mechanisms. The court also remanded the rules to the Agency for its arbitrary and capricious failure to include add-on and modified parts in the parts certification program.⁶

§ 12:130 Compliance enforcement—In-use vehicle compliance—Recall

Perhaps the most visible EPA Title II enforcement program is the recall program. Section 207(c)¹ empowers the Administrator to order recall of any class of vehicles if a determination is made that a substantial number, although properly maintained and used, do not conform with standards when in use throughout their useful life.² Thus, despite receiving certification and despite demonstrating compliance during production line tests, manufacturers are still liable for recall if their vehicles are determined not to conform throughout their useful life.

Under the authority of section 207(c), the Agency has put in place comprehensive surveillance and confirmatory testing programs designed to detect emission problems. Typically, EPA will target a class of vehicles for surveillance testing. The Agency will procure a sample of five or ten vehicles, adjust the vehicles to the manufacturer's recommended specifications and conduct FTP tests. If the surveillance testing reveals a high noncompliance rate for any of the standards, EPA will notify the manufacturer of the results and schedule the class for confirmatory testing. In the confirmatory testing program, the Agency implements a rigorous vehicle selection process designed to produce a random, unbiased sample of properly maintained vehicles which will support statistical inferences regarding emission levels.³ This testing then becomes the basis for an Agency determination that the class is in nonconformity and that an order be issued to the manufacturer to submit a plan to remedy the nonconformity.

One issue that has not been resolved concerns the meaning of the term "substantial number" as used in section 207(c). In the one recall for which the finding of nonconformity was contested, the term "substantial number" was not an issue because of the extremely high failure rate of the vehicles involved.⁴ The Agency has not expressed a formal view on this issue, although most ordered recalls have been

⁶Speciality Equip. Market Ass'n v. Ruckelshaus, 720 F.2d 124, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21080 (D.C. Cir. 1983).

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¹42 U.S.C.A. § 7541(c).

²The statute does not use the term "recall." It speaks of submission to EPA of a plan to remedy nonconformities in a class of cars, at the manufacturer's expense, and of notification of the nonconformities to car owners. These statutory duties, when taken together, describe what is commonly known as a recall. EPA has issued regulations which are specifically labeled "Recall Regulations." 40 C.F.R. §§ 85.1801 to 85.1807.

³The rigor of vehicle sampling maintenance and testing has grown more sophisticated over time. Attempts by EPA in the early 1970s to produce test data that could support recall orders were unsuccessful, owing to the Agency's failure to implement sufficient quality control procedures. By the Agency's own analysis, their early data could not withstand a legal challenge. Learning from that early failure, EPA has improved its vehicle selection and testing methods: The use of small vehicle samples to statistically project that a substantial number of vehicles is in nonconformity has been upheld. Chrysler Corp. v. EPA, 631 F.2d 865, 891-92, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20595, 20609-10 (D.C. Cir. 1980). In that case, however, the number of vehicles exceeding the standard was extremely high (85 percent and 90 percent in two testing programs, respectively) and the average emissions level was two to four times the standard.

⁴Chrysler Corp. v. EPA, 631 F.2d 865, 892, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20595, 20609 (D.C. Cir. 1980).

based either on the Agency's ability to project, with substantial confidence, that the average emissions level of the class is well over the standard, or the finding of a defective component causing emissions failures in a large number of vehicles. For classes of vehicles whose average emission levels are close to, although above the standards, and which have no apparent defective component, the adequacy of the test sample, the validity of each test, the meaning of substantial number, and the confidence criteria for supporting statistical inferences all become more important.

The recall provision is an incentive to the manufacturer to plan and to produce emission control systems that will be both durable and effective in actual use; the recall provision also is a remedy for the public if the manufacturer fails in this task. The Agency has used this provision to increase the accountability of auto manufacturers. In 1978, EPA ordered Chrysler to recall approximately 208,000 1975 vehicles. The Agency alleged that the vehicles exceeded the CO standard, primarily owing to misadjustment of the idle mixture screws.⁵ Chrysler argued that under the "proper maintenance and use" language of section 207(c), it could not be held responsible for recall if its vehicles were not set to recommended specifications when tested. The Agency argued that the design of the carburetor made misadjustment very easy, that the poor driveability of the cars provided an incentive to readjust the carburetors,⁶ and that Chrysler's specified maintenance procedures were difficult; all these factors combined to foster the likelihood of misadjustments. Despite owners' attempts to secure proper maintenance, the incidence of misadjustment was high and Chrysler, the Agency argued, should bear liability for the resulting nonconformities.

The recall order was the subject of a two year formal adjudicatory hearing. After the order was sustained by the Administrative Law Judge and the EPA Administrator, it was challenged by Chrysler in the U.S. Court of Appeals for the District of Columbia. Judge J. Skelly Wright, writing for a unanimous panel, upheld the order.⁷ The court held in *Chrysler Corp. v. EPA* that the Agency could impose recall liability on a manufacturer if the Agency could establish that the manufacturer's design caused the nonconformity. Thus, the criterion in section 207(c), that the vehicles be properly maintained, could not act as a bar to a recall if the manufacturer's actions caused the vehicles to be misadjusted and, therefore, not in a properly maintained condition.⁸

The court interpreted the recall provision as placing "the burden on the auto manufacturers to design an emission control system that would effectively reduce auto emissions despite the poor performance of the maintenance industry."⁹ In reviewing the facts of the case before it, the court agreed with EPA's finding that "misadjustments were encouraged or fostered by the design of Chrysler's emission control system and its carburetor adjustment procedures . . . and that the service industry's contribution is the inevitable by-product of Chrysler's emission system design and service procedures."¹⁰ Furthermore, the court agreed that the record

⁵Because of the relationship of the catalyst and the idle mixture, slight adjustments to the idle mixture, which affect the air-fuel ratio to make it more "rich," will cause significant increases in CO emissions.

⁶In these vehicles, enriching the idle mixture was one way to improve driveability. Traditionally, this was a short cut used by mechanics to address driveability complaints.

⁷*Chrysler Corp. v. EPA*, 631 F.2d 865, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20595 (D.C. Cir. 1980).

⁸*Chrysler Corp. v. EPA*, 631 F.2d 865, 888-89, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20595, 20608 (D.C. Cir. 1980).

⁹*Chrysler Corp. v. EPA*, 631 F.2d 865, 887, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20595, 20607-08 (D.C. Cir. 1980).

¹⁰*Chrysler Corp. v. EPA*, 631 F.2d 865, 893, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20595, 20611 (D.C.

showed that Chrysler foresaw or should have foreseen the misadjustment problems.¹¹ Finally, the decision also discounted the argument that the cited design defects and maintenance procedure problems were not uncovered by EPA during the certification process; the Agency's failure to do so did not relieve Chrysler of its responsibilities under section 207(c).¹²

In summary, liability was premised on: (1) the actions of Chrysler as the principal cause of the nonconformity; (2) that Chrysler foresaw or should have foreseen the problem; and (3) that Chrysler failed to take available steps to obviate the nonconformity.¹³

Chrysler Corp. heightens the dilemma created for the auto industry by the Agency's historical approach to standard setting, certification, and in-use compliance. In the early 1970s EPA placed nearly all of its emphasis on certification. In particular, decisions by EPA and Congress regarding the auto emission standards to be met by the industry were based on determinations of whether the vehicles could be certified to meet those standards. The ability of a vehicle to meet the standards in actual use for its useful life was not effectively evaluated during the standard setting deliberations in Congress or at EPA. The auto companies, reacting to the emphasis of the Agency, placed their own priority on certification. As EPA came to recognize that certification was not necessarily a good indicator of in-use performance, it focused more closely on implementing the in-use enforcement provisions of the Act.

The consequence of *Chrysler Corp.* ostensibly is to place the burden on the manufacturer to, where possible, design its vehicles to withstand the effects of foreseeable in-use conditions. However, the decision leaves open some obvious questions for both manufacturers and EPA. In the 1980s, emission control systems became increasingly sophisticated as the emission standards became increasingly stringent. Yet in-use driving conditions still may have dramatic effects on emissions performance. The Agency encountered a number of situations where the generally available unleaded gasoline in use had higher concentrations (although, within legal limits) of lead than the fuel used during certification. The higher lead concentrations cause just enough catalyst degradation to result in emission nonconformities. Nevertheless, the Agency's argument is that, regardless of the fuel used in certification, a manufacturer should foresee that lead concentrations in fuel may at least be at the legal limit, and design its emission controls to withstand those concentrations. The key to this rationale is that the manufacturer can control its design, even if it cannot control the amount of lead in unleaded gasoline.

Other issues have been raised regarding the implementation of the recall program which touch upon broad policy considerations. In one such issue, the D.C. Circuit Court of Appeals upheld the Agency's authority to require that vehicles subject to a recall order be repaired, even if the cars have exceeded their useful life,¹⁴ so long as the recall determination was based on vehicles still within their useful life.¹⁵ This reduces the incentive on the part of manufacturers to delay recall proceedings in the hope that more vehicles will fall out of the recall class.

Cir. 1980).

¹¹*Chrysler Corp. v. EPA*, 631 F.2d 865, 894-95, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20595, 20611-12 (D.C. Cir. 1980).

¹²*Chrysler Corp. v. EPA*, 631 F.2d 865, 895, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20595, 20612 (D.C. Cir. 1980).

¹³*Chrysler Corp. v. EPA*, 631 F.2d 865, 896, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20595, 20613 (D.C. Cir. 1980).

¹⁴The useful life for vehicles is specified in Clean Air Act § 202(d), 42 U.S.C.A. § 7521(d).

¹⁵*General Motors Corp. v. Ruckelshaus*, 742 F.2d 1561, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20704 (D.C. Cir. 1984) (en banc).

With regard to another, related issue, in 1982 EPA approved a remedial repair plan submitted by General Motors that did not involve repair of 1979 Pontiacs subject to a recall order. Instead, General Motors agreed to be bound by a more stringent standard, both for certification *and* in-use, for a certain number of 1981 and future model year Pontiac vehicles. This plan would effectively “offset” the excess emissions of the 1979 vehicles. Public interest groups contested the approval of the offset plan, contending that the statute authorizes the Administrator to approve a plan only if it remedies or actually *repairs* the nonconformity in the class subject to the order. The D.C. Court of Appeals agreed, and rejected EPA’s approval of the plan on those grounds in *Center for Auto Safety v. Ruckelshaus*.¹⁶ In curiously ambiguous language, however, the Court stated that it was not considering the Agency’s use of enforcement discretion in taking into account an offset commitment.¹⁷ This language may suggest that the Agency can allow a manufacturer to implement an offset plan prior to issuing a formal recall order. It also can be argued, however, that once sufficient facts are available to warrant a recall determination, the statute places on the Agency a mandatory duty to issue a formal recall order. Under this reasoning, the Agency could not withhold such an order merely to avoid the statutory requirement of the submission of a remedial plan. If the manufacturer does not recall its vehicle in response to a formal recall order, the Agency’s recourse is to file a complaint in district court to enjoin the manufacturer’s refusal to comply or to seek civil penalties. One way of permitting an offset plan would be to file such a complaint and then file a consent decree which settles the case through implementation of an offset plan. Such a decree would, of course, be subject to court review and comment by interested intervenors.

The offset plan decision raises numerous public policy questions. On the one hand, it makes it more likely that a manufacturer will be forced to correct failures in its emission control systems and therefore take greater precautions to avoid such failures. On the other hand, it reduces the flexibility of EPA and the manufacturers to respond to situations where repair of the nonconforming class is not feasible or is so costly as to be infeasible, or is not likely to be effective for other reasons, such as where the vehicles are too old or the repair adversely affects fuel economy or driveability. These factors would tend to reduce the number of owners who might return their vehicles for repair, which would frustrate the purpose of the recall order.

§ 12:131 Compliance enforcement—Tampering

Section 203(a)(3)¹ makes it unlawful for any person to knowingly render inoperative or remove any emission control device or to cause such acts. Formerly, this provision applied only to manufacturers, but the 1977 amendments extended this prescription to auto mechanics and fleet owners.² EPA has brought numerous cases against mechanics and fleet owners under this section. EPA is not required to prove that the person engaged in the “tampering” knew that he or she was removing or rendering inoperative an emission control device, but only to show that the activity was a knowing activity; that the person knew that the equipment in question was

¹⁶*Center for Auto Safety v. Ruckelshaus*, 747 F.2d 1, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20863 (D.C. Cir. 1984).

¹⁷*Center for Auto Safety v. Ruckelshaus*, 747 F.2d 1, 6, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20863, 20866 (D.C. Cir. 1984).

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¹42 U.S.C.A. § 7522(a)(3).

²Clean Air Act §§ 203(a)(3)(B), 203(a)(4), 42 U.S.C.A. §§ 7522(a)(3)(B), 203(a)(4).

being removed or rendered inoperative.³

EPA attempted to hold manufacturers of parts used to defeat emission controls, such as straight pipes used to replace catalytic converters, liable under the tampering provision. Although section 203(a)(3) does not apply specifically to parts manufacturers, any “person” “causing” tampering is liable. Thus, at least one appeals court has upheld the Agency’s authority to proceed under an administrative search warrant to obtain a parts manufacturer’s records.⁴

§ 12:132 Fuels and fuel additives

The regulation of fuels and fuel additives for use in motor vehicles is governed by section 211 of the Clean Air Act.¹ These provisions establish a broad statutory framework for ensuring that fuels and fuel additives do not directly or indirectly contribute to the air quality problems the Clean Air Act is designed to address.

Section 211(a) of the Act simply establishes a registration requirement as a prerequisite to marketing fuels or fuel additives. The substantive requirements of registration are set out in section 211(b)—essentially all that is required is that the manufacturer must provide the commercial name and composition of the fuel or fuel additive. Under section 211(b), EPA may also require health effects testing and any additional information relevant to a determination of emissions resulting from use of a fuel or fuel additive. The failure of EPA to implement sections 211(b)(2)(A) and 211(b)(2)(B) strictures concerning health effects testing protocols and analytical emissions determinations led Congress, in the 1977 Clean Air Act Amendments, to add section 211(e),² which requires the Administrator to promulgate regulations by August, 1978, under the authority of sections 211(b)(2)(A) and (B), for fuels and fuel additives already registered, as well as for any new fuel or additive prior to registration.

Section 211(c) allows EPA to control or prohibit a fuel or fuel additive on one of two bases. Under section 211(c)(i)(A), EPA may regulate on the basis that the emission products of a fuel or fuel additive cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare; that is, the existence of a direct effect on health or welfare. Section 211(c)(1)(B) permits regulation on the basis that the emission products of a fuel or additive will impair emission controls already in use, or which will be in use in a reasonable time were such regulations promulgated. Section 211(c)(4) contains a preemption of state action where EPA has acted or has determined that an action is necessary. Section 211(f) establishes a waiver provision as a prerequisite to marketing a fuel or additive. Generally, new fuels or additives not substantially similar to gasoline used in certifying 1975 or later vehicles under section 206 may not be marketed unless a waiver is granted by EPA. The Administrator may grant a waiver if the manufacturer establishes that the fuel or fuel additive will not cause or contribute to a failure of any vehicle to comply with applicable emission standards. If the Administrator does not grant or deny a waiver request within 180 days, the waiver is granted by operation of law.

Section 211(d) sets out a \$25,000 per day civil penalty for violations of subsection (a) or (f) or of regulations under subsection (b).

³United States v. Haney Chevrolet, Inc., 371 F. Supp. 381, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20474 (M.D. Fla. 1974).

⁴Ced’s, Inc. v. EPA, 745 F.2d 1092, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20869 (7th Cir. 1984).

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¹42 U.S.C.A. § 7545.

²42 U.S.C.A. § 7545(e).

§ 12:133 Fuels and fuel additives—Registration

The registration program is straightforward. EPA has promulgated regulations which essentially mirror the requirements of section 211(b):¹ The manufacturer of a fuel must provide the commercial name of the fuel, the name of any additive manufacturer for additives in the fuel, and the concentration and purpose of any additive; additionally, an additive manufacturer must supply the chemical composition of the additive.² The question has arisen as to whether the registration requirements apply to additives in a motor oil; to wit, whether a motor oil is a fuel for the purposes of section 211. In *Lubrizol v. EPA*,³ the D.C. Circuit held that oil additives were excluded from the ambit of the regulations. The court reasoned that the plain language of section 211, coupled with the legislative history, showed that Congress specifically intended fuel additives to be included and demonstrated an intent to exclude other potential pollution sources, such as engine oil additives.⁴

§ 12:134 Fuels and fuel additives—Effect on emission controls

In 1973, EPA formally determined that one emission control system, “the catalytic converter, would be in general use in the 1975 model year.”¹ The resultant regulations under section 211(c)(1)(B) were designed to address one particular problem with respect to leaded fuels: “Lead emissions ‘poison’—i.e., render inactive—the catalytic converter devices on which the automobile industry is relying to reduce exhaust emissions of hydrocarbons, carbon monoxide, and oxides of nitrogens to the levels mandated for new cars by Section 202 of the Clean Air Act.”² These regulations in essence provided a three-tiered approach to dealing with this problem: (1) regulations affirmatively requiring the marketing of unleaded gasoline at retail outlets with over a certain volume of business;³ (2) regulations to prevent both the intentional and inadvertent introduction of leaded gasoline into a vehicle requiring unleaded gasoline, through signs and labels at the station,⁴ labels on the vehicles themselves which noted the use of unleaded fuel only,⁵ and restrictions on nozzle sizes coupled with a required restricted filler inlet on the vehicles requiring unleaded fuel,⁶ as well as a direct prohibition on a retailer introducing leaded gasoline into a vehicle requiring unleaded gasoline;⁷ and (3) a system of liability for the introduction of purportedly unleaded gasoline contaminated with excess lead into a vehicle requiring unleaded gasoline.⁸ Under section 211(n) of the Clean Air Act, leaded gasoline was banned for highway use, effective December 31, 1995.

Prior to regulation under section 211(c)(1)(B), section 211(c)(2) adds a require-

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¹42 U.S.C.A. § 7545(b).

²40 C.F.R. §§ 79.1 to 79.33.

³*Lubrizol v. EPA*, 562 F.2d 807, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20652 (D.C. Cir. 1977).

⁴*Lubrizol v. EPA*, 562 F.2d 807, 817-19, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20652 (D.C. Cir. 1977).

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¹38 Fed. Reg. 1254 (1973).

²*Amoco Oil Co. v. EPA* [*Amoco I*], 501 F.2d 722, 4 Env'tl. L. Rep. (Env'tl. L. Inst.) 20397 (D.C. Cir. 1974).

³40 C.F.R. § 80.22(b).

⁴40 C.F.R. § 80.22(b).

⁵40 C.F.R. § 80.24(a).

⁶40 C.F.R. §§ 80.22(f), 80.24(b).

⁷40 C.F.R. §§ 80.22(a), 80.23(c).

⁸*See Amoco Oil Co. v. EPA* [*Amoco I*], 501 F.2d 722, 728, 4 Env'tl. L. Rep. (Env'tl. L. Inst.) 20397, 20398-99 (D.C. Cir. 1974).

ment that certain findings be published.⁹ Section 211(c)(2)(B) requires:

consideration of available scientific and economic data, including a cost benefit analysis comparing emission control devices or systems which are or will be in general use and require the proposed control or prohibition with emission control devices or systems which are or will be in general use and do not require the proposed control or prohibition.

To that requirement section 211(c)(2)(C) adds the mandate that before prohibiting the marketing of a fuel or additive the Administrator must find that “such prohibition will not cause the use of any other fuel or fuel additive which will produce emissions which will endanger the public health or welfare to the same or greater degree than the use of the fuel or fuel additive proposed to be prohibited.” These findings, however, do not need to be “specific in the sense of being detailed or voluminous.”¹⁰ The Agency need not publish distinct findings with respect to every judgment made in the course of the regulations: “By showing that the fuel regulation is necessary to meet the section 202 schedule for reduced emissions, and that the proposed regulation will not cause use of an equally harmful fuel or additive, the Administrator’s statement has, in our judgment, met the ‘findings’ requirements in section 211(c)(2)(B) and (C).”¹¹

The unleaded gasoline regulations did not just regulate leaded gasoline in the strict sense, but actually required the sale of unleaded gasoline. In *Amoco Oil Company v. EPA* [*Amoco I*],¹² the D.C. Circuit rejected the argument that the Clean Air Act does not empower EPA to require marketing of a fuel: The term “control” in section 211(c)(1)(B) encompasses the power to promote the availability of fuels needed for proper operation of emission control devices.¹³ To condition the sale of leaded gasoline on the sale of unleaded gasoline, the court reasoned, is one way to control the sale of leaded gasoline.¹⁴

The liability provisions for sale of lead-contaminated unleaded gasoline initially imposed vicarious liability on a refiner whose trademark was displayed at the retail outlet;¹⁵ if no refiner’s brand was displayed, liability attached to any distributor who sold the retailer gasoline from which the contaminated product was taken.¹⁶ Upon challenge, the court did not take exception to the imposition of a rebuttable presumption of liability on refiners and distributors. The court held, however, that a distributor is entitled to show as an affirmative defense that it did not cause the contamination. Moreover, a refiner may not be held liable if it can show it did not

⁹See *Amoco Oil Co. v. EPA* [*Amoco I*], 501 F.2d 722, 728, 732, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20397, 20398–99, 20401 (D.C. Cir. 1974).

¹⁰See *Amoco Oil Co. v. EPA* [*Amoco I*], 501 F.2d 722, 728, 734, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20397, 20398–99, 20402 (D.C. Cir. 1974).

¹¹See *Amoco Oil Co. v. EPA* [*Amoco I*], 501 F.2d 722, 728, 739, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20397, 20398–99, 20405 (D.C. Cir. 1974).

¹²*Amoco Oil Company v. EPA*, 501 F.2d 722, 739, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20397, 20405 (D.C. Cir. 1974).

¹³*Amoco Oil Company v. EPA*, 501 F.2d 722, 744, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20397, 20408 (D.C. Cir. 1974).

¹⁴*Amoco Oil Company v. EPA*, 501 F.2d 722, 744, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20397, 20408 (D.C. Cir. 1974). This appears to leave open the question of whether gas stations could be required to have available some alternative fuel, such as methanol, if that fuel is used in some vehicles to meet emissions standards. In other words, the question is whether gasoline could be controlled in this manner under section 211(a), 42 U.S.C.A. § 7545(a).

¹⁵*Amoco Oil Co. v. EPA* [*Amoco I*], 501 F.2d 722, 748, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20397, 20410 (D.C. Cir. 1974).

¹⁶*Amoco Oil Company v. EPA*, 501 F.2d 722, 739, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20397, 20405 (D.C. Cir. 1974).

cause the contamination,¹⁷ and that the contamination could not have been prevented by a reasonable program of contractual oversight.¹⁸

Following the decision in *Amoco I*, EPA redrafted the regulatory liability provisions. Under the amended regulations, a refiner whose brand was displayed at the retail outlet would still be strictly liable for a contamination caused by a retailer who leased his station from the refiner.¹⁹ In striking down this last vestige of strict vicarious liability from regulation, the court in *Amoco Oil Co. v. EPA* [*Amoco II*] found that “the authority given to the EPA by Congress did not vest the EPA with power to supplement those [common law] rules with the doctrine of strict liability.”²⁰ Applying common law principles that restrict vicarious liability on a showing of control over the premises, the court stated that the “mere fact that a retailer sells a refiner’s products and leases his facilities from the refiner are not by themselves such compelling evidence of control by the refiner as to justify conclusive imputation to the refiner of the retailer’s negligence.”²¹

Enforcement of the unleaded gasoline regulations is premised on section 211(d),²² which provided for forfeiture of \$10,000 for each and every day of the continuance of violation. This section further provides that, upon application by the violator, the Administrator “may remit or mitigate any forfeiture and determine the facts upon all such applications.”²³ EPA, from the inception of the unleaded gasoline regulations in 1975, interpreted without challenge this provision to authorize administrative penalty assessment procedures until 1982. Under these procedures, formal hearings before an Agency Presiding Officer were permitted, with appeals to EPA Regional Administrators.²⁴ Hearings were to be held on the record in accordance with appropriate safeguards of due process.²⁵

In a decision of the Agency’s Judicial Officer, the Agency reversed its interpretation of section 211(d) in 1982. In *In re Transportation, Inc.*,²⁶ an order had been issued by an Administrative Law Judge which denied a motion to dismiss administrative complaints brought pursuant to rules for the assessment of civil penalties. On appeal, the Judicial Officer reversed, finding that the administrative procedures authorizing EPA to hold formal hearings for the purpose of assessing liability for section 211(d) penalties were not authorized by the Clean Air Act. The Judicial Officer noted that section 211(d) only authorized the Agency to reduce penalties for parties against whom penalties had been judicially assessed. The Judicial Officer found that the imposition of the full penalty by the court is mandatory, a position that has thus far been followed by district courts.²⁷ This raises the question, however, as to whether the forfeiture language of section 211(d), read so literally by the

¹⁷*Amoco Oil Company v. EPA*, 501 F.2d 722, 749, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20397, 20411 (D.C. Cir. 1974).

¹⁸*Amoco Oil Company v. EPA*, 501 F.2d 722, 749, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20397, 20411 (D.C. Cir. 1974).

¹⁹*Amoco Oil Co. v. EPA* [*Amoco II*], 543 F.2d 270, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20688 (D.C. Cir. 1976).

²⁰*Amoco Oil Co. v. EPA* [*Amoco II*], 543 F.2d 270, 275, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20688 (D.C. Cir. 1976).

²¹*Amoco Oil Co. v. EPA* [*Amoco II*], 543 F.2d 270, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20688 (D.C. Cir. 1976).

²²42 U.S.C.A. § 7545(d).

²³42 U.S.C.A. § 7545(d).

²⁴40 Fed. Reg. 39962 (1975).

²⁵40 Fed. Reg. 39965 (1975).

²⁶*In re Transportation, Inc.*, Docket No. CAA (211)-27 (1982).

²⁷*See, e.g., United States v. Robinson*, No. 3-84-1606-H (N.D. Texas 1985); *United States v. Gruner*, No. 3-84-1697-R (N.D. Texas 1985).

Judicial Officer, would actually be interpreted by the courts in the manner of traditional forfeiture statutes; namely, that the right to the penalty occurs automatically at the time of violation.²⁸

§ 12:135 Fuels and fuel additives—Health-based standards

Section 211(c)(1)(A) of the Act authorizes the Administrator to regulate fuels or fuel additives that may reasonably be anticipated to endanger public health or welfare. In regulating under this provision, section 211(c)(2)(A) requires the Administrator to consider all relevant medical and scientific evidence. In *Ethyl Corporation v. EPA*,¹ EPA's use of this provision to regulate lead in gasoline because of the adverse health effects associated with lead was upheld. In the process, the court set down certain precepts for regulation under section 211(c)(1)(A). First and foremost, no showing of actual harm is required. The endangerment language was read by the *Ethyl* court as denoting that section 211(c)(1)(A) was a precautionary provision which demanded regulatory action before a perceived threat actually occurs.² As such, the Agency is to evaluate the "reciprocal elements of risk and harm, or probability and severity."³ Public health may be found to be endangered both by a lesser risk of a greater harm and by a greater risk of a lesser harm, depending on the facts of each case.⁴

Given the risk assessment inherent in the endangerment language, the *Ethyl* court further found that the Agency has the flexibility to make policy judgments, and not just to determine questions of fact in support of regulation.⁵ The Agency, in carrying out the preventive nature of this section, may make assessments from conflicting and inconclusive evidence, as long as the assessment is rationally justified.⁶

Finally, section 211(c)(1)(A) does not require a finding that endangerment results from the emissions caused by the fuel or additive alone. Rather, EPA may consider the cumulative impact from other sources of the pollutant in deciding how best to regulate.⁷

It should be noted that in 1977, Congress changed the standard under section 211(c)(1)(A) from "will endanger" to "may reasonably be anticipated to endanger," with the "specific purpose of endorsing the *Ethyl* decision."⁸ In particular, that change was made to endorse the cumulative impact approach, including consider-

²⁸See, e.g., *Ivers v. United States*, 413 F. Supp. 394 (N.D. Cal. 1975), aff'd, 581 F.2d 1362 (9th Cir. 1976). One result of this interpretation of the forfeiture language, if carried to the extreme, could be that a determination of facts in a non-penalty citizen suit would automatically trigger a civil penalty forfeiture.

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¹*Ethyl Corp. v. EPA*, 541 F.2d 1, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20267 (D.C. Cir. 1976).

²*Ethyl Corp. v. EPA*, 541 F.2d 1, 13, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20267, 20272-73 (D.C. Cir. 1976).

³*Ethyl Corp. v. EPA*, 541 F.2d 1, 18, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20267, 20275 (D.C. Cir. 1976).

⁴*Ethyl Corp. v. EPA*, 541 F.2d 1, 18 & n.32, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20267, 20275, n.32 (D.C. Cir. 1976).

⁵*Ethyl Corp. v. EPA*, 541 F.2d 1, 24, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20267, 20279 (D.C. Cir. 1976).

⁶*Ethyl Corp. v. EPA*, 541 F.2d 1, 26-28, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20267, 20280-81 (D.C. Cir. 1976).

⁷*Ethyl Corp. v. EPA*, 541 F.2d 1, 30-31, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20267, 20282-83 (D.C. Cir. 1976).

⁸*Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 514 n.12, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20490, 20493 n.12 (D.C. Cir. 1983).

ation of impact on food and water sources.⁹ The broad scope of permissible regulation by EPA in this area is illustrated by the holdings of *Ethyl Corporation v. EPA*¹⁰ and *Small Refiner Lead Phase-Down Task Force v. EPA*.¹¹

In *Ethyl*, it was argued that EPA must establish an ambient air quality standard for a pollutant prior to regulating that pollutant under section 211. The court found that this argument was without basis in the statute.¹² In a case brought by small refiners challenging the imposition of a uniform lead standard for all refineries,¹³ it was argued that, having set an ambient air quality standard for lead, EPA lacked the authority to control gasoline lead to a greater extent than necessary to meet that standard. This, too, was rejected by the court, which found that national standards under section 211 may be more or less stringent than needed to meet ambient standards in any particular area, and that the ambient standards do not fully protect against non-air sources of lead, such as dirt and dust lead from vehicle exhaust.¹⁴

§ 12:136 Fuels and fuel additives—Preemption

Under section 211(c)(4), if EPA has promulgated a control or prohibition of a fuel or fuel additive, or has published a finding that no control is necessary, a state is generally preempted from prescribing or enforcing its own regulation. The statute sets out three exceptions: (1) the state control is identical to the federal control;¹ (2) the state has received a waiver of preemption under section 209 for motor vehicle standards;² or (3) the state control is part of a state implementation plan under section 110,³ and EPA finds that the control is necessary to achieve the relevant ambient air quality standard.⁴

In *Exxon Corporation v. City of New York*,⁵ the Second Circuit addressed the applicability of the exceptions of section 211 to New York City regulations controlling lead content of gasoline and gasoline volatility. With respect to lead content, the court held that even though federal controls, promulgated in 1976, did not become applicable until 1978, where the federal regulation imposing the controls became effective in 1976 (and thus created substantive obligations), preemption was already in effect.⁶ The court also found that New York's volatility regulation was preempted, notwithstanding the absence of a federal volatility control: "The City has added a

⁹*Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 518 n.25, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20490, 20267 (D.C. Cir. 1983).

¹⁰*Ethyl Corp. v. EPA*, 541 F.2d 1, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20267 (D.C. Cir. 1976).

¹¹*Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20490 (D.C. Cir. 1983).

¹²*Ethyl Corp. v. EPA*, 541 F.2d 1, 54 n.124, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20267, 20296 n.124 (D.C. Cir. 1976).

¹³*See Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 518 n.25, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20490, 20267 (D.C. Cir. 1983).

¹⁴*Small Refiner Lead Phase-Down Task Force*, 705 F.2d 506, 516-18, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20490, 20494-95 (D.C. Cir. 1983).

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¹Clean Air Act § 211(c)(4)(A)(ii), 42 U.S.C.A. § 7545(c)(4)(A)(ii).

²Clean Air Act § 211(c)(4)(B), 42 U.S.C.A. § 7545(c)(4)(B) (only California qualifies). *See Union Oil v. EPA*, 821 F.2d 678 (D.C. Cir. 1987).

³Clean Air Act § 110, 42 U.S.C.A. § 7410.

⁴Clean Air Act § 211(c)(4)(C), 42 U.S.C.A. § 7545(c)(4)(C).

⁵*Exxon Corp. v. City of New York*, 548 F.2d 1088, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20132 (2d Cir. 1977).

⁶*Exxon Corp. v. City of New York*, 548 F.2d 1088, 1092, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20132 (2d

control or prohibition . . . more onerous than that provided by the Administrator.”⁷ The court appeared to rely on EPA’s labeling of the regulation, which read “this part prescribes regulations for the control and/or prohibition of fuels and additives for use in motor vehicle and motor vehicle engines,” apparently inferring an Agency intent to preempt all state regulation of any aspects of fuel and fuel additives.⁸ EPA has since amended its regulations in an attempt to clarify its intent to preempt only those aspects of state regulation explicitly covered by federal regulation.⁹

§ 12:137 Fuels and fuel additives—Fuel waivers

Section 211(f) was added to the Clean Air Act in 1977 by a Congress that was concerned that section 211(c) “could not adequately protect emission systems currently in use from the possible deterioration caused by MMT [a certain fuel additive], or other new fuels or additives, due to the delay associated with procedural safeguards required in section 211(c) proceedings.”¹ This provision essentially shifts the burden to the marketer of a new fuel or additive to show that the fuel or additive is compatible with applicable emission standards.

Section 211(f)(1) prohibits, as of March 31, 1977, the first introduction into commerce, or increase in concentration, of a fuel or additive for use in 1975 or later light-duty vehicles which is not substantially similar to a fuel or additive used in certifying a 1975 or later model year vehicle.² For fuels or fuel additives which are not substantially similar and which were introduced between January 1, 1974 and March 31, 1977, a prohibition on their distribution became effective September 28, 1978. Section 211(f)(2) further bans sale of gasoline with over one-sixteenth gram per gallon manganese. Pursuant to section 211(f)(4), the Administrator is empowered to waive the proscription contained in section 211(f)(1)–(3). To grant a waiver he must determine that the applicant has established that the fuel or fuel additive under consideration will not cause or contribute to the failure of any vehicle to meet emission standards. If the Administrator fails to act within 180 days after receiving a waiver application, however, the waiver is deemed to be granted. Once a waiver has been granted, EPA is without authority to revoke the waiver; EPA may then only act to control or prohibit the fuel or additive under section 211(c), if warranted under that section.³

EPA is not required to deny a waiver on the basis that a fuel or additive causes any increase in emissions. The Administrator may grant a waiver so long as the fuel or additive does not cause or contribute to a failure to achieve compliance with

Cir. 1977).

⁷*Exxon Corp. v. City of New York*, 548 F.2d 1088, 1095, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20132, 20134 (2d Cir. 1977).

⁸*Exxon Corp. v. City of New York*, 548 F.2d 1088, 1095, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20132, 20134 (2d Cir. 1977).

⁹42 Fed. Reg. 25735 (1977) (amending 40 C.F.R. § 80.1).

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¹*Motor Vehicles Mfrs. Ass’n v. EPA*, 768 F.2d 385, 390 n.7, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20764 n.7 (D.C. Cir. 1985).

²Clean Air Act § 211(f)(1), 42 U.S.C.A. § 7545 (f)(1) (the certification is under section 206 of the Act).

³*American Methyl Corp. v. EPA*, 749 F.2d 826, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20005 (D.C. Cir. 1984). However, where EPA mistakenly denies a waiver, the Agency may reinstitute another 180-day period in which to reconsider whether to grant or deny a waiver application; i.e., a mistaken denial does not result in an automatic grant, even after the expiration of the initial 180 days. *Ethyl Corp. v. Browner*, 989 F.2d 522, 23 *Envtl. L. Rep.* (Envtl. L. Inst.) 20689 (D.C. Cir. 1993).

emission standards.⁴ In making such a determination, the Administrator may, on the basis of evidence allowing it to rule out long-term deteriorative effects, grant the waiver without requiring durability tests.⁵ Having established specific statistical criteria for determining whether a fuel or fuel additive will cause a vehicle to exceed standards, however, the Agency cannot deviate from those criteria, absent the articulation of an adequate rationale.⁶ Moreover, the Administrator may not deny a waiver under section 211(f)(4) on the basis of adverse health effects, if the waiver applicant has demonstrated that the fuel or fuel additive will not cause a vehicle to exceed standards.⁷

§ 12:138 The Clean Air Act Amendments of 1990

The Clean Air Act Amendments of 1990 set into place several significant changes to the provisions for controlling mobile source emissions, both from further regulation of the vehicles and of the fuels on which they operate. Congress recognized that “achieving significant reductions in VOC, NO_x, CO, and toxic emissions requires a host of measures, including tighter tailpipe standards, enhanced I/M programs, increasing anti-tampering measures, controls on fuel volatility, encouragement of oxygenated fuels, controls on evaporative emissions and running losses, and controls of nonroad vehicles and engines.”¹ While the overall structure of Title II remains unchanged, several additional layers of requirements were added, incorporating changes in the areas of standard-setting for new vehicles and vehicle engines, including changes in test procedures and establishment of separate in-use standards, more stringent regulation of fuels and fuel additives, control of nonroad vehicles and engines, new enforcement provisions, and a program to encourage the development of so-called clean alternative fuels and clean fuel vehicles.

§ 12:139 The Clean Air Act Amendments of 1990—New vehicle standards

The amendments remove the requirement that heavy-duty engines comply with specified reductions in emissions, subject to revisions based on feasibility or a pollutant specific study. What remains, therefore, is general standard-setting authority under § 202, with two exceptions: a specified heavy-duty NO_x standard, and a particulate standard for urban buses.

Standards for non-methane hydrocarbons (NMHC), CO, NO_x, and particulate matter (PM) are established for various classes of light-duty vehicles and light-duty trucks, including four separate classes of light-duty trucks. For the first time, separate new vehicle standards are established for two different useful life periods: five years or 50,000 miles and ten years/100,000 miles for light-duty vehicles and lighter light-duty trucks, and five years/50,000 miles and eleven years/120,000 miles for the

⁴Motor Vehicles Mfrs. Ass’n v. EPA, 768 F.2d 385, 390, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20764 n.7 (D.C. Cir. 1985).

⁵Motor Vehicles Mfrs. Ass’n v. EPA, 768 F.2d 385, 392, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20764 n.7 (D.C. Cir. 1985). The court declined to speculate as to the precise circumstances which might permit EPA to grant a waiver in the absence of durability data. *Id.* at 393 n.13.

⁶Motor Vehicles Mfrs. Ass’n v. EPA, 768 F.2d 385, 400, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20764 n.7 (D.C. Cir. 1985). The court thus appeared to endorse the use of a statistical test which requires less than a showing of every vehicle continuing to meet standards when operated on the fuel or fuel additive. Under EPA’s program, the test is designed to provide a 90 percent probability of failure of the test if 25 percent or more of the vehicle fleet tested would fail to meet emission standards using the waiver fuel or additive. *Id.* at 399. If the test uses a sixteen-car test fleet, one vehicle can fail to meet the standards and the test would still be passed.

⁷Ethyl Corp. v. EPA, 51 F.3d 1053, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 20817 (D.C. Cir. 1995).

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¹H.R. Rep. No. 490, 101st Cong., 2d Sess. 281 (1990).

heavier light-duty trucks.

Also for the first time, however, the Act sets out different standards for new vehicles (certification standards), and for vehicles being tested in actual use for potential recall liability. These in-use standards embody a recognition that, although it might be reasonable to require vehicles to certify to standards based on full-life capability (*e.g.*, ten years or 100,000 miles for light-duty vehicles), the real-world effects on emissions are such that vehicle manufacturers should be held responsible for a shorter period of time in actual use (*e.g.*, seven years or 75,000 miles for light-duty vehicles).

The Amendments establish a second round of light-duty vehicle and light-duty truck standards—dubbed Tier II standards—which are contingent upon a study of the need for further reductions, cost-effectiveness of further control, and technological feasibility. Based on that study by EPA, EPA may promulgate specified NMHC, CO, and NO_x standards, decide not to promulgate standards, or promulgate alternative standards. But in the event of complete EPA inaction, the Tier II standards set out in the Amendments become effective by operation of law.

Aside from the traditional tailpipe and evaporative emissions, the Amendments require additional controls on motor vehicles. EPA is required to set standards for light-duty vehicle onboard control of refueling hydrocarbon vapors (essentially mandating a closed system on the vehicle to collect the vapors when the vehicle is fueled). However, EPA is also required, in that rulemaking, to consult with the Department of Transportation (DOT) on safety, an issue that had been extremely controversial prior to the amendments. Therefore, while this provision purports to create a mandatory duty, should DOT determine that onboard systems are unsafe, it would appear that any EPA rulemaking would be subject to challenge as arbitrary and capricious.¹

Although standards were already in place for carbon monoxide emissions and evaporative hydrocarbons, Congress was concerned that 1) carbon monoxide emissions at temperatures below the standard test temperature was exacerbating carbon monoxide nonattainment problems, particularly in colder climates, and 2) evaporative standards were not adequately controlling evaporative losses during operation (running losses) and during sustained periods of non-use. The amendments, therefore, require EPA to set two tiers of cold temperature carbon monoxide standards, triggering of the second tier dependent on carbon monoxide nonattainment status as of June 1, 1997. The amendments also require EPA to set standards for running losses and evaporative losses over two or more days of non-use.

Congress was also concerned about the emissions of toxic emissions from motor vehicles, noting that controls on criteria pollutants and regulation of fuels may have aggravated toxic emissions.² As a result, the amendments require EPA to study the need and feasibility of controlling emissions of benzene, formaldehyde, and 1,3-butadiene, and at a minimum set standards for benzene and formaldehyde.

The amendments also require EPA to reexamine the test procedures utilized in

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¹Indeed, on March 27, 1992, EPA issued a final determination not to require onboard systems, predominantly on the basis of a DOT report that onboard systems would have a negative impact on auto safety. The district court dismissed a case brought under section 304 of the Act to compel promulgation of the onboard requirement, holding that exclusive jurisdiction rested with the U.S. Court of Appeals for the D.C. Circuit under section 307(b)(1) of the Act to challenge final Agency action. *NRDC v. Reilly*, 788 F. Supp. 268 (E.D. Va., April 1, 1992). However, upon review the D.C. Circuit held that EPA's decision not to promulgate onboard vapor recovery standards exceeded the Agency's statutory authority, and the court ordered EPA to promulgate standards. *NRDC v. Reilly*, 983 F.2d 259, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20549 (D.C. Cir. 1993).

²H.R. Rep. No. 490, 101st Cong., 2d Sess. 281 (1990).

certifying that new vehicles comply with applicable standards. EPA is required to incorporate the short test used in vehicle inspection and maintenance programs under Part D of Title I. EPA is also charged with a review of test procedures to ensure that the certification tests reflect actual driving conditions.

§ 12:140 The Clean Air Act Amendments of 1990—In-use requirements

As noted above, the amendments create a bifurcated system of certification requirements and in-use requirements. Most notably, for those light-duty vehicles subject to a ten-year or 100,000 miles useful life period for certification purposes, in-use compliance testing is limited to seven years or 75,000 miles, with the more stringent numerical standards phased in more gradually for in-use purposes than for certification purposes. For light-duty trucks subject to a 11 years/120,000 miles useful life, in-use compliance testing is limited to 7 years/90,000 miles.

Warranty requirements are also segregated from otherwise applicable useful life periods. For the catalytic converter, electronic emissions control unit, and the onboard diagnostic device required to detect emission control failures, the warranty period is eight years or 80,000 miles. However, for other components, the warranty is limited to 2 years/24,000 miles.

§ 12:141 The Clean Air Act Amendments of 1990—Nonroad vehicles

Prior to the 1990 amendments, nonroad vehicles and engines (such as construction vehicles) were uncontrolled. The amendments require EPA to study emissions from nonroad engines and vehicles, and allow EPA to set standards if emissions contribute significantly to air pollution. EPA is required to set standards if emission contribute significantly to ozone or carbon monoxide levels in more than one nonattainment area, and for emissions from locomotives and locomotive engines.

§ 12:142 The Clean Air Act Amendments of 1990—Fuels and fuel additives

The amendments mandate several changes to the section 211 requirements for fuels and fuel additives. In keeping with the trend toward including more specific requirements in the legislation, the amendments contain limits for diesel fuel sulfur content and gasoline volatility. Section 211 is extended to apply to fuels used in nonroad engines and vehicles, and the prohibition on new fuels or additives (subject to an EPA waiver) is expanded from fuels for general use in light-duty vehicles to fuels for use “by any person,” (*i.e.*, including over-the-counter additives) for any vehicles or engines.

The preemption provision of section 211 is narrowed in scope. A state is only preempted from regulating a specific characteristic or component of the fuel or additive if that characteristic or component is federally regulated (effectively overruling *Exxon*).¹

Most notably, section 211 is amended to require EPA to set standards for what is called “reformulated gasoline.” Reformulated gasoline is the popular name given to gasoline that has been blended with a different blend of components than traditional gasoline so as to reduce emissions, but which gasoline can be used by standard motor vehicle gasoline engines. The amendments require the sale of reformulated gasoline as a replacement for traditional gasoline in the most serious ozone nonattainment areas, and set standards for reformulated gasoline based on oxygen content, benzene content, resulting oxides of nitrogen emissions, and either capability to

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¹See § 12:134 for discussion of *Exxon Corp. v. City of N.Y.*, 548 F.2d 1088, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20130 (2d Cir. 1977).

reduce emissions of volatile organic compounds and toxics or aromatic content. The amendments also require that all gasoline sold in the most serious carbon monoxide nonattainment areas meet minimum oxygen content standards.

§ 12:143 The Clean Air Act Amendments of 1990—Enforcement

Provisions have been added to Title II in an attempt to strengthen the government's ability to assess penalties. The amendments establish a procedure whereby EPA may assess civil penalties through an administrative assessment process for violations of motor vehicle or fuels violations (sections 203, 211 or 213). For fuels violations, the government is also provided with injunctive authority to restrain violations and to compel production of information.

In addition, the amendments add several new prohibited acts, some of which had already been covered regulatorily or through EPA interpretation. The Act itself now prohibits refusal to make required reports or permit access to records; refusal to permit entry, testing or inspection; refusal to perform required testing; tampering with emissions control equipment by individuals; misfueling; and sale of devices used to circumvent emissions controls.

§ 12:144 The Clean Air Act Amendments of 1990—Clean fuel vehicles

The 1990 Clean Air Act Amendments institute a two-part program to encourage the production and sale of vehicles operated on alternative fuels such as electricity, natural gas, ethanol, methanol, propane. "In the long run, widespread use of clean-burning alternative fuels will be necessary to clean up the most polluted cities. . . . The Committee recognizes that further tightening of traditional exhaust emissions standards alone is not likely to result in significant further emissions reductions and that clean alternative fuels have the potential to achieve further reductions in VOC emissions to assist in attainment of the ozone standard."¹

The amendments establish two tiers of standards for clean fuel light-duty vehicles and lighter (less than 6,000 lbs. gross vehicle weight rating) light-duty trucks, beginning in model years 1996 and 2001, respectively. A single layer of standards of heavier light-duty trucks and heavy-duty engines begin model year 1998. Traditional standards for hydrocarbons are replaced with standards for nonmethane organic gas, and standards for formaldehyde are included.

The amendments establish a program for fleets of ten or more centrally-fueled (or capable of being centrally fueled) vehicles, in serious, severe, and extreme ozone nonattainment areas of over 250,000 population, and in serious carbon monoxide nonattainment areas. Beginning in 1998, clean fuel vehicles must be a certain minimum percentage of the new vehicles placed into fleet service. For light-duty vehicles and light-duty trucks, the Tier 2 (model year 2001) standards apply; if vehicles meeting those standards are not yet offered for sale in California as of 1998, the phase-in schedule can be delayed beyond 1998 to not later than 2001. By purchasing more clean fuel vehicles than required or vehicles meeting more stringent standards, fleet operators can obtain credits that can be used for compliance, traded, or sold.

Also established by the amendments is a California clean fuel vehicle pilot project. Beginning in model year 1996, at least 150,000 clean fuel vehicles must be sold each year in California; the number increases to 300,000 for model year 1999 and thereafter. The required volume number is to be apportioned to the manufacturers by EPA. Manufacturers will have the opportunity to bank and trade credits for sell-

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¹H.R. Rep. No. 490, 101st Cong., 2d Sess. 281-83 (1990).

ing more clean fuel vehicles than required or selling vehicles meeting more stringent standards than set out in the amendments.

VIII. TRANSPORTATION CONTROLS AND MOTOR VEHICLE INSPECTION AND MAINTENANCE PROGRAMS*

§ 12:145 Introduction

The control of automobile emissions was one of the most difficult and perplexing objectives of the Clean Air Act Amendments of 1970.¹ Automobile emissions—mainly consisting of hydrocarbons (HC), carbon monoxide (CO), nitrogen oxides (NO_x), and particulate matter—accounted for at least 60 percent of all air pollution² and were characterized as “particularly dangerous in the highly urbanized areas of [the] country.”³ The first congressional attempts to abate the impact of auto emissions on air quality, however, were severely limited in scope.⁴ These initial attempts were dwarfed by Title II of the Clean Air Act Amendments of 1970,⁵ which significantly expanded the federal role. Congress seemingly embraced this responsibility by default. Despite the recognition that government was not “particularly well equipped to design cars or determine the composition of fuels,” Congress believed that it “would be derelict if it [failed] to make the necessary decisions” to reduce automotive air pollution in the absence of appropriate steps by the automobile industry to do so on its own.⁶

The Clean Air Act accordingly adopted a two-pronged approach to reduce mobile source emissions. First, manufacturers were required to decrease emissions of all new vehicles;⁷ second, the states were to use an assortment of “transportation controls,” such as exclusive bus and carpool lanes, on-street parking restrictions, and road-user charges to curtail the number of vehicle miles traveled.⁸ The second prong of this federal system of emission controls, the transportation control plans (TCPs), was to be included in the overall state implementation plans (SIPs) to at-

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¹Clean Air Act Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1679, codified as amended at 42 U.S.C.A. §§ 7401–7642.

²H.R. Rep. No. 91-1146, at 4 (1970) [hereinafter 1970 House Report], *reprinted in* United States Code Congressional and Administrative News pp 5356, 5359. Although automobile emissions are the “greatest source” of pollution, this figure represents about 42 percent of all pollution by weight. *See* F. Grad, *Treatise on Environmental Law* § 2.06[1][a] (1985). Almost all CO, however—approximately 95 percent—is generated solely by automobiles. National Commission on Air Quality, *To Breathe Clean Air* 272 (1981).

³1970 House Report, at 6, United States Code Congressional and Administrative News p 5361.

⁴Under the Clean Air Act of 1963, Pub. L. No. 88-206, 77 Stat. 395, crankcase “blow-by” emissions were reduced by use of a positive crankcase ventilation system. F. Grad, *Treatise on Environmental Law* § 2.06[1] [a] (1985). Two years later, the Act was amended to include the Motor Vehicle Air Pollution Control Act, Pub. L. No. 89-272, tit. I, 79 Stat. 992-95 (1965), which authorized the Secretary of Health, Education and Welfare to set new motor vehicle emission standards and provided for prototype testing and certification. *See* 31 Fed. Reg. 5170 (1966). The Air Quality Act of 1967, Pub. L. No. 90-148, 81 Stat. 499, retained the emissions standards and prototype testing features of the 1965 Act, and added a requirement that the inclusion, concentration, and composition of automotive fuel additives be registered. *Id.* § 210, 81 Stat. 502; *see* 35 Fed. Reg. 9282 (1970) (fuel additive regulations).

⁵Pub. L. No. 90-148, tit. II, 81 Stat. 499-503, codified as amended at 42 U.S.C.A. §§ 7521–7551.

⁶1970 House Report, at 6, United States Code Congressional and Administrative News p 5361.

⁷Clean Air Act §§ 110(a)(2)(B), 206(a)(2), 42 U.S.C.A. §§ 7410(a)(2)(B), 7525(a)(2); 1970 House Report, at 12, United States Code Congressional and Administrative News pp 5367-68.

⁸Clean Air Act § 108(f)(1)(A)(iii) to (xvii), 42 U.S.C.A. § 7408(f)(1)(A)(iii) to (xvii).

tain and maintain the national ambient air quality standards (NAAQS).⁹ A key feature of the state plans was the motor vehicle inspection and maintenance (I/M) program.¹⁰

I/M programs are designed to reduce emissions from motor vehicles in use by identifying those in need of emission-control-related maintenance. A blend of federal and state responsibilities make up a state's I/M program, thereby permitting some degree of local autonomy to address local concerns, while retaining a high degree of federal oversight. The SIP was required to provide, "to the extent necessary and practicable, for periodic inspection and testing of motor vehicles to enforce compliance with applicable [federal] emission standards."¹¹ Once a SIP was developed, it was required to be submitted to EPA for approval, disapproval, or possible revision in whole or in part.¹² When a SIP contained inadequate measures for the reduction of mobile source pollution and was disapproved, EPA was to promulgate its own plans for the state.¹³ The SIP was to provide for attainment of the primary NAAQS within three years of the plan's approval under the 1970 Act;¹⁴ a procedure did exist, however, for an extension of the attainment deadline.¹⁵

If the state could demonstrate that "one or more emission sources or classes of moving sources" were unable to comply with the SIP requirements within the three years allotted by the statute because the technology did not exist, and that all available alternative measures were inadequate, EPA was permitted to grant an attainment deadline extension for up to two years.¹⁶ As a condition of the extension, all "reasonably" available control measures had to be applied to the sources for which

⁹Clean Air Act §§ 110(a)(1), 42 U.S.C.A. § 7410(a)(1).

¹⁰State I/M programs were viewed as less objectionable than other restrictions on vehicle owners to reduce emissions; the programs become the only ones left which directly impacted vehicle owners after the 1977 Amendments to the Act. *See, e.g.*, Clean Air Act § 110(c)(2)(B), 42 U.S.C.A. § 7410(c)(2)(B) (elimination of parking surcharges); Clean Air Act § 110(c)(4), 42 U.S.C.A. § 7410(c)(4) (gas rationing restrictions may be "temporarily suspend[ed]" where they would have "seriously disruptive and widespread economic or social effects"). The benefits obtained, relative to the costs imposed, of I/M programs, as well as their usefulness in the future, has been the source of a continuing debate. *See generally* Ostrov, *Inspection and Maintenance of Automotive Pollution Controls: A Decade-Long Struggle Among Congress, EPA, and the States*, 8 Harv. Envtl. L. Rev. 139 (1984).

¹¹Clean Air Act § 110(a)(2)(B), 42 U.S.C.A. § 7410(a)(2)(B). According to the House Report accompanying the Clean Air Act Amendments of 1977, I/M programs serve a variety of purposes: In-use vehicle emissions are reduced by ensuring that emission levels are not permitted to deteriorate; the removal of or tampering with emission control equipment is checked; failures or defects in material or workmanship of emission control devices in new cars are detected; vehicles not produced in conformity with certified prototypes are identified; and where a significant number of vehicles of the same model or type are identified as nonconforming during their useful life, despite proper maintenance and operation, the I/M program can be used to implement the recall provision of section 207(c). H.R. Rep. No. 294, 95th Cong., 1st Sess. 282-83 (1977), *reprinted in* United States Code Congressional and Administrative News pp 1077, 1361-62.

¹²40 C.F.R. §§ 52.16 to 52.19.

¹³EPA had no express authority to promulgate substitute plans, and had instead granted extensions beyond the statutory deadlines for submitting approved plans. In *Natural Resources Defense Council, Inc. v. EPA*, 475 F.2d 968, 3 Envtl. L. Rep. (Envtl. L. Inst.) 20155 (D.C. Cir. 1973) (*per curiam*), this practice was disallowed; EPA was ordered to rescind the extensions and provide substitute plans. *See* § 12:144.

¹⁴Pub. L. No. 91-604, § 4(a), 84 Stat. 1682 (1970), *reprinted in* United States Code Congressional and Administrative News pp 1954, 1960 (former § 110(a)(2)(A)).

¹⁵Pub. L. No. 91-604, § 4(a), 84 Stat. 1684 (1970), *reprinted in* United States Code Congressional and Administrative News p 1961 (former § 110(e)).

¹⁶Pub. L. No. 91-604, § 4(a), 84 Stat. 1684 (1970); *see also* Jorling, *The Federal Law of Air Pollution Control*, in *Federal Environmental Law 1058, 1089-90* (E. Dolgin & T. Guilbert eds. 1974).

the impossibility of compliance existed as “interim” measures.¹⁷ Controversy surrounded the measures, including TCPs, needed to obtain the extension. Nevertheless, a similar requirement was retained by the 1977 Amendments, and I/M programs are a required transportation control measure.¹⁸

Both motorists and states were slow to accept the federally-mandated system of transportation controls. Early emission control devices impeded engine performance and gas mileage, and grassroots resistance was strong.¹⁹ The states responded by eschewing implementation for litigation.

§ 12:146 The genesis of transportation controls: Confusion, delay, litigation

The implementation of TCPs at first seemed straightforward. Responding to the mandate of section 110(a)(2),¹ in April 1971, EPA promulgated the NAAQS and required states to submit SIPs by January 31, 1972.² Yet in August the states were advised that their proposed TCPs to enforce the NAAQS for CO and photochemical oxidants (smog) could be deferred³ because neither the states nor EPA “had any practical experience that would permit the development of meaningful transportation control plans or the prediction of their impact on air quality.”⁴ Accordingly, EPA defined “transportation control plans” to include both the stationary source and motor vehicle control programs as transportation control “measures.” If the “summation” of these measures, in the individual state’s estimation, would reduce the amount of CO and photochemical oxidants to prescribed levels within the time allotted by the Clean Air Act, the inclusion of TCPs in a SIP could be deferred beyond the statutory deadline.⁵

On May 31, 1972, EPA published the first of its notices of approval or disapproval of the state-submitted plans.⁶ Large portions of the California plan were disapproved, and EPA proposed regulations to cure its perceived deficiencies.⁷ The EPA substitute plan, as it applied to the South Coast Air Basin (metropolitan Los Angeles), was without transportation controls for photochemical oxidants, which were

¹⁷Pub. L. No. 91-604, § 4(a), 84 Stat. 1684 (1970), *reprinted in* United States Code Congressional and Administrative News pp 1954, 1962 (former § 110(e)(2)(B)).

¹⁸Clean Air Act § 712, 42 U.S.C.A. § 7502; *see* 40 C.F.R. § 51.12 (required general control strategies); *see also* 40 C.F.R. § 51.1(n)(5) (defining control strategy as including “[p]eriodic inspection and motor vehicle emission control systems”).

¹⁹*See* Ostrov, *Inspection and Maintenance of Automotive Pollution Controls: A Decade-Long Struggle Among Congress, EPA, and the States*, 8 Harv. Envtl. L. Rev. 139, 141–42 (1984). In addition, the burdens of lost time and out-of-pocket expenses incurred for inspection and repair are shouldered primarily by the individual motorists. *Id.* at 185–86. Some states have placed a cap on the amount a motorist must pay for repairs. *Id.* at 184.

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¹42 U.S.C.A. § 7410(a)(2). Authority to promulgate NAAQS is derived from section 109 of the Act. 42 U.S.C.A. § 7409.

²36 Fed. Reg. 8186 (1971); 36 Fed. Reg. 20513, 25233 (1971) (amendments and corrections).

³36 Fed. Reg. 15486 (1971).

⁴38 Fed. Reg. 30626 (1973).

⁵38 Fed. Reg. 30626 (1973).

⁶37 Fed. Reg. 10842 (1972). Other approval or disapproval actions were published at various times in 1972 and 1973, owing to resubmissions of plans by states which had had their SIPs disapproved and because of litigation concerning EPA’s deferral practice. *See, e.g.*, 37 Fed. Reg. 15080 (1972); 37 Fed. Reg. 19806 (1972); 38 Fed. Reg. 3599 (1972). *See also* 38 Fed. Reg. 30626 (1972) (EPA response to litigation).

⁷37 Fed. Reg. 19812–15, 19829–35 (1972).

deferred in accordance with EPA's announced policy.⁸ Environmental organizations vigorously protested the deferral; EPA's failure to include transportation controls to reduce smog in the Los Angeles area inexorably led to a courtroom confrontation. In *City of Riverside v. Ruckelshaus*,⁹ the court characterized EPA's obligation to propose transportation controls as a nondiscretionary duty and not subject to deferral.¹⁰ EPA was therefore ordered to promulgate regulations to control photochemical oxidants, including all necessary transportation controls, by January 15, 1973.¹¹ EPA issued the regulations, applicable to all states, but relying on the Act's provision for an extension of the attainment deadline extended the compliance time for twenty-one states by two years.¹²

Predictably, the two-year extension was not well received. The Natural Resources Defense Council (NRDC) challenged the extensions as not granted in conformance with the Act's requirements, and sought to require the submission of SIPs for areas designated nonattainment for either CO or photochemical oxidants.¹³ In *NRDC v. EPA*,¹⁴ the U.S. Court of Appeals for the District of Columbia Circuit denied EPA the authority to grant any extension of time for a state to submit a SIP. EPA had permitted the extensions because the technology for implementation did not exist; this practical reality was irrelevant, however, because the Clean Air Act "plainly [did] not permit extensions of the statutory time for submission by each state of an implementation plan which will permit attainment of the standards by 1975."¹⁵ The schedule and methods prescribed in the Act were clear, and if the technology for implementation was unavailable, an attainment extension could be obtained only after the plan was filed.¹⁶ The court consequently ordered EPA to follow an extraordinarily tight schedule to "return to the procedures and the timetable established by the Congress."¹⁷ The court's decision, issued January 31, 1973, imposed a deadline of April 15 for EPA compliance; this proved to be an unrealistically short time.

The real thrust of *NRDC v. EPA*, however, went much further than effectively

⁸37 Fed. Reg. 19812-15, 19829-35 (1972).

⁹*City of Riverside v. Ruckelshaus*, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20043 (C.D. Cal. 1972).

¹⁰*City of Riverside v. Ruckelshaus*, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20043, 20044 (C.D. Cal. 1972).

¹¹*City of Riverside v. Ruckelshaus*, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20043, 20044-45 (C.D. Cal. 1972). Under EPA's original plan, it had announced that transportation controls for the Los Angeles region would be proposed by February 15, 1973. *Id.* at 20044. The immediate result, therefore, of *City of Riverside* was only to speed up the time of the proposal by one month.

¹²See 37 Fed. Reg. 10842 (1972); see also 38 Fed. Reg. 2194, 10851 (1973).

¹³NRDC, apparently to "preserve the nation-wide effects" of EPA's response to *City of Riverside*, filed identical petitions in all eleven U.S. Courts of Appeal. See *Natural Resources Defense Council, Inc. v. EPA*, 465 F.2d 492, 493, 2 Env'tl. L. Rep. (Env'tl. L. Inst.) 20639, 20639 (1st Cir. 1972) (per curiam). NRDC then filed identical motions in all courts to have each case transferred to the District of Columbia Circuit. EPA opposed the motions because, in its view, the D.C. Circuit was not the "appropriate circuit" to review challenges to "every state's air pollution plan." *Id.* Nevertheless, the transfer motions were approved, primarily because of the identity of issues and factual questions, as well as a concern for judicial economy and the likelihood of frustration of "Congressional intent" if each circuit were to decide each case on the merits. *Id.* at 495, 2 Env'tl. L. Rep. (Env'tl. L. Inst.) at 20640.

¹⁴*NRDC v. EPA*, 475 F.2d 968, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20155 (D.C. Cir. 1973) (per curiam).

¹⁵*NRDC v. EPA*, 475 F.2d 968, 970, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20155-56 (D.C. Cir. 1973) (per curiam).

¹⁶*NRDC v. EPA*, 475 F.2d 968, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20155-56 (D.C. Cir. 1973) (per curiam).

¹⁷*NRDC v. EPA*, 475 F.2d 968, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20155-56 (D.C. Cir. 1973) (per curiam).

requiring states to submit paper plans;¹⁸ this result prompted Judge MacKinnon to state that while the order conformed to the demands of the Clean Air Act, “in some respects it ignore[d] reality.”¹⁹ His premonition was justified, as the case heralded the start of “years of supervision” by EPA of the states, and by the courts of EPA.²⁰

§ 12:147 The death of indirect source controls

The deadlines imposed by *Riverside* and *NRDC* prompted EPA to require states to immediately submit transportation control measures for the disputed pollutants.¹ California refused to submit a plan for Los Angeles;² EPA was forced to develop its own plan to remedy the nation’s worst case of photochemical oxidant pollution, and within an exceedingly short time at that.³ Similarly, many other states were either unwilling or unable to submit plans to EPA prior to the April 15 deadline imposed by *NRDC*. As a result, EPA had to simultaneously propose plans for numerous other, albeit less polluted, areas of the country. By necessity, the plans proposed by EPA contained some extraordinarily controversial, even radical, transportation control measures, not the least of which was a proposal to ration and reduce by over 80 percent the amount of gasoline used in Los Angeles.⁴

At the time the Los Angeles gas rationing proposal was announced, Administrator William Ruckelshaus noted that EPA had no intention of requiring such a drastic measure; however, under the terms of the Clean Air Act, EPA could not do otherwise. The Agency therefore indicated that it would seek amendments that would not require such severe steps. Nevertheless, EPA’s other, less drastic control proposals, some of which included a surcharge of \$3.00 per day on parking, exclusive bus and car pool lanes in approximately twenty major urban areas, and the pre-construction review of all new facilities which would contain more than a certain number of parking spaces, also generated considerable controversy.⁵

EPA held hearings on these proposals during the summer of 1973, and beginning on November 6, 1973, began to promulgate final rules which contained most, if not all, of these unappealing control measures in approximately twenty-nine air quality control regions (AQCRs).⁶ These plans were no more popular when promulgated than when proposed. Consequently, new EPA Administrator Russell Train promised that, like his predecessor, he would encourage Congress to reexamine the attainment deadlines for CO and photochemical oxidant standards. Likewise, Train indicated that he would only seek “reasonable” transportation control measures for

¹⁸In *Texas v. EPA*, 499 F.2d 289, 313 n.44, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20744, 20755 n.44 (5th Cir. 1974), the Fifth Circuit called the exercise of states submitting unworkable SIPs in order to qualify for an extension “pointless.”

¹⁹*NRDC v. EPA*, 475 F.2d 968, 972, 3 Env’tl. L. Rep. (Env’tl. L. Inst.) 20155, 20157 (D.C. Cir. 1973) (MacKinnon, J., concurring).

²⁰R. Melnick, *Regulation and the Courts: The Case of the Clean Air Act* 312 (1983).

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¹For a more complete discussion of EPA’s actions taken as a result of the *Riverside* and *NRDC* cases, see R. Melnick, *Regulation and the Courts: The Case of the Clean Air Act* 299-336 (1983).

²See *Brown v. EPA*, 521 F.2d 827-30, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20546, 20547 (9th Cir. 1975), vacated and remanded sub nom. *Brown v. EPA*, 431 U.S. 99, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20375 (1977).

³EPA issued a “Notice of Violation” to California for the “failure to submit the compliance schedule” on April 11, 1973, a scant four days prior to the April 15 deadline imposed by *NRDC*. The EPA plan was not published until mid-June. 38 Fed. Reg. 16550, 16556, 16564 (1973).

⁴R. Melnick, *Regulation and the Courts: The Case of the Clean Air Act* 312 (1983); see 38 Fed. Reg. 31232-55 (1973).

⁵38 Fed. Reg. 16551-59 (1973).

⁶38 Fed. Reg. 30626 (1973).

major urban areas, defining “reasonable” to exclude gasoline rationing and, subsequently, parking surcharges.

Despite EPA’s promise to seek amendments to the Clean Air Act, the torrent of petitions for review that were filed by parties adversely affected by the plans did not halt. Petitioners were as diverse as the Roman Catholic Archdiocese of San Francisco, land development interests, and most major manufacturing companies in urban areas.⁷ Manufacturers were dissatisfied with the controls on volatile organic materials that were part of some SIPs promulgated by EPA. Landowners and developers, as well as commercial business establishments, particularly objected to restrictions on parking, surcharges, and gasoline rationing.⁸ These, the most despised of all control strategies, were both popularly and politically distasteful,⁹ and it was not long before they were removed from EPA’s arsenal.

Congressional opposition to the various transportation restrictions coalesced by late 1973, and substantial moves to cut EPA’s authority were initiated. By mid-1974, surcharges on parking were prohibited entirely, while other forms of transportation controls were permitted to be suspended for one year.¹⁰ In addition, potentially lengthy and difficult procedural requirements were established before EPA could promulgate other unpopular controls, such as parking supply management measures and exclusive carpool and bus lanes.¹¹ While this legislative response effectively addressed many of the concerns created by EPA actions taken in the wake of *Riverside* and *NRDC*, the litigation and legislation did not cease.¹² Eventually, EPA gave up and suspended indefinitely its attempts to control such indirect sources of pollution as highways, parking lots, and shopping centers,¹³ while the NRDC turned from the courtroom to the cloakroom in intensified congressional lobbying efforts.¹⁴ By 1977, the use of controls over indirect sources of pollution appeared dead as a consequence of congressional permission for states to remove such measures from their SIPs.¹⁵ Few transportation control plans were ever fully implemented.

⁷See generally *Brown v. EPA*, 521 F.2d 827, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20546 (9th Cir. 1975).

⁸See *South Terminal Corp. v. EPA*, 504 F.2d 646, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20768 (1st Cir. 1974).

⁹R. Melnick, *Regulation and the Courts: The Case of the Clean Air Act* 317 (1983).

¹⁰The alterations to the tools available to EPA were included as part of the Energy Supply and Environmental Coordination Act of 1974, Pub. L. No. 93-319, § 4, 94 Stat. 611 (adding Clean Air Act § 110(c)(2)–(c)(5), 42 U.S.C.A. § 7410(c)(2)–(c)(5)).

¹¹Clean Air Act § 110(c)(2)(D)–(E), 42 U.S.C.A. § 7410(c)(2)(D)–(E).

¹²EPA was prohibited from regulating parking in any way by a rider to the Agriculture-Environmental and Consumer Protection Appropriation Act, 1975, Pub. L. No. 93-563, § 510, 88 Stat. 1823 (1974). There was some question regarding the jurisdictional authority of the Appropriations Committee to restrict EPA activity in this way, and in a political tightrope act, EPA deferred action in accordance with the restriction, but attributed its delay to public misunderstanding over the controls. In this way, EPA refused to officially recognize the authority of the Appropriations Committee. 39 Fed. Reg. 45014 (1974). While NRDC again filed suit against EPA to implement the controls, Congress again passed an appropriations rider to restrict EPA. Department of Housing and Urban Development—Independent Agencies Appropriations Act, 1976, Pub. L. No. 94-116, § 407, 89 Stat. 581 (1975). EPA was, in short, at the center of a political cross-fire.

¹³40 Fed. Reg. 28064 (1975).

¹⁴R. Melnick, *Regulation and the Courts: The Case of the Clean Air Act* 319 (1983).

¹⁵The death of indirect source transportation controls was confirmed by *Connecticut Fund for the Env’t, Inc. v. EPA*, 672 F.2d 998, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20306 (2d Cir. 1982), which permitted states that had voluntarily included indirect source programs in their SIPs to drop them entirely. An earlier case, which had apparently prevented states from dropping voluntarily-included controls, *Manchester Env’tl. Coalition v. EPA*, 612 F.2d 56, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20057 (2d Cir. 1979), was distinguished on the basis that indirect source controls could not be removed where the suc-

§ 12:148 EPA's power to enforce inspection and maintenance programs

Pennsylvania at first appeared an unlikely SIP adversary, being one of only eight states to submit its own plan before the April 15 deadline.¹ But following *NRDC*, the state had its transportation control extension cancelled, resulting in implementation of new EPA-promulgated regulations.² Pennsylvania balked and charged in *Pennsylvania v. EPA*³ that EPA attempts at enforcement of transportation controls breached the bounds of federalism.

Section 113 of the Clean Air Act facially bestowed upon EPA the power to issue compliance orders, to bring civil actions to enjoin violations, and to seek criminal sanctions against knowing violators.⁴ Pennsylvania argued that this section could not be employed to force states to construct transportation control programs; the federal commerce power did not reach this far.⁵ Only this one element of the EPA plan was challenged,⁶ but if the state argument was correct, EPA would have no power to force a state to carry out transportation controls, including I/M programs.

The Third Circuit upheld the federal enforcement scheme, thereby at least temporarily saving the EPA program. Relying on *Maryland v. Wirtz*,⁷ the court stated that “federal regulation of state activities is subject to the same analysis as that of private activities”;⁸ the touchstone for determining amenability to regulation, according to the court, was impact on commerce. Using this analysis, the court had little trouble sustaining the federal intrusion.

The state had conceded that, as a general matter, air pollution was a proper subject for federal regulation because of its impact on commerce.⁹ State policies, including Pennsylvania's, had contributed to the problem of air pollution by encouraging the use of passenger cars over other, less-polluting transportation systems.¹⁰ Thus, as a participant in the development of road and highway transportation systems, the state was indistinguishable from developers of privately-run transportation systems, such as railroads.¹¹

Pennsylvania contended, however, that it was “not engaging in activity also

cess of a SIP depended on the controls; where the standards could be attained without the use of the controls, they were not required. *Connecticut Fund for the Env't, Inc. v. EPA*, 672 F.2d 998, 1013, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20306, 20314 (2d Cir. 1982).

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¹*Pennsylvania v. EPA*, 500 F.2d 246, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20618 (3d Cir. 1974).

²38 Fed. Reg. 32884 (1973).

³*Pennsylvania v. EPA*, 500 F.2d 246, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20618 (3d Cir. 1974). A number of control measures were required by EPA, among them computer carpool matching, an I/M program, a system of bikepaths, and an “air bleed retrofit program.” 38 Fed. Reg. 32884 (1973).

⁴42 U.S.C.A. § 7413.

⁵*Pennsylvania v. EPA*, 500 F.2d 246, 256, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20618, 20622 (3d Cir. 1974).

⁶Only the “air bleed program,” 38 Fed. Reg. 32884 (1973), was challenged. *Pennsylvania v. EPA*, 500 F.2d 246, 249, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20618, 20619 (3d Cir. 1974). The air bleed retrofit program required older cars to have a device installed to improve efficiency of combustion and, hence, to reduce emissions.

⁷*Maryland v. Wirtz*, 392 U.S. 183 (1968).

⁸*Pennsylvania v. EPA*, 500 F.2d 246, 262, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20618, 20626 (3d Cir. 1974) (quoting *Parden v. Terminal Ry. of the Ala. State Docks Dep't*, 377 U.S. 184, 192 (1984)).

⁹*Pennsylvania v. EPA*, 500 F.2d 246, 259, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20618, 20624 (3d Cir. 1974).

¹⁰*Pennsylvania v. EPA*, 500 F.2d 246, 260–61, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20618, 20625 (3d Cir. 1974).

¹¹*Pennsylvania v. EPA*, 500 F.2d 246, 260, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20618, 20625 (3d Cir. 1974).

engaged in by private persons” by building and maintaining roads, but was acting as a sovereign in fulfilling one of its “uniquely governmental functions.”¹² Since it was not an economic participant, therefore, it could not come under federal control by virtue of the commerce clause. Moreover, even assuming an impact on commerce, federal transportation control plans would interfere with “the performance of its governmental functions” because the state would be required, “in effect, to enforce a federal regulation.”¹³ The Third Circuit disagreed: “By empowering Congress to regulate commerce, . . . the States necessarily surrendered any portion of their sovereignty that would stand in the way of such regulation.”¹⁴

The EPA victory, however, was short-lived. The Ninth Circuit arrived at a contrary result just one year later in *Brown v. EPA*.¹⁵ In *Brown*, the court pointedly disagreed with the Third Circuit’s statutory and constitutional analysis, and denied to EPA the power to enforce the program intended for California, which had included an I/M program. TCPs are merely legislation that states need to include in an acceptable SIP, but states could not be required to submit SIPs under the Act. Even if the Clean Air Act required submission, it was questionable whether the federal government could, by injunction, compel a sovereign state to perform a legislative function. Specifically, the court found that, as a matter of statutory interpretation, the Clean Air Act did *not* authorize EPA to take enforcement action against a state for failure to administer federally promulgated controls. This conclusion directly opposed that of the Third Circuit.¹⁶ Instead, EPA was only empowered to take action against individual polluters; while the Agency could prohibit the polluting activities of a state, no provision of the Act enabled EPA to require *state* enforcement of *federal* regulations against “polluters, potential or actual, other than the state.”¹⁷

Even if such a provision existed, the court expressed doubts as to its constitutionality. Specifically rejecting the commerce clause analysis of *Pennsylvania v. EPA* as relying on a logical non sequitur,¹⁸ the *Brown* court declared that *Maryland v. Wirtz* required a distinction between a state acting as a market participant, which was “an *economic* activity indistinguishable from that of private parties, and the *governance* of the use of highways and automobiles,” which was an exercise of the state police power.¹⁹ Implicitly articulating the negative rights theory of federal power, the *Brown* court said that if the governance of matters with respect to commerce by the states was treated “as within the plenary reach” of the federal commerce power, “an abrupt departure from previous constitutional practice” would result, something the Ninth Circuit was not willing to conclude that Congress had

¹²*Pennsylvania v. EPA*, 500 F.2d 246, 261, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20618, 20625 (3d Cir. 1974).

¹³*Pennsylvania v. EPA*, 500 F.2d 246, 261, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20618, 20625 (3d Cir. 1974).

¹⁴*Pennsylvania v. EPA*, 500 F.2d 246, 262, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20618, 20626 (3d Cir. 1974).

¹⁵*Brown v. EPA*, 521 F.2d 827, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20546 (9th Cir. 1975), vacated and remanded sub nom. *EPA v. Brown*, 431 U.S. 99, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20375 (1977).

¹⁶*Compare Pennsylvania v. EPA*, 500 F.2d 246, 256-59, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20618, 20623-24 (3d Cir. 1974) (congressional intent to permit EPA enforcement) *with Brown*, 521 F.2d at 832-37, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) at 20548-50 (no EPA power to require state enforcement).

¹⁷*Brown v. EPA*, 521 F.2d 827, 834, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20546, 20549 (9th Cir. 1975).

¹⁸*Brown v. EPA*, 521 F.2d 827, 838, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20546, 20550-51 n.45 (9th Cir. 1975), vacated and remanded sub nom. *EPA v. Brown*, 431 U.S. 99, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20375 (1977).

¹⁹*Brown v. EPA*, 521 F.2d 827, 838, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20546, 20550 (9th Cir. 1975), vacated and remanded sub nom. *EPA v. Brown*, 431 U.S. 99, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20375 (1977).

intended.²⁰ Only active state interference with federal regulations was prohibited by the commerce clause; a state could always decline to become involved in a federal program.²¹

The decision in *Brown* meant that while the federal government could establish and enforce transportation control measures, the states could not be required to implement them in EPA's stead. This was a potentially devastating blow because, as a practical matter, EPA did not have the resources to sustain a nationwide system. *Brown* was followed in short order by *Maryland v. EPA*²² and *District of Columbia v. Train*,²³ both of which supported the result of *Brown*.

The Supreme Court granted EPA's petition for certiorari in *EPA v. Brown*²⁴ to resolve the disagreement among the circuits, but then denied the petition as moot when EPA suggested that its regulations were to be revised.²⁵ The *per curiam* opinion failed to shed any light on the extent of federal authority "to compel various types of implementation and enforcement actions by the States."²⁶

The issue of EPA's enforcement authority, when inducements fail, remains unresolved. The problem is that the commerce clause gives the federal government some power over state activities, presumably limited by the Tenth Amendment; but the amendment seemingly recites only the tautology that whatever power is not vested in the federal government by virtue of the Constitution remains with the states.²⁷ The Supreme Court's attempt in *National League of Cities v. Usery*²⁸—decided one year prior to the remand of *EPA v. Brown*—to imbue the amendment with some substance of its own has been criticized as a return to the freewheeling jurisprudence of the *Lochner* era.²⁹ *Usery* was overruled in 1985 by *Garcia v. San*

²⁰*Brown v. EPA*, 521 F.2d 827, 839, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20546, 20551 (9th Cir. 1975), vacated and remanded sub nom. *EPA v. Brown*, 431 U.S. 99, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20375 (1977).

²¹*Brown v. EPA*, 521 F.2d 827, 840, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20546, 20551 (9th Cir. 1975), vacated and remanded sub nom. *EPA v. Brown*, 431 U.S. 99, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20375 (1977).

²²*Maryland v. EPA*, 530 F.2d 215, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20651 (4th Cir. 1975), vacated sub nom. *EPA v. Brown*, 431 U.S. 99, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20375 (1977).

²³*District of Columbia v. Train*, 521 F.2d 971, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20007 (D.C. Cir. 1975), dismissed as moot after remand sub nom. *District of Columbia v. Costle*, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20701 (D.C. Cir. 1977), vacated, 567 F.2d 1091, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20036 (D.C. Cir. 1977).

²⁴*EPA v. Brown*, 431 U.S. 99, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20375 (1977).

²⁵*EPA v. Brown*, 431 U.S. 99, 104, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20375, 20376 (1977).

²⁶*EPA v. Brown*, 431 U.S. 99, 100, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20375 (1977). On remand, EPA argued that the state itself was an "indirect polluter" because its roads and highways led to pollution when vehicles using it exceeded emission standards. Accordingly, the state could be subjected to federal controls. This argument was rejected because Congress had specifically rejected the "indirect polluter" concept in the 1977 Clean Air Act Amendments. *Brown v. EPA*, 566 F.2d 665, 671, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20140, 20142 (9th Cir. 1977).

²⁷U.S. Const. amend. X provides that "[t]he powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people." This amendment has also been termed a truism by the Court, *United States v. Darby*, 312 U.S. 100, 124 (1941); and that it means only that "all is retained which has not been surrendered." *Fry v. United States*, 421 U.S. 542, 547 n.7 (1975) (quoting *United States v. Darby*, 312 U.S. 100, 124 (1941)).

²⁸*National League of Cities v. Usery*, 426 U.S. 833 (1976).

²⁹See Field, *Garcia v. San Antonio Metropolitan Transit Authority: The Demise of a Misguided Doctrine*, 99 Harv. L. Rev. 84, 89-95 (1985) (attributing the demise of *Usery* to its inability to garner strong support among Court members because of its analytical similarity to *Lochner v. New York*, 198 U.S. 45 (1905)).

*Antonio Metropolitan Transit Authority*³⁰ and, at least for now, the contours of the federal-state relationship are better defined. At the time the appellate courts were struggling with the propriety of EPA's enforcement authority, however, the contours were not quite so clear.

Prior to *Usery* and *Garcia*, the controlling Supreme Court case on the issue was *Maryland v. Wirtz*.³¹ The questions presented by *Wirtz*, *Usery*, and *Garcia* were nearly identical: Whether Congress could apply the minimum wage and overtime requirements of the Fair Labor Standards Act (FLSA)³² to state employees. In *Wirtz*, the argument that FLSA could not be so applied, because it would intrude upon state sovereignty in the performance of traditional governmental functions, was simply rejected as "not tenable."³³ In *Usery*, however, FLSA's application to state and municipal employees was ruled unconstitutional because it "operate[d] to directly displace the States' freedom to structure [their] integral operations in . . . traditional government functions."³⁴ The difficulty with this holding, apart from the abstruse inquiry necessary to distinguish a traditional from a nontraditional government function, is in identifying the constitutional source of this independent state power. Although it would seem to derive from the Tenth Amendment, Justice Rehnquist's majority opinion avoided relying directly upon it. Instead, "the essential role of the States in our federal system" was identified as the basis of state immunity from such federal intrusions; later cases nevertheless acknowledged *Usery* as pinpointing the Tenth Amendment as the constitutional source of state immunity from federal intrusion.³⁵

This somewhat oblique expression of federalism—the necessity of protecting the states as states—essentially carves out a sphere of state immunity against an otherwise valid exercise of the federal commerce power. Since this formulation of the scope of state sovereignty was rejected in *Garcia*, the interweaving of the federal commerce power and state immunity is different than it was when the Ninth Circuit decided *Brown v. EPA*. The result is likely to be the same, however.³⁶

Garcia rejected the traditional/nontraditional governmental function test of state immunity from federal regulation.³⁷ It was unnecessary for *Usery* to give the Tenth Amendment a substantive content³⁸ to protect the dignity of the states as sovereigns, since according to *Garcia* this was afforded by both the structure and process of the Constitution itself.³⁹ As examples, the Court pointed to several instances where federal legislation specifically exempted the states from "obligations imposed by

³⁰*Garcia v. San Antonio Metropolitan Transit Authority*, 53 U.S.L.W. 4135 (U.S. Feb. 19, 1985).

³¹*Maryland v. Wirtz*, 392 U.S. 183 (1968).

³²29 U.S.C.A. §§ 201–219.

³³*Maryland v. Wirtz*, 392 U.S. 183, 195 (1968).

³⁴*National League of Cities v. Usery*, 426 U.S. 833, 852 (1976).

³⁵*National League of Cities v. Usery*, 426 U.S. 833, 844 (1976).

³⁶*See EPA v. Brown*, 431 U.S. 99, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20375 (1977).

³⁷*Garcia v. San Antonio Metropolitan Transit Authority*, 53 U.S.L.W. 4135, 4139 (U.S. Feb. 19, 1985).

³⁸Although *Usery* had avoided directly relying on the Tenth Amendment, *see* note 89 and accompanying text, several Justices have described *Usery* as a Tenth Amendment case. *See, e.g.,* *EEOC v. Wyoming*, 460 U.S. 226, 252 (1983) (Burger, C.J., dissenting). By the time the Court considered *Garcia*, *Usery* was generally accepted as having derived from the Tenth Amendment; the question presented to the Court in *Garcia* was "[w]hether or not the principles of the Tenth Amendment as set forth in *National League of Cities* . . . should be reconsidered?" *Garcia v. San Antonio Metropolitan Transit Authority*, 53 U.S.L.W. 4135, 4137 (U.S. Feb. 19, 1985).

³⁹*Garcia v. San Antonio Metropolitan Transit Authority*, 53 U.S.L.W. 4135, 4141–42 (U.S. Feb. 19, 1985).

Congress under the Commerce Clause”;⁴⁰ in other words, “the political process ensures that laws that unduly burden the States will not be promulgated.”⁴¹ Regulation of interstate commerce would be invalidated only when this power failed. The only substantive restraints on the exercise of the commerce clause power that *Garcia* identified were other constitutional provisions and situations where congressional acts were “destructive of state sovereignty.”⁴²

When the rule of *Garcia* is applied to the situation that was presented to the Court in *EPA v. Brown*,⁴³ the result would turn on whether the requirement that a state pass particular legislation was “destructive of state sovereignty.” The answer to this would clearly seem to be in the affirmative; dictating the content of state law would emasculate the states of their autonomous lawmaking competence. This same conclusion should have been reached under *Usery* as well, especially since there was existing authority apart from *Usery* on which to draw; instead, over Justice Stevens’ brief but vigorous dissent, the Court remanded the case for consideration of whether it was moot.⁴⁴

Into the void left by the Supreme Court’s non-decision stepped Congress. Mindful of the delicate federal-state issues implicated by the Clean Air Act’s enforcement mechanism, as well as its “legal uncertainties,”⁴⁵ Congress supplied EPA with a different sort of stick.

§ 12:149 The Clean Air Act Amendments of 1977—EPA’s new muscle

Congress was committed to the system of transportation controls, particularly the I/M strategy: I/M programs were praised in the House Report accompanying the 1977 Amendments as cost-effective, responsible for HC and CO reductions, and for increases in fuel economy.¹ As a result, the Clean Air Act Amendments of 1977² incorporated provisions to ensure that I/M plans “go forward without further delay.”³

Employing a device which a few years earlier had successfully prompted the states to establish the 55 miles-per-hour speed limit on all public highways,⁴ section 176 of the Clean Air Act was amended to make the approval of projects or award of

⁴⁰*Garcia v. San Antonio Metropolitan Transit Authority*, 53 U.S.L.W. 4135, 4142 (U.S. Feb. 19, 1985).

⁴¹*Garcia v. San Antonio Metropolitan Transit Authority*, 53 U.S.L.W. 4135, 4142 (U.S. Feb. 19, 1985).

⁴²*Garcia v. San Antonio Metropolitan Transit Authority*, 53 U.S.L.W. 4135, 4142 (U.S. Feb. 19, 1985).

⁴³*EPA v. Brown*, 431 U.S. 99, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20375 (1977).

⁴⁴*EPA v. Brown*, 431 U.S. 99, 104, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20375, 20376 (1977). In *Griffin v. Breckenridge*, 403 U.S. 102 (1971), for example, the Court indicated that Congress probably does not have the power to “federalize” traditional areas of state common law, such as tort and contract. *Id.* at 104. More to the point, in *Coyle v. Smith*, 221 U.S. 559 (1911), it was held that a state could not be told where to locate its capitol. *Id.* at 565. These cases indicate that matters which touch upon the state’s ordering of its internal affairs are beyond the reach of affirmative federal action.

⁴⁵See H.R. Rep. No. 294, 95th Cong., 1st Sess. 288 (1977), reprinted in *United States Code Congressional and Administrative News* pp 1366-67.

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¹H.R. Rep. No. 294, 95th Cong., 1st Sess. 282-86 (1977), reprinted in, *United States Code Congressional and Administrative News* pp 1361-65. For a brutally frank, if pessimistic, evaluation of transportation controls prior to the 1977 Amendments, see Quarles, *The Transportation Control Plans—Federal Regulation’s Collision With Reality*, 2 Harv. Env’tl. L. Rev. 241 (1978).

²Pub. L. No. 95-95, 91 Stat. 685.

³H.R. Rep. No. 294, 95th Cong., 1st Sess. 288 (1977), reprinted in, *United States Code Congressional and Administrative News* p 1367.

⁴Emergency Highway Energy Conservation Act, Pub. L. No. 93-239, 87 Stat. 1046 (1974).

grants by EPA or the Department of Transportation contingent on state compliance with SIP requirements.⁵ The attainment deadline for primary and secondary air quality standards would be extended until 1987, and the states would avoid funding cutoffs and bans on new sources only if they submitted and enforced adequate SIPs with all “reasonably available control measures”—defined to include I/M programs.⁶

This new approach initially produced the same old result: litigation. EPA had set a January 1, 1979, deadline for SIP revisions; the statute required all I/M programs to be in place by December 31, 1982.⁷ California was one of two states that failed to submit an acceptable I/M program proposal with their 1979 SIP revision,⁸ and EPA consequently pursued federal funding cutoffs under its new authority.⁹ Inexorably, the differences were resolved in court.

In *Pacific Legal Foundation v. Costle*,¹⁰ the threat of a funding cutoff was challenged as an “unconstitutional coercion of the state legislature,” summoning both in spirit and in name the federalist demands of *Brown v. EPA*.¹¹ Far from the “virtual assumption of state sovereignty” attempted by EPA in *Brown*, however, the spending cutoff was a “classic ‘carrot and stick’ spending condition [of] unquestioned constitutional validity.”¹² California, the court observed, was free to reject both the federal money and the conditions attached to it. EPA now had its enforcement mechanism.

A different approach, first suggested by the D.C. Circuit in *District of Columbia v. Train*,¹³ was later upheld by the Sixth Circuit in *United States v. Ohio Department of Auto Safety*.¹⁴ EPA had sought enforcement sanctions directly against the state of Ohio under section 113(a) of the Act—which authorizes suits against any “person” who violates a SIP—because the state agency was not denying registrations to vehicles that failed an I/M test. Ohio argued that an enforcement action could not be brought against it under section 113 since it was not the polluter, and in any case the Agency was trying to compel it to enact legislative regulations. The Sixth Circuit held that the state was subject to enforcement under section 113(a) for fail-

⁵42 U.S.C.A. § 7506; see H.R. Rep. No. 294, 95th Cong., 1st Sess. 290 (1977), United States Code Congressional and Administrative News p 1369. Other forms of grants were also authorized to be withheld. See, e.g., Clean Air Act § 316(b)(2), 42 U.S.C.A. § 7616(b)(2) (sewage treatment grants); cf. Clean Air Act § 110(a)(2)(I), 42 U.S.C.A. § 7410(a)(2)(I) (construction moratorium).

⁶Clean Air Act § 172, 42 U.S.C.A. § 7502; 40 C.F.R. §§ 51.1(n)(5) & 51.12.

⁷The early deadlines were set in accordance with an internal EPA memo in 1978 from David Hawkins, then Assistant Administrator for Air, Noise and Radiation, to the Regional Administrators. See, e.g., 46 Fed. Reg. 7182-83 (1981). A later Hawkins memorandum set the 1982 I/M program deadline. See Ostrov, Inspection and Maintenance of Automotive Pollution Controls: A Decade-Long Struggle Among Congress, EPA, and the States, 8 Harv. Envtl. L. Rev. 139, 150-151 (1984).

⁸45 Fed. Reg. 81746, 81750 (1980).

⁹Clean Air Act §§ 176, 316, 42 U.S.C.A. §§ 7506, 7616.

¹⁰*Pacific Legal Foundation v. Costle*, 14 Envtl. L. Rep. Cas. (BNA) 2121 (E.D. Cal.), aff'd, 627 F.2d 917, 10 Envtl. L. Rep. (Envtl. L. Inst.) 20719 (9th Cir. 1980), cert. denied, 450 U.S. 914 (1981).

¹¹*Pacific Legal Foundation v. Costle*, 14 Envtl. L. Rep. Cas. (BNA) 2121, 2127-28 (E.D. Cal.), aff'd, 627 F.2d 917, 10 Envtl. L. Rep. (Envtl. L. Inst.) 20719 (9th Cir. 1980), cert. denied, 450 U.S. 914 (1981). See § 12:146.

¹²*Pacific Legal Foundation v. Costle*, 14 Envtl. L. Rep. Cas. (BNA) 2121, 2128 (E.D. Cal.), aff'd, 627 F.2d 917, 10 Envtl. L. Rep. (Envtl. L. Inst.) 20719 (9th Cir. 1980), cert. denied, 450 U.S. 914 (1981) (citing *Steward v. Davis*, 301 U.S. 548 (1936) and quoting *Shell Oil Co. v. Train*, 585 F.2d 408, 413-14, 9 Envtl. L. Rep. (Envtl. L. Inst.) 20023, 20025-26 (9th Cir. 1978)).

¹³*District of Columbia v. Train*, 521 F.2d 971, 987, 6 Envtl. L. Rep. (Envtl. L. Inst.) 20007, 20013 (D.C. Cir. 1975). The tactic, quoted approvingly in *United States v. Ohio Dep't of Auto Safety*, 635 F.2d 1195, 1202-03, 11 Envtl. L. Rep. (Envtl. L. Inst.) 20026, 20028 (6th Cir. 1980).

¹⁴*United States v. Ohio Dep't of Auto Safety*, 635 F.2d 1195, 11 Envtl. L. Rep. (Envtl. L. Inst.) 20026 (6th Cir. 1980).

ing to carry out the SIP, and that the state agency was only being asked to carry out ministerial acts which would not impinge upon integral state functions. EPA had only sought to deny the use of state facilities (roads and highways) to polluters. Thus, the integrity of the state was not impaired.¹⁵ The same result should attach under the constitutional analysis provided in *Garcia v. San Antonio Metropolitan Transit Authority*,¹⁶ since the state was not required to pass legislation.¹⁷

The institution of other transportation control measures did not fare so well: By and large, transportation controls were no longer required.¹⁸ Although the 1977 Amendments required the use of “all reasonably available measures” to attain the NAAQS by their now-extended deadlines,¹⁹ as a practical matter, any alternative controls went unused. The Los Angeles experience caused EPA to be more cautious, and the Agency essentially took the position that parking restrictions and gas rationing were not “reasonably available” controls. The active involvement of local officials and citizens in SIP development²⁰ generally resulted in the inclusion of few, if any, controls.²¹ Even where included, the measures accounted for only a small percentage of total emission reductions.²²

§ 12:150 The Clean Air Act Amendments of 1977—Performance warranty and short tests

The resultant emphasis on I/M programs placed a concomitant emphasis on the “short test” and “emissions performance warranty” provisions of the Act. Although pre-manufacture certification of prototypes was intended to ensure that new vehicles were designed to meet emission standards, there was no guarantee that the vehicles, once in use, would continue to meet the standards. The I/M and performance warranty programs were designed to address this gap in coverage; the short test is an integral part of each.

The panoply of programs, as they affect the ultimate purchaser of a motor vehicle, is to work as follows: Under SIP requirements, a vehicle is expected to undergo an emissions test during its “useful life”¹ at a state I/M facility. The test should mea-

¹⁵*United States v. Ohio Dep’t of Auto Safety*, 635 F.2d 1195, 1205, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20026, 20030-31 (6th Cir. 1980).

¹⁶*Garcia v. San Antonio Metropolitan Transit Authority*, 53 U.S.L.W. 4135 (U.S. Feb. 19, 1985). *EPA v. Brown*, 431 U.S. 99, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20375 (1977). See § 12:146.

¹⁷See § 12:145 notes 3–4 and accompanying text.

¹⁸See *Connecticut Fund for the Env’t, Inc. v. EPA*, 672 F.2d 998, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20306 (2d Cir. 1982).

¹⁹Clean Air Act § 172(a)(2), 42 U.S.C.A. § 7502(a)(2); see, e.g., H.R. Rep. No. 294, 95th Cong., 1st Sess. 212 (1977), reprinted in *United States Code Congressional and Administrative News* p 1291 (extension for photochemical oxidants).

²⁰See 40 C.F.R. § 51, app. U. Section 174 of the Clean Air Act, 42 U.S.C.A. § 7504, provides that SIP revisions which involve transportation controls be prepared, where possible, by an organization of elected officials of affected state and local governments. Appendix U provides guidelines for this purpose.

²¹The National Commission on Air Quality found that the “[e]mission reductions from measures contained in 1979 [SIP] submittals were minimal because most of the transportation control measures were under study for possible inclusion in 1982 plans. (An exception was the Baltimore plan, which contained 13 transportation control measures considered reasonably available.)” National Commission on Air Quality, Report of the National Commission on Air Quality 131 (1981).

²²National Commission on Air Quality, Report of the National Commission on Air Quality 131 (1981).

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¹Clean Air Act § 202(d), 42 U.S.C.A. § 7521(d) (definition of “useful life”).

sure whether a vehicle is emitting an excess of pollutants.² If the vehicle does emit an excess of pollutants, and had been maintained according to manufacturer's specifications—including the use of EPA certified emission control and control-related repair parts—the “performance warranty” would obligate the manufacturer to bear the costs of repair.³

The first hurdle EPA faced was developing an appropriate test for use in state I/M facilities. Initially, the only available test was the Federal, or long test, which measured emissions from pre-production, prototype vehicles.⁴ The long test procedures are time consuming and complex, and require monitoring by trained personnel; the long test would not be appropriate for use in I/M programs. Pursuant to section 207(b) of the Clean Air Act, therefore, EPA developed a simple and inexpensive test to measure emissions compliance for in-use vehicles; EPA-approved short tests were first published in 1980,⁵ and were intended to indicate whether a vehicle would fail the more intricate long test.⁶ The short tests were, of course, immediately challenged in court.

In *Motor Vehicles Manufacturers Association v. Ruckelshaus*,⁷ use of the short tests was upheld, although it required a fairly large degree of deference to EPA authority to prescribe standards for the tests.⁸ The underlying theme of *Motor Vehicles Association* was an impatience with the manner in which the courts had been employed to frustrate the ends of the Clean Air Act. Even though the challenged tests could not “reliably predict compliance with emission standards,”⁹ could not detect NO_x emissions, and relied upon questionable data, they were the best that could then be developed. If use of short tests had not been sustained, the use of any short test in the foreseeable future would have been impossible. The tyranny of delay, which had plagued mobile source controls almost from their inception, was coming to an end.¹⁰

Just ten days later, the second hurdle was cleared when all but one provision of

²Clean Air Act § 207(a)–(b), 42 U.S.C.A. § 7541(a)–(b).

³Clean Air Act § 207(c), 42 U.S.C.A. § 7541(c). The vehicle owner is responsible for maintenance and replacement costs for all parts “not covered by any warranty mandated by [the Act].” Clean Air Act § 207(g), 42 U.S.C.A. § 7541(g).

⁴See 40 C.F.R. pt. 86 (subpt. B).

⁵45 Fed. Reg. 34802, 34813 (1980).

⁶40 C.F.R. pt. 85 (subpt. W) (short tests).

⁷*Motor Vehicles Manufacturers Association v. Ruckelshaus*, 719 F.2d 1159, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21063 (D.C. Cir. 1983).

⁸A three-point attack was made on the short tests. First, the admission that the tests were unreliable was contended to make them functionally “unavailable” to indicate “compli[ance] with the emission standards,” in derogation of section 207(b)(i). Second, the tests were alleged not to have been developed in accordance with “good engineering practices” required by section 207(b)(ii), and that they were not “reasonably capable of being correlated” with the long test, as required by section 207(b)(iii). *Motor Vehicles Manufacturers Association v. Ruckelshaus*, 719 F.2d 1159, 1164–67, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21063, 21064–68 (D.C. Cir. 1983). Each point of attack was rebutted by a court apparently bent on upholding the use of short tests. First, the tests would identify *failing* vehicles with reasonable accuracy, and were therefore “available.” Second, EPA’s engineering data were sufficient under the “highly deferential” standard of review. Third, the failure of the long and short tests to correlate exactly actually inured to the benefit of the manufacturers. In particular, the tests were recognized as a reasonable accommodation of various competing concerns: “Congress did not intend to require the impossible task of developing a ‘quick’ test” with the accuracy of the long test. Rather, Congress wanted a practical test that would accommodate “consumer convenience, improved air quality and the technical accuracy which would ensure that manufacturers were not forced to ‘repair’ significant numbers of properly functioning vehicles.” *Id.* at 1168, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) at 21068.

⁹45 Fed. Reg. 34802, 34813 (1980).

¹⁰The court emphasized language from the legislative history of the 1970 Clean Air Act Amendments which admonished that it was necessary to “*speed up*, expand, and intensify the war against

the performance warranty program for repair of emission control systems was upheld in *Automotive Parts Rebuilders Association v. EPA*.¹¹ In a long, heavily-footnoted, and ultimately deferential opinion, the court rebuffed attempts to effectively dismantle the warranty program, again displaying a sensitivity to the dilatory effects of a contrary decision.¹² Notably, the court held that manufacturers were to make all repairs necessary to both emissions control parts and those other parts whose failure caused or was caused by the failure of an emissions control device.¹³

The third hurdle was cleared when *Specialty Equipment Market Association (SEMA) v. Ruckelshaus*,¹⁴ decided the same day as *Automotive Parts Rebuilders*, required EPA to permit aftermarket parts manufacturers to have their parts certified so as to satisfy the requirements for use in the emissions performance warranty. Previously, vehicle manufacturers had been allowed to condition the warranty on the use of repair parts sold and installed by the manufacturers themselves. Because of the anticompetitive effects of this practice, vehicle manufacturers were no longer permitted to refuse to honor an emission system warranty if the failing part was produced or installed by someone other than the manufacturer; so long as the part was certified, the warranty was good.¹⁵

The result of *SEMA* is, first, that “all emission-related components,” not merely those whose primary purpose is emission reduction, may be certified, making it easier for the owner to repair the vehicle without voiding the warranty.¹⁶ Second, aftermarket parts are only required not to result in a car exceeding emission standards, even though the repair part might actually cause an increase of emissions

pollution.” *Motor Vehicles Manufacturers Association v. Ruckelshaus*, 719 F.2d 1159, 1165, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21063, 21066 (D.C. Cir. 1983) (quoting H.R. Rep. No. 91-1146, at 1, reprinted in United States Code Congressional and Administrative News p 5356) (emphasis added by court).

¹¹*Automotive Parts Rebuilders Association v. EPA*, 720 F.2d 142, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21069 (D.C. Cir. 1983).

¹²Among other things, the court brusquely rejected an industry argument that the certification program had to be in place as an “absolute prerequisite” to the enforceability of the warranty program since it neither made any “practical sense” nor served any “rational purpose.” *Automotive Parts Rebuilders Association v. EPA*, 720 F.2d 142, 149-50, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21069, 21072-73 (D.C. Cir. 1983).

¹³*Automotive Parts Rebuilders Association v. EPA*, 720 F.2d 142, 151-55, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21069, 21073-76 (D.C. Cir. 1983). During the vehicle's first twenty-four months or 24,000 miles, all parts affecting emissions are warranted. After this period, only specified parts are covered, but included are replacement parts whose sole or primary purpose is to reduce emissions. Replacement parts were included both to ensure the continuing efficacy of emission control systems over the vehicle's useful life and to prevent the anti-competitive potential of the warranty program: It was feared that the aftermarket parts industry would be bypassed when emission control repairs were necessary because owners would either not make the repairs or would only have repairs made at the manufacturer's designated outlet so as not to void their warranty by repairing with uncertified parts. See 45 Fed. Reg. 34838 (1980); *Automotive Parts Rebuilders Association v. EPA*, 720 F.2d 142, 154, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21069, 21075 (D.C. Cir. 1983).

¹⁴*Specialty Equipment Market Association (SEMA) v. Ruckelshaus*, 720 F.2d 124, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21080 (D.C. Cir. 1983).

¹⁵*Specialty Equipment Market Association (SEMA) v. Ruckelshaus*, 720 F.2d 124, 128-29, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21080, 21081-82 (D.C. Cir. 1983). The emissions control system performance warranty regulations and aftermarket parts certification program is found at 40 C.F.R. §§ 85.2101 to 85.2122. “The only requirement is that parts used [for repair] must be certified.” A Legislative History of the Clean Air Act Amendments of 1977, 95th Cong., 2d Sess. 772 (Comm. Print 1978) (Statement of Sen. Stafford) (quoted in *Automotive Parts Rebuilders Association v. EPA*, 720 F.2d 142, 158 n.62, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21069, 21078 n.62 (D.C. Cir. 1983)).

¹⁶*Specialty Equipment Market Association (SEMA) v. Ruckelshaus*, 720 F.2d 124, 134, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21080, 21085 (D.C. Cir. 1983); 45 Fed. Reg. 78451 (1980).

over the original certification level for the vehicle.¹⁷ Third, “specialty parts”—parts that “alter or go beyond the original equipment included in a vehicle after production”¹⁸—are also eligible for certification. All these provisions allow the owner greater flexibility in maintaining the vehicle; he is not forever wedded to a particular design or level of performance of the auto to be covered by the warranty.

Consequently, vehicle owners may only be slightly inconvenienced by I/M and its associated programs. The time and out-of-pocket expenses are minimal, and have been favorably compared with existing state safety inspection programs.¹⁹ If a vehicle fails an I/M test, the owner need only follow the procedure for a warranty claim contained in the owner’s manual and warranty booklets.²⁰ Generally, a vehicle owner will bring the vehicle to an authorized repair facility (usually the dealer), where the vehicle will be repaired so that it will conform to emission standards. The manufacturer bears all costs associated with the repair, including whatever fines, penalties, and other assessments were incurred by the owner by reason of the failure;²¹ after twenty-four months or 24,000 miles, however, the manufacturer is responsible only for costs of repair or adjustments for those parts that are primarily or solely designed for emission control, or for other components the adjustment or repair of which is necessary for the proper performance of the emissions device.²² Repair must be made within thirty days; if the manufacturer is unable or unwilling to honor the warranty claim, the owner must be notified in writing.²³ These procedures seem to give manufacturers an incentive to repair, rather than resist, emissions problems within their control.

The Clean Air Act’s once-vast vision of a comprehensive system of automotive transportation controls, however, is now primarily limited to state I/M programs; these, at least, have apparently gained a measure of public acceptance.²⁴ The system of nonattainment sanctions provided by the 1977 Amendments, which were proven effective in *Pacific Legal Foundation v. Costle*,²⁵ have generally been persuasive in encouraging states to comply with I/M program requisites. With a few exceptions, protracted litigation—the hallmark of the program’s early years—has been avoided.²⁶ More passive measures taken to reduce tailpipe emissions, such as production

¹⁷Specialty Equipment Market Association (SEMA) v. Ruckelshaus, 720 F.2d 124, 133, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 21080, 21084-85 (D.C. Cir. 1983).

¹⁸Specialty Equipment Market Association (SEMA) v. Ruckelshaus, 720 F.2d 124, 135, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 21080, 21086 (D.C. Cir. 1983).

¹⁹Ostrov, Inspection and Maintenance of Automotive Pollution Controls: A Decade-Long Struggle Among Congress, EPA, and the States, 8 Harv. Env’tl. L. Rev. 139, 164-65, 182-85 (1984).

²⁰40 C.F.R. § 85.2109.

²¹40 C.F.R. § 85.2106(a).

²²40 C.F.R. § 85.2107(a)(1) to (2).

²³40 C.F.R. § 85.2106(d) to (e).

²⁴Ostrov, Inspection and Maintenance of Automotive Pollution Controls: A Decade-Long Struggle Among Congress, EPA, and the States, 8 Harv. Env’tl. L. Rev. 139, 191 (1984).

²⁵See § 12:147 notes 10-15.

²⁶Pennsylvania has provided a notable exception. The state failed to implement the I/M program prescribed for it, and in 1976 a citizen’s group brought suit to compel implementation. In 1977, EPA instituted its own suit. A consent decree was entered into by all three litigants in 1978. The I/M program was to be in place by 1980, but the compliance deadline was later extended to 1981. A second extension was refused. Following the refusal, the Pennsylvania state legislature declined to release authorized funds for the I/M program over the governor’s veto. In 1982, the district court accordingly held the state and two of its officials in civil contempt. In addition, the federal court order prevented the Department of Transportation from awarding highway grants to the state. The sanctions were upheld on appeal. See *Delaware Valley Citizen’s Council for Clean Air v. Pennsylvania*, 533 F. Supp. 869, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20191 (E.D. Pa. 1982), *aff’d*, 678 F.2d 470, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20631 (3d Cir. 1982), *cert. denied*, 459 U.S. 969 (1982).

controls and the reduction of the lead content in gasoline,²⁷ have been less controversial among the public, if not more effective overall.²⁸

§ 12:151 Federal assistance limitations and construction moratoria

The Clean Air Act Amendments of 1977 added sections which required states to revise their SIPs for areas that had not yet attained the NAAQS (so-called nonattainment areas).¹ The new SIPs have to conform to specific requirements contained in sections 172 and 173 of the Act; the plans generally must provide for attainment of the primary NAAQS by the end of 1982. Under section 172(a)(2), however, if a state could demonstrate that it would be unable to meet the NAAQS for CO or ozone by then, EPA could grant an extension for compliance until, but not later than, the end of 1987.² The grant of an extension was conditioned on the state agreeing to undertake the additional responsibilities imposed by section 172(b), which included plans for the establishment of a “specific schedule for implementation of a vehicle emission control inspection and maintenance program.”³ The program had to be in place no later than the end of 1982.⁴ The revised SIPs of twenty-eight states and the District of Columbia included such plans, and all were granted a NAAQS compliance extension until the end of 1987.⁵ Regardless, many states were either unable or unwilling to start their I/M programs on time.⁶

The Clean Air Act supplies three forms of sanctions EPA might apply to noncomplying states. The first is a ban on permits for the construction or modification of major stationary pollution sources, under sections 110(a)(2)(I) and 173(4).⁷ There are actually two forms of the construction permit ban provided by these sections. The first is triggered solely by operation of section 110(a)(2)(I). Under it, construction permits may issue in a nonattainment area only if the SIP “meets the

In 1983, the state released funds for their I/M program, and the district court vacated its order freezing highway funds, apparently putting the matter to rest. *Ostrov, Inspection and Maintenance of Automotive Pollution Controls: A Decade-Long Struggle Among Congress, EPA, and the States*, 8 Harv. Envtl. L. Rev. 139, 159 (1984). Later in 1983, however, the Pennsylvania Supreme Court held that the terms of the 1978 consent decree could not be complied with because it was entered into without legislative authority. *Scanlon v. Commonwealth*, 467 A.2d 1108, 14 Envtl. L. Rep. (Envtl. L. Inst.) 20146 (Pa. 1983). In January 1984, the Pennsylvania I/M program was enjoined. In 1985, the Third Circuit held that the federal court’s consent decree was *res judicata* in subsequent state court proceedings under the full faith and credit clause, and affirmed the district court’s refusal to vacate its decree on the basis of the state court’s holding in *Scanlon*. *Delaware Valley Citizens’ Council for Clean Air v. Pennsylvania*, 755 F.2d 38, 15 Envtl. L. Rep. (Envtl. L. Inst.) 20202 (3d Cir. 1985), cert. denied, 106 S. Ct. 67 (1985).

For a more sedate account of the imposition of noncompliance penalties, see *New Mexico Envtl. Improvement Div. v. Thomas*, 789 F.2d 825, 16 Envtl. L. Rep. (Envtl. L. Inst.) 20647 (10th Cir. 1985) (withholding of highway funds); *Dressman v. Costle*, 759 F.2d 548, 15 Envtl. L. Rep. (Envtl. L. Inst.) 20434 (6th Cir. 1985) (construction moratorium).

²⁷See 40 C.F.R. part 85 (control of emissions from engines); 40 C.F.R. part 80 (regulation of fuels and fuel additives).

²⁸See § 12:123.

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¹Clean Air Act §§ 171–178, 42 U.S.C.A. §§ 7501–7508 (added by Pub. L. No. 95-95, § 129(b), 91 Stat. 746-50 (1977), as amended by Pub. L. No. 95-190, § 14(a)(55)–(58), 91 Stat. 1402-03 (1977)).

²Clean Air Act § 172(a)(2), 42 U.S.C.A. § 7502(a)(2).

³Clean Air Act § 172(b)(11)(B), 42 U.S.C.A. § 7502(b)(11)(B).

⁴The deadlines were imposed by an internal EPA memo, dated July 17, 1978, from Assistant Administrator David Hawkins to all Regional Administrators. See § 12:147 note 7.

⁵See 48 Fed. Reg. 35312 (1983).

⁶See 48 Fed. Reg. 35312 (1983).

⁷42 U.S.C.A. §§ 7410(a)(2)(I), 7503(4).

requirements of Part D,”⁸ which specifies the contents of acceptable SIPs for nonattainment areas. If the SIP is inadequate or incomplete, no permit for a “major source” of the pollutant for which the area is designated nonattainment may issue: It is a penalty for the failure to plan.

The second form of the permit ban is triggered by section 173(4), in combination with section 110(a)(2)(I). This tandem provides that where an “acceptable implementation plan is being carried out” (i.e., one which meets the Part D requirements), construction permits required by section 172 of the Act may be issued. That section, in turn, refers back to the section 110(a)(2)(I) nonattainment area construction permit requirement. If a SIP has been approved, therefore, but is not being complied with, no permit may issue. Thus, sections 110(a)(2)(I) and 173(4) work together to ban the construction or modification of sources in areas where a SIP has been approved and is in place, but is unfulfilled: It is a penalty for the failure to act on the plan.⁹

The construction permit moratoriums are neither sanctions nor penalties: they are measures to protect air quality.¹⁰ Section 110(a)(2)(I) undoubtedly encourages states to develop SIPs; and in conjunction with section 173(4), it encourages states to act on their SIPs, once approved. In the absence of state action, the statutory ban applies to protect public health.

Both forms of the construction permit ban appear to be nondiscretionary and triggered by operation of law. EPA has nevertheless found some maneuvering room: For example, the ban does not apply to “major” stationary sources in a “political subdivision” of a nonattainment area, if EPA has found that the SIP is adequate for that part, even though the plan is generally inadequate; this avoids penalizing jurisdictions that have I/M plans or do not need them.¹¹ A 1980 EPA memorandum concluded that the ban does not apply to areas in which only the secondary standards are exceeded.¹² As well, because the construction permit ban only applies to the “construction” or “modification” of a “major stationary source,” regulations have provided some definitional maneuvering room within these terms—such as what constitutes a “major” source or when a “modification” of the source is made.¹³

A second method at EPA’s disposal to encourage a noncomplying state to correct SIP deficiencies is a limitation on federal grants. Section 176(a) denies federal transportation funds for highway construction projects and Clean Air Act funds for state pollution control agencies under section 105, in cases where a state has not submitted a SIP.¹⁴ Although couched in mandatory, nondiscretionary language, the section 176(a) funding limitations are essentially discretionary: Only if EPA finds

⁸The Part D requirements are contained at Clean Air Act §§ 171–178, 42 U.S.C.A. §§ 7501–7508 (“Plan Requirements for Nonattainment Areas”).

⁹See also § 12:91 (discussion of bans as applied to new sources or modifications).

¹⁰See *NRDC v. Gorsuch*, 685 F.2d 718, 727 n.40, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20942, 20947 n.40 (D.C. Cir. 1982); see also § 12:146 notes 27–44 and accompanying text (discussion of Tenth Amendment problems associated with direct federal actions against states).

¹¹40 C.F.R. § 52.24(j).

¹²Memorandum from Michael A. James, Associate General Counsel for Air, Noise and Radiation, to Richard G. Rhoads, Director of Control Programs Development Division (Oct. 7, 1980), *summarized at* 11 Env’t Rep. (BNA) 950 (1980). *But see* D. Currie, *Air Pollution: Federal Law and Analysis* § 6.06 (1981) (criticizing memorandum’s conclusion).

¹³See generally 40 C.F.R. § 52.24. See also §§ 12:92–12:96 (discussion of definitions of these and other terms). A “major” source is one which has the capacity to emit 100 tons or more of a pollutant. Clean Air Act § 302(j), 42 U.S.C.A. § 7602(j); 40 C.F.R. § 52.24(f)(4). It can include a modification or expansion of an existing stationary source. 40 C.F.R. § 52.24(f)(10). See also 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 30001 (1983) (discussion of nonattainment area sanctions).

¹⁴42 U.S.C.A. § 7506(a)(1), (2), (3) prohibit the approval of projects or grants under the Clean Air Act or by the Transportation Department where the primary NAAQS have not been met, where TCPs

that the state is not making “reasonable efforts” to submit an implementation plan is a funding cutoff made.¹⁵ Once the finding of noncompliance is made, however, there is no further discretion and funds must be limited. A parallel funding cutoff is supplied by section 176(b) in the case where a state has submitted a SIP, and it is approved, but the state is failing to implement it. The central difference between the two is that the provision for the denial of federal highway funds in section 176(a) is not contained in section 176(b).¹⁶

Finally, section 176(c) admonishes federal departments and agencies not to engage in, fund, or otherwise support activities that are not “in conformity” with a state’s SIP.¹⁷

The funding cutoff device should be precisely tailored to avoid the manifestly self-defeating effects of denying the very funds needed for pollution control; some limits on a heavy-handed application are contained in the text of the Act itself. Section 176(a) exempts from cutoff transportation funds for “safety, mass transit, or transportation improvement projects related to air quality improvement.”¹⁸ As well, by regulation, the funding limitations may only be applied to a portion of an AQCR, or only to particular state agencies which administer the SIPs with federal funds, “if the purpose of the limitation would be better served through a more selective application.”¹⁹

In practice, EPA relies on both the construction moratoria and funding limitations to encourage state compliance. When EPA proposed to withhold Clean Air Act section 105 funds from Pennsylvania in 1982, it calculated the amount based on the proportion of the state’s population in the area in which the I/M program was required. In some areas, this represented all section 105 funding; where the state’s pollution control authority had jurisdiction over an area greater than that for which an I/M program was required, the amount to be withheld was proportionately less.²⁰ EPA’s “preferred method,” first articulated in an August 3, 1983, *Federal Register* notice,²¹ is similar: Under it, EPA

add[s] all Clean Air Act funds which would be awarded to all levels of government in the State, and [withholds] from that total a percentage equal to the percentage of the State’s population residing in the non-implementation I/M urbanized areas. Direct grants made to local government agencies responsible for I/M implementation would be affected first, with any remaining restrictions to be applied against State [section 105] funds. If the State is the only level of government responsible for I/M implementation, EPA would subtract from the amount to be withheld from the State any funds that are

are necessary to meet the primary NAAQS, and that a SIP has not been submitted or if “reasonable efforts” have not been taken to do so.

¹⁵Clean Air Act § 176(a)(3), 42 U.S.C.A. § 7506(a)(3).

¹⁶*Compare* Clean Air Act § 176(a), 42 U.S.C.A. § 7506(a) *with* Clean Air Act § 176(b), 42 U.S.C.A. § 7506(b); *see also* New Mexico Env’tl. Improvement Div. v. Thomas, 789 F.2d 825, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20647 (10th Cir. 1986).

¹⁷42 U.S.C.A. § 7506(c).

¹⁸42 U.S.C.A. § 7506(a).

¹⁹45 Fed. Reg. 24695, 24696 (1980).

²⁰47 Fed. Reg. 9478 (1982). The funding cutoff was prompted by the legislature’s prohibition of the expenditure of funds for any I/M program, and was the subject of the extensive *Delaware Valley Citizen’s Council* litigation. *See* § 12:148 note 26. EPA initiated the cutoff action well prior to the December deadline because it was apparent that the state would not comply with their SIP on time with respect to the I/M program. 47 Fed. Reg. 7477 (1982). In addition to the proportional calculation, EPA withheld \$172,000 not yet awarded from a total of \$400,000 authorized for Pennsylvania’s I/M project. EPA noted at the time that once Pennsylvania restored its I/M program, the funds would also be restored. 47 Fed. Reg. 9478 (1982).

²¹48 Fed. Reg. 35312-13 (1983).

granted directly to local government agencies in the urbanized area.²²

EPA “prefers” this formula, even though it does not “prefer” to withhold funds, because it “automatically accounts for reductions in States’ allocation of State funds to local areas that receive direct [federal] grants as well.”²³ It is also more precise than alternative methods considered by EPA, insofar as all federal grants to a state are considered: It avoids “overstating the percentage of state funds that could be withheld under a method based on population distribution,” such as was the case with the Pennsylvania plan in 1982.²⁴ In *New Mexico Environmental Improvement Division v. Thomas*,²⁵ this method was tested, and approved, by the Tenth Circuit Court of Appeals when EPA cut off funds for parts of New Mexico.²⁶

A third form of sanction, a limitation on funds for sewage treatment works under section 316(b) of the Act, has only been applied twice—to California and Colorado in 1980²⁷—and apparently has been abandoned.²⁸ This funding limitation is wholly discretionary, but is permissible only if the treatment works is itself a major source of pollution for which the NAAQS has not been achieved. Because it is, in most cases, environmentally counterproductive, it is also the least desirable,²⁹ which probably accounts for its lack of use.

§ 12:152 The Clean Air Act Amendments of 1990

As a part of the 1990 Amendments to the Clean Air Act, Congress directed EPA

²²48 Fed. Reg. 35313 (1983).

²³48 Fed. Reg. 35313 (1983).

²⁴48 Fed. Reg. 35313 (1983).

²⁵*New Mexico Environmental Improvement Division v. Thomas*, 789 F.2d 825, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20647 (10th Cir. 1986).

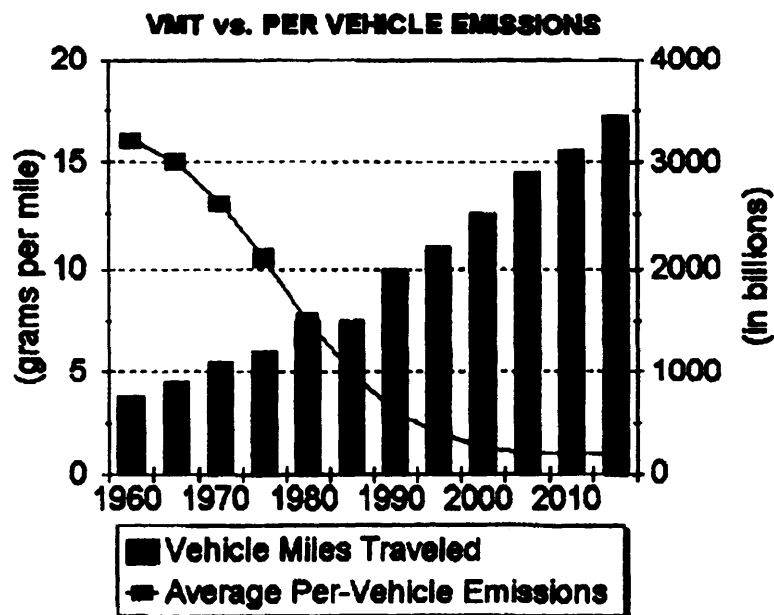
²⁶In *Chapman v. Lune*, 678 P.2d 687 (N.M. 1984), New Mexico's I/M program was invalidated as contrary to state law. EPA thereupon notified the state that its SIP would be disapproved. 49 Fed. Reg. 34866 (1984). Since the state did not revise its SIP, both the funding limitations and the construction moratorium were applied. 50 Fed. Reg. 8616 (1985). This was done in accordance with the “preferred method,” identified in the August 1983 *Federal Register* notice. 48 Fed. Reg. 35313 (1983). Various challenges were made to the application of this method, but none successfully. Perhaps the most significant point is that although the state's SIP had been approved and the I/M program was operational for seventeen months, the funding limitation also reached the federal highway funds, in addition to the Clean Air Act section 105 funds. The highway funds are only permitted to be withheld under section 176(a) for failure to submit a complete and adequate SIP, while under section 176(b) the nonimplementation of an approved SIP only allows the cutoff of section 105 funds. It would seem that the failure of the SIP lay in its implementation; however, since a satisfactory SIP is required to have legally enforceable provisions—which New Mexico's did not—the defect was in the SIP itself, and not with its implementation. *New Mexico Env'tl. Improvement Div. v. Thomas*, 789 F.2d 825, 832, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20647 (10th Cir. 1986).

²⁷The sewage treatment sanction, Clean Air Act § 316, 42 U.S.C.A. § 7616, was applied against California in 1980 for that state's failure to submit a nonattainment plan revision. *See* 45 Fed. Reg. 59180 (1980) (proposed rule). The final rule retained the ban, but EPA reserved discretion in its application. 45 Fed. Reg. 81752 (1980). The application of the sewage treatment works sanction against Colorado was similar, and the state capitulated by providing for an I/M program, whereupon the funding limitation was lifted. *See* *Mountain States Legal Found. v. Costle*, 630 F.2d 754, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20769 (10th Cir. 1980).

²⁸Of all the methods available to EPA to encourage SIP compliance, the Agency “prefers” to use the combination of the construction permit ban and funding limitations. *See* 48 Fed. Reg. 35312 (1983). The use of the term “prefer” is misleading, however, since EPA probably does not wish to withhold the very funds earmarked for state air pollution improvement programs. Withholding some amount of funds is unavoidable, however, under the terms of the Act, and EPA tries to limit the amount. 45 Fed. Reg. 81752 (1980).

²⁹EPA noted that cutting off funds for the construction of sewage treatment works could be counterproductive, and declined to apply the sanction in such cases even when EPA had decided to apply the sanction generally. *See* 45 Fed. Reg. 81752 (1980).

and the states to address the two remaining barriers to reducing mobile source emissions: deterioration of motor vehicle performance and an increase in vehicle miles traveled (VMT) that is projected to offset the benefits of cleaner vehicles and cleaner vehicle fuels. The 1990 Amendments expanded the scope of the I/M program to ensure that vehicle emission levels do not substantially increase during the vehicle's useful life. The amendments also revived requirements for nonattainment areas to mitigate the impacts of projected increases in VMT.¹ The graph below illustrates the anticipated reductions in per-vehicle emissions due to the more stringent emission standards in the short term and the anticipated increase in VMT that will offset future motor vehicle emission reduction gains.²



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¹The two trillion vehicle miles traveled in 1992 represents a doubling of VMT in the last twenty years. EPA's projections indicate that the steady growth in VMT is continuing. 57 Fed. Reg. 52950 (1992).

²U.S. EPA, Office of Mobile Sources, Automobiles and Ozone 3.

§ 12:153 The Clean Air Act Amendments of 1990—Inspection and maintenance provisions—The next step in tightening emission Standards—Congressional requirements

The 1990 Amendments to the Clean Air Act require states to implement or improve I/M programs in regions that failed to meet NAAQS. Congress required EPA to publish guidance for I/M programs in the *Federal Register* by November 15, 1991,¹ and required states to incorporate this guidance into their SIPs. This guidance was to afford states flexibility to propose effective, reasonable, and fair programs. SIPs required either a basic or more stringent “enhanced” I/M program, depending on the severity of the pollution problem. An enhanced I/M program should contain certain minimum elements, including the operation of a centralized inspection program, and should meet EPA-promulgated performance standards. Further, EPA was required to update basic I/M guidance to cover minimum features regarding type and extent of program.

The amendments established specific deadlines for nonattainment areas to submit particular SIPs or SIP revisions that include specific remedial measures. To enforce these deadlines, EPA is required to impose statutory sanctions if a state fails to correct a deficiency within eighteen months after disapproval or failure to submit.² These sanctions include imposing stricter offset requirements for new stationary sources and withholding approval of highway projects and grants. If a state does not have a complete SIP approved within two years after such disapproval or finding, EPA must promulgate a Federal Implementation Plan (FIP) for that state.³ Further, EPA may apply the sanctions any time after disapproving, in whole or in part, on making a finding of incompleteness.⁴ EPA must find the submittal to be complete or incomplete within two months of submission, or six months of the submission deadline.⁵ If the submittal is complete, EPA has twelve months to approve, disapprove, or conditionally approve it.⁶

§ 12:154 The Clean Air Act Amendments of 1990—Inspection and maintenance provisions—The next step in tightening emission Standards—SIP deadlines

Basic I/M SIPs must be submitted and take effect immediately after November 15, 1990, by all states encompassing ozone nonattainment areas classified as marginal to extreme.¹ These SIPs are to include provisions necessary to provide for a vehicle I/M program that is no less stringent than either that in effect before November 15, 1990, or the program already included in the plan, whichever is more stringent.²

Carbon monoxide (CO) nonattainment areas with a design value of 12.7 parts per million (ppm) or less must submit, by November 15, 1992, a comprehensive, ac-

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¹Clean Air Act § 182(c)(3)(B), 42 U.S.C.A. § 7511a(c)(3)(B).

²Clean Air Act § 179(a), (b), 42 U.S.C.A. § 7509(a), (b).

³Clean Air Act § 110(c)(1), 42 U.S.C.A. § 7410(c)(1).

⁴Clean Air Act § 110(m), 42 U.S.C.A. § 7410(m).

⁵Clean Air Act § 110(k)(1)(B), 42 U.S.C.A. § 7410(k)(1)(B).

⁶Clean Air Act § 110(k)(2)–(4), 42 U.S.C.A. § 7410(k)(2)–(4).

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¹Clean Air Act § 182(a)(2)(B)(i), (b)(4), 42 U.S.C.A. § 7511a(a)(2)(B)(i), (b)(4).

²Clean Air Act § 182(a)(2)(B)(i), (b)(4), (c), (d), (e), 42 U.S.C.A. § 7511a(a)(2)(B)(i), (b)(4), (c), (d), (e).

curate, and current inventory of actual emissions from all sources.³ Areas with a design value above 12.7 ppm at the time of classification must submit, by November 15, 1992, a plan containing a forecast of VMT for each year up to the year forecast to meet the CO NAAQS.⁴

Enhanced I/M SIPs must be submitted and take effect by November 15, 1992, for all states encompassing ozone nonattainment areas classified as serious, severe, and extreme, and for certain metropolitan areas in ozone transport regions.⁵ These SIPs are to include provisions necessary for an enhanced I/M program that encompasses on-road emission testing (including the I/M-240 test method), tampering inspections, misfueling for all light-duty vehicles and all light-duty trucks, and that meets EPA's performance standard as published in the *Federal Register*.⁶ The D.C. Circuit has ordered EPA to accelerate review of previously submitted SIPs in order to compensate for the Agency's delay in publishing enhanced I/M guidelines.⁷

Moderate CO nonattainment areas with a design value greater than 12.7 ppm,⁸ and serious CO nonattainment areas⁹ must submit, by November 15, 1992, SIPs analogous to those required for serious ozone nonattainment areas. However, the purpose of the program is to reduce CO rather than hydrocarbon or volatile organic compound emissions.

§ 12:155 The Clean Air Act Amendments of 1990—Inspection and maintenance provisions—Changes in the inspection and maintenance provisions

The enhanced I/M program fundamentally changes the way mobile sources are inspected. Programs in serious,¹ severe,² and extreme³ ozone nonattainment areas, and in CO nonattainment areas with a design value greater than 12.7 ppm in urban areas with a population of 200,000 or more,⁴ are required to utilize “centralized” testing facilities. A centralized I/M program reduces the number of test facilities in a major metropolitan area from hundreds or thousands to “tens” of facilities. EPA's goal in moving to a smaller number of high-volume test facilities was to achieve comprehensive quality control and cost-effective enforcement. The shift to a centralized system recognizes the result of thirty-eight covert audits of test facilities in Missouri, in which 84 percent of the stations falsely passed vehicles EPA had preset to fail.⁵

EPA recognized that the enhanced I/M program could create significant

³Clean Air Act § 187(a)(1), 42 U.S.C.A. § 7512a(a)(1).

⁴Clean Air Act § 187(a)(2)(A), 42 U.S.C.A. § 7512a(a)(2)(A).

⁵Ozone transport regions, which are created by the EPA Administrator, include regions of interstate transport of air pollutants from one or more states that violate NAAQS in one or more other states.

⁶Clean Air Act § 182(c)(3)(B), 42 U.S.C.A. § 7511a(c)(3)(B).

⁷Natural Resources Defense Council v. EPA, 22 F.3d 1125, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20836 (D.C. Cir. 1994). The court required completeness findings by July 15, 1994, and final approvals by September 15, 1994. *Id.* at 1136-37, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) at 20841. *See* § 12:154.

⁸Clean Air Act § 187(a)(2)(A), 42 U.S.C.A. § 7512a(a)(2)(A).

⁹Clean Air Act § 187(b), 42 U.S.C.A. § 7512a(b).

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¹Clean Air Act § 182(c)(3), 42 U.S.C.A. § 7511a(c)(3).

²Clean Air Act § 182(d), 42 U.S.C.A. § 7511a(d).

³Clean Air Act § 182(e), 42 U.S.C.A. § 7511a(e).

⁴Clean Air Act § 187(a)(6), 42 U.S.C.A. § 7512a(a)(6).

⁵57 Fed. Reg. 52950, 52974 (1992).

implementation problems. In addition to forcing citizens to search for a limited number of centralized testing facilities, the final rule does not allow testing and repairs to be undertaken at the same facility.⁶ Therefore, EPA was acutely aware that the centralized I/M program may subject citizens to a “ping-pong effect,” whereby they may have to travel from a testing facility to a separate repair station and then return to the testing facility to ensure that the repairs corrected the emissions control problems.⁷ Additionally, the Clean Air Act Amendments of 1990 increase the maximum repair costs a citizen is required to expend from approximately \$100 to \$450.⁸

The enhanced I/M program created new requirements for the testing for, and possible repair of, evaporative emissions. The evaporative emission tests in the enhanced I/M program include pressure and purge tests. These tests monitor the effectiveness of the vapor recovery and recirculation mechanisms installed on vehicles since 1971 and were adopted in response to EPA studies that identified evaporative emissions to be a greater source of hydrocarbon emissions than emissions from tailpipes.⁹ The enhanced I/M test also provides, for the first time, a test for nitrogen oxides.

The amendments also incorporate two new technologies that offer the potential for a fast and convenient way to identify high-emitting vehicles: on-board diagnostic (OBD) systems and on-road testing.¹⁰ OBD systems utilize the vehicle’s computers to monitor the performance of the emission control systems. They are a required design element of an enhanced I/M program¹¹ and primarily monitor the performance of the vehicle’s catalytic converter. Beginning January 1, 2002, OBD-equipped 1996 and newer model year vehicles subject to enhanced testing will be required to pass only an OBD inspection.¹² Alternatively, states will be allowed a one-test-cycle phase-in whereby repair and retest would be required for only those vehicles that also failed a subsequent tailpipe test.¹³ States showing “good cause” would receive an additional year still.¹⁴ Depending on the length of the state’s cycle, these allowances could effectively extend the deadline as far as January 1, 2005.¹⁵ States wishing to start early are encouraged to do so, but will not receive any extra credit for their action.¹⁶ It should be noted that, while EPA is confident the OBD program will ultimately succeed, it does recognize the fact that the aging of today’s OBD systems may eventually spell the need for follow-up tailpipe testing of vehicles containing

⁶According to EPA, the inherent problem with decentralized test-and-repair facilities is the incentive on the part of unlicensed and ill-trained testers to pass cars for a quick fee rather than perform time-consuming repairs. *See* Natural Resources Defense Council v. EPA, 22 F.3d 1125, 1149, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20836, 20848 (D.C. Cir. 1994).

⁷57 Fed. Reg. 52950, 52961 (1992).

⁸Clean Air Act § 182(c)(3), 42 U.S.C.A. § 7511a(c)(3).

⁹57 Fed. Reg. 52950, 52951 (1992).

¹⁰U.S. EPA, Office of Mobile Sources, Clean Cars for Air: I/M Programs Fact Sheet 3 (OMS-14) (July 1992).

¹¹Clean Air Act § 202(m), 42 U.S.C.A. § 7521(m).

¹²Amendments to Vehicle Inspection Maintenance Program Requirements Incorporating Onboard Diagnostic Check, 66 Fed. Reg. 18156 (Apr. 5, 2001) (codified at 40 C.F.R. parts 51, 85).

¹³Amendments to Vehicle Inspection Maintenance Program Requirements Incorporating Onboard Diagnostic Check, 66 Fed. Reg. 18156 (Apr. 5, 2001) (codified at 40 C.F.R. parts 51, 85).

¹⁴Amendments to Vehicle Inspection Maintenance Program Requirements Incorporating Onboard Diagnostic Check, 66 Fed. Reg. 18156 (Apr. 5, 2001) (codified at 40 C.F.R. parts 51, 85).

¹⁵Amendments to Vehicle Inspection Maintenance Program Requirements Incorporating Onboard Diagnostic Check, 66 Fed. Reg. 18156 (Apr. 5, 2001) (codified at 40 C.F.R. parts 51, 85).

¹⁶Amendments to Vehicle Inspection Maintenance Program Requirements Incorporating Onboard Diagnostic Check, 66 Fed. Reg. 18156 (Apr. 5, 2001) (codified at 40 C.F.R. parts 51, 85).

those systems.¹⁷ By design, on-road testing, which is also a required design element of an enhanced I/M program,¹⁸ supplements the periodic I/M requirements. EPA guidelines require the program to sample randomly the lesser of 0.5 percent of the vehicle fleet statewide or 20,000 vehicles.¹⁹

In theory, states have the flexibility to design their own I/M programs.²⁰ States may not, however, adopt a decentralized enhanced I/M program without demonstrating equivalency to a centralized program by restricting the facility to test-only functions.²¹ If a state adopts a decentralized test-and-repair program without demonstrating equivalency, EPA reduces by 50 percent the emission credits the state earns toward meeting the performance standard.²²

§ 12:156 The Clean Air Act Amendments of 1990—Inspection and maintenance provisions—Challenges to EPA’s final rulemaking

In *Natural Resources Defense Council v. EPA*,¹ both the Natural Resources Defense Council (NRDC), and the National Automobile Dealers Association (NADA) challenged EPA’s final I/M rulemaking. NRDC challenged the rule’s effective date and implementation date and EPA’s refusal to require I/M in sparsely populated rural areas in ozone transport regions. Relying on *Chevron, U.S.A., Inc. v. Natural Resources Defense Council*,² the D.C. Circuit upheld EPA’s construction of the Clean Air Act.

The NRDC contended that EPA’s “conditional approval” of significantly incomplete SIPs violated congressional intent and delayed statutory deadlines, and urged the court to make findings of immediate noncompliance for areas that failed to submit SIPs within the statutory timeframes. However, recognizing that it was unrealistic for states to meet SIP deadlines because the Agency itself was late in promulgating guidance for I/M programs, the court held that although EPA misused its conditional approval, the Agency’s failure to meet its deadline warranted an adjustment of the SIP deadlines.³ The court also ordered EPA to accelerate its schedule for SIP

¹⁷Amendments to Vehicle Inspection Maintenance Program Requirements Incorporating Onboard Diagnostic Check, 66 Fed. Reg. 18156 (Apr. 5, 2001) (codified at 40 C.F.R. parts 51, 85).

¹⁸57 Fed. Reg. 52950, 52957 (1992).

¹⁹57 Fed. Reg. 52950, 52957 (1992).

²⁰In some states, such as Colorado, environmental regulators will be allowed to use remote sensing equipment in certain areas as part of the state’s enhanced vehicle emission inspection and maintenance programs. Colorado: Governor Signs Bills on Vehicle Pollution, Performance Initiatives, Species Protection, 29 Env’t Rep. (BNA) 332 (June 5, 1998).

²¹A range of voluntary programs such as free bus services, commuter ride-sharing programs, and other voluntary efforts to reduce mobile source emissions will be eligible for clean air credit from the EPA under a guidance document planned for release in October 1997. With the new guidance, states will be able to take that credit in their state implementation plans. Voluntary Programs to Gain EPA Credit in Upcoming Guidance, Official Says, 28 Env’t Rep. (BNA) 988 (Sept. 26, 1997).

²²The National Automobile Dealers Association unsuccessfully challenged this action as an “arbitrary bias” against test-and-repair networks in *Natural Resources Defense Council v. EPA*, 22 F.3d 1125, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20836 (D.C. Cir. 1994). See § 12:154.

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¹*Natural Resources Defense Council v. EPA*, 22 F.3d 1125, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20836 (D.C. Cir. 1994).

²*Chevron, U.S.A., Inc. v. Natural Resources Defense Council*, 467 U.S. 837, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20507 (1984).

³*Natural Resources Defense Council v. EPA*, 22 F.3d 1125, 1135-37, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20836, 20840-41 (D.C. Cir. 1994).

findings.⁴

The NRDC further argued that EPA's flexible performance standards were unduly lenient. While upholding EPA's discretion in setting annual performance standards, including the exemption of older vehicles from high-technology emissions testing,⁵ the court struck down EPA's decision to exclude older vehicles from visual inspections to detect tampering, and remanded the case with instructions to EPA to recalibrate its standard after including all relevant tests.⁶ Finally, the NRDC contended that EPA impermissibly narrowed the geographic scope by exempting certain rural areas from the northeast ozone transport region and from basic I/M programs in moderate nonattainment areas. EPA reasoned that the difficulty of implementing high-technology enhanced I/M programs in rural areas, and the trivial reduction of emissions that such I/M programs could make, justified the exemption of such areas.⁷ The court held that EPA acted reasonably to exempt such rural areas.⁸

NADA challenged EPA's "arbitrary bias" against decentralized test-and-repair stations. The court held that the final rules and the determination to reduce SIP credits for a decentralized program were clearly within the Agency's authority.⁹ Interestingly, NADA also challenged EPA's promulgation of the final regulations through rulemaking and not as guidance. The court determined that NADA, which was a party to the rulemaking, lacked standing to challenge the method by which the regulations were adopted.¹⁰

§ 12:157 The Clean Air Act Amendments of 1990—Inspection and maintenance provisions—State responses

Unlike the D.C. Circuit, the states responsible for implementing the centralized I/M program have expressed an intolerance for the program. While some states have opposed various components of the program, others have rejected adoption of the enhanced I/M program altogether. In those states that have tried to comply with EPA's final rule, implementation has been suspended due to public opposition.

Maine was the first state to implement the centralized I/M testing system. Poor acceptance and public demands for abolishing the program led to its suspension by the governor two months after it was implemented.¹ Customer dissatisfaction with the centralized system due to long lines, confusing test reports, and expensive fees and repairs, were blamed for the public outcry. On April 27 and 28, 1995, Maine's

⁴Natural Resources Defense Council v. EPA, 22 F.3d 1125, 1136-37, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20836, 20841 (D.C. Cir. 1994). See § 12:152.

⁵Natural Resources Defense Council v. EPA, 22 F.3d 1125, 1143-44, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20836, 20845 (D.C. Cir. 1994).

⁶Natural Resources Defense Council v. EPA, 22 F.3d 1125, 1144, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20836, 20845 (D.C. Cir. 1994).

⁷Natural Resources Defense Council v. EPA, 22 F.3d 1125, 1140, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20836, 20843 (D.C. Cir. 1994).

⁸Natural Resources Defense Council v. EPA, 22 F.3d 1125, 1141, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20836, 20843 (D.C. Cir. 1994).

⁹Natural Resources Defense Council v. EPA, 22 F.3d 1125, 1148-49, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20836, 20847-48 (D.C. Cir. 1994).

¹⁰Natural Resources Defense Council v. EPA, 22 F.3d 1125, 1147, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20836, 20847 (D.C. Cir. 1994).

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¹Aldo Svaldi, Colorado Hoping to Avoid Maine Emission Woes, Denver Bus. J., Sept. 16, 1994, at 4.

Governor Angus King signed legislation terminating the state's I/M program.² Governor King proposed an alternative plan involving "continued use of reformulated gasoline, installation of vapor controls on retail gas pumps, and rules to limit pollution caused by other consumer products."³ Despite initial warnings that such action could trigger mandatory sanctions cutting off millions of dollars in federal highway funding,⁴ EPA Region I Administrator John DeVillars approved the state's plan, thus precluding the imposition of sanctions.⁵

California rejected an exclusive centralized testing system and opted for a combination of test-only and test-and-repair stations. Under this "hybrid" system,⁶ only vehicles six years and older must be inspected at a centralized system of test-only stations. Presumably the worst polluters, these vehicles make up 60 percent of the California fleet. Newer vehicles, which are cleaner and have a low failure rate, may be inspected at test-and-repair stations at the owner's option. Although EPA grudgingly accepted this hybrid plan, it initially discouraged other states from following suit. The Agency cautioned that California had "the most extensive and expensive enforcement program in the country" and tougher inspection requirements.⁷

Similarly, Colorado opted for a hybrid inspection system. Unlike California, however, Colorado's centralized inspection focuses on newer vehicles, which comprise the greatest percentage of vehicles on the road. Under the program, only motor vehicles manufactured after 1982 must be inspected at centralized test-only stations. New cars are exempt from inspection for five years and vehicles manufactured before 1981 may be inspected at decentralized test-and-repair stations at the owner's option.⁸ To encourage more efficient test procedures, Colorado imposed fines totaling \$81,600 against the contractor operating the state's I/M-240 program, for wait-time violations in March and April 1995.⁹

Delaware emphatically rejected the I/M-240 test, indicating that it is not cost-effective. Governor Thomas Carper reasons that modeling data indicate emissions reductions achieved from implementing the I/M-240 are small in comparison to the state's capital and operating expenses and the costs to the consumer.¹⁰ He also claims that EPA did not follow Congress' mandate to provide "continuous reasonable flexibility" to states,¹¹ and has requested regulatory relief from the "burdensome requirement." In response, EPA indicated that the state was in jeopardy of

²1995 Me. I.B. 2, 117th Leg., 1st Sess. (enacted Apr. 27, 1995) (repealing Me. Rev. Stat. Ann. tit. 29-A, § 403 and *id.* tit. 38, ch. 28); 1995 Me. H.P. 54, 117th Leg., 1st Sess. (enacted Apr. 28, 1995) (same).

³Law Signed to End Auto Emission Tests; State Eyes Other Measures to Cut Ozone, 26 Env't Rep. (BNA) 30 (May 5, 1995).

⁴Law Signed to End Auto Emission Tests; State Eyes Other Measures to Cut Ozone, 26 Env't Rep. (BNA) 30 (May 5, 1995).

⁵Across the USA: News from Every State, USA Today, July 28, 1995, at 8A.

⁶See Letter from Mary D. Nichols, Assistant Administrator for Air and Radiation, EPA, to Howard Yerusolim, Secretary, Pennsylvania Department of Transportation (Mar. 14, 1994) (on file with the Environmental Law Institute).

⁷See Letter from Mary D. Nichols, Assistant Administrator for Air and Radiation, EPA, to Howard Yerusolim, Secretary, Pennsylvania Department of Transportation (Mar. 14, 1994) (on file with the Environmental Law Institute).

⁸Colo. Rev. Stat. § 42-4-310.

⁹Colorado Fines Emissions Contractor Second Time, 26 Env't Rep. (BNA) 33 (May 5, 1995).

¹⁰Letter from Thomas R. Carper, Governor, State of Delaware, to Carol Browner, Administrator, EPA (Sept. 28, 1994) (on file with the Environmental Law Institute).

¹¹See Clean Air Act § 182(a)(2)(B)(ii), 42 U.S.C.A. § 7511a(a)(2)(B)(ii).

receiving mandatory Clean Air Act sanctions.¹²

Similarly, in its consideration of a bill to amend the Commonwealth's I/M program to continue some version of the existing test-and-repair system, the Virginia legislature rejected adopting the enhanced I/M program. EPA notified Governor George Allen that Virginia's proposed program of test-and-repair stations does not meet the performance standard requirements of EPA's I/M rule. The Agency warned that discretionary sanctions would be imposed if the Commonwealth passed measures that prevented compliance with federal I/M regulations.¹³ In January 1995, the Commonwealth filed suit in the Eastern District of Virginia challenging the constitutionality of the I/M program as well as the sanctions used to enforce it.¹⁴

§ 12:158 The Clean Air Act Amendments of 1990—Inspection and maintenance provisions—EPA's response

Despite EPA's initial reluctance concerning hybrid I/M programs outside California, the Agency has relented by implementing a second, less stringent "low-enhanced" I/M performance standard, which may be met by a comprehensive decentralized test-and-repair program.¹ This standard is designed for nonattainment areas that can meet all of the 1990 Clean Air Act Amendments requirements for reasonable further progress and attainment while implementing an I/M program that falls below the originally promulgated enhanced I/M performance standard.² The new rules include the combined use of older and newer technologies, other than the more costly I/M-240 test; a phase-in period for more lenient waiver provisions;³ and a change in the minimum population cutoff for basic I/M programs from a 1990 census of 50,000 to 200,000 people for moderate ozone or carbon monoxide nonattainment areas outside the Ozone Transport Region.⁴ In July 1996, EPA implemented a supplemental rule that added a special low-enhanced performance stan-

¹²Letter from Carol Browner, Administrator, EPA, to Thomas R. Carper, Governor, State of Delaware (on file with author).

¹³Letter from Mary D. Nichols, Assistant Administrator for Air and Radiation, EPA, to George F. Allen, Governor, Commonwealth of Virginia (Feb. 8, 1994) (on file with the Environmental Law Institute).

¹⁴The Commonwealth argued that the Clean Air Act § 182 requirements for VOC reduction plans and I/M programs violated the Tenth Amendment by requiring the Virginia legislature to enact legislation. Virginia further argued that sanctions were not rationally related to the objective of federal highway funding and, therefore, violated the implied limitations of the Spending Clause of the Constitution. Because the Commonwealth brought its challenge in district court rather than circuit court, as required by Clean Air Act § 307(b)(1), 42 U.S.C.A. § 7607(b)(1), the district court dismissed the action for lack of subject matter jurisdiction. That dismissal was affirmed on appeal. *Commonwealth of Virginia v. United States*, 74 F.3d 517, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 20816 (4th Cir. 1996). The court later denied the Commonwealth's direct petition for review, holding that Clean Air Act Title V and its sanction provisions violate neither the Tenth Amendment nor the Spending Clause. *Commonwealth of Virginia v. Browner*, 80 F.3d 869, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 21245 (4th Cir. 1996).

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¹60 Fed. Reg. 48029 (Sept. 18, 1995) (codified at 40 C.F.R. part 51).

²60 Fed. Reg. 48032 (Sept. 18, 1995).

³The more lenient waiver provisions extend the deadline to January 1998 for full implementation of the minimum expenditure required for waiver eligibility under both basic and enhanced I/M programs. The provisions also allow states to include in the minimum waiver determination qualified repair expenditures made within sixty days of the initial test. Under the new rules, motorists are no longer limited to a single hardship exemption during the life of the vehicle. 60 Fed. Reg. 48031 (Sept. 18, 1995).

⁴60 Fed. Reg. 48029, 48033 (Sept. 18, 1995).

dard for qualified areas in Ozone Transport Regions.⁵

Utilizing the new “low-enhanced I/M performance standard,” EPA approved California’s SIP revision, which the state submitted literally hours before federal sanctions were to go into effect.⁶ California’s revised plan calls for test-only facilities in the most populated areas, the use of remote sensing to identify and route gross emitters to the test-only facilities, and new acceleration stimulation mode (ASM) equipment at the state’s 6,000 test-and-repair stations.⁷

Sensing EPA’s lack of resolve, states began implementing modified I/M programs that no longer met the originally promulgated performance standards. For example, on May 1, 1995, Texas Governor George Bush signed legislation authorizing the use of BAR-90 technology to test 90 percent of vehicles annually via a decentralized program, to be enforced by the Department of Public Safety.⁸ The contractor originally hired to conduct centralized vehicle emission testing in three of four ozone nonattainment areas in Texas filed suit the following day, seeking \$150 million in damages.⁹ The contractor alleges that the state violated the state constitution’s prohibition against enacting laws that impair contractual rights and benefits. As of this writing, six other states have passed or are considering legislation or regulation that falls short of the originally promulgated performance standards.¹⁰

In 1999, EPA responded to state and congressional pressure to reduce the lack of flexibility in its I&M program by proposing, “Additional Flexibility Amendments to Vehicle Inspection Maintenance Program Requirements.”¹¹ The Proposed Rule would delete 40 C.F.R. § 51.353(b), which penalizes repair and test facilities, and would explicitly allow test-only facilities to provide a full range of services not directly related to automotive repair.

The proposed rule allows states to obtain SIP credits for a program that provides “comparability, not necessarily equivalency.” Accordingly, EPA is proposing to allow states the flexibility to utilize non-centralized I&M programs, as well as substituting “clean screening” where clean vehicles can be identified by remote sensing for exemption from a program’s requirements.

A recent report from the National Academy of Sciences is critical of I/M programs, noting that states have been granted substantial emissions-reduction credits based

⁵61 Fed. Reg. 39031 (July 25, 1996) (codified at 40 C.F.R. pt. 51).

⁶Hybrid Inspection/Maintenance Program Approved by EPA, Halting Sanctions Threat, 26 Env’t Rep. (BNA) 570 (July 14, 1995).

⁷Hybrid Inspection/Maintenance Program Approved by EPA, Halting Sanctions Threat, 26 Env’t Rep. (BNA) 570 (July 14, 1995).

⁸1995 Tex. S.B. 178, 74th Reg. Sess. (enacted May 1, 1995) (amending Tex. Health & Safety Code Ann. § 382.037); *see also* Governor Signs Legislation Modifying State Vehicle Emissions Testing Plan, 26 Env’t Rep. (BNA) 31 (May 5, 1995).

⁹Tejas Testing Technology One L.C. v. Texas, No. 95-05037 (Tex. Dist. Ct. filed May 2, 1995); *see also* Texas Sued by Emissions Testing Contractor, 26 Env’t Rep. (BNA) 206 (May 12, 1995). The operating contractors hired by the managing contractor to run each facility subsequently intervened. The managing contractor reached a settlement with the State, while the operating contractors lost on appeal. *Texas v. Tejas Testing Tech. One, Inc.*, No. 95-14621, 1998 WL 54265 (Tex. App. 1998); *Texas/Operating Contractors ABS Emissions, Inc. v. Operating Contractors/Texas*, 985 S.W.2d 646 (Tex. App. 1999).

¹⁰*See, e.g.*, Georgia Announces Vehicle Emissions Testing Plan, 26 Env’t Rep. (BNA) 234 (May 19, 1995); New Jersey I/M Program Approved by Assembly, 26 Env’t Rep. (BNA) 34 (May 5, 1995); Decentralized I/M Program Proposed for New York City, Four Upstate Areas, 26 Env’t Rep. (BNA) 260 (May 26, 1995); *see also* 1995 Me. Laws 493; 1995 N.H. H.B. 607, ch. 103, 1995 Reg. Sess. (enacted May 16, 1995); 1994 N.J. S.B. 1700, 206th Leg., 2d Sess. (enacted June 2, 1995) (amending P.L. 1994, ch. 67) (to be codified as the Federal Clean Air Mandate Compliance Act, P.L. 1995, ch. 112); 1995 Or. H.B. 3448, 68th Leg. (enacted June 10, 1995) (vetoed by Governor John Kitzhaber July 21, 1995).

¹¹64 Fed. Reg. 45491 (1999). The rule was finalized at 65 Fed. Reg. 45526 (July 24, 2000).

on EPA modeling despite the finding that actual reductions attributable to these programs are from zero to one-half of predicted levels.¹² It is furthermore suggested that program efficiency would be increased by focusing more on the few high-emitting vehicles disproportionately contributing to emissions, and less on newer ones.¹³

With this strategy in mind, the Denver Regional Air Quality Council envisions evaluating by 2006, 80 percent of the vehicle fleet operating in the Denver metro area with remote sensing, resulting in 60 to 70 percent of the registered vehicles being exempted from routine IM240 testing, while both maintaining the CO NAAQS and saving money.¹⁴ This represents the maximum level of attempted coverage recommended by EPA.¹⁵ The Colorado Air Quality Control Commission has a similar vision, citing IM240 testing as the single greatest expenditure within the inspection program.¹⁶

Use of remote sensing for clean screening will typically reduce the credit ascribable to the I/M program because some vehicles with high tailpipe emissions may appear clean in a remote sensing test and will be excused from I/M tailpipe testing and repair for that I/M cycle.¹⁷ Also, remote sensing cannot identify low versus high emitting vehicles with respect to evaporative hydrocarbon emissions.¹⁸ However, pilot studies have demonstrated that these losses will not necessarily have a negative effect on overall compliance with air standards.¹⁹ St. Louis is the first city to fully implement a remote-sensing program,²⁰ with a goal of exempting 40 percent of its vehicles through a combination of model-year exemptions and clean-screening.²¹

In 1999, a number of eastern states initiated a diesel I&M program not required by EPA in an effort to reduce particulate emissions from diesel vehicles. New York

¹²Nat'l Research Council, *Evaluating Vehicle Emissions Inspection and Maintenance Programs*, Prepublication Copy (2001).

¹³Nat'l Research Council, *Evaluating Vehicle Emissions Inspection and Maintenance Programs*, Prepublication Copy (2001).

¹⁴Denver Reg'l Air Quality Council, *Options to Reform the Current Inspection/Maintenance Program, A Report to the Governor, the General Assembly, and the Air Quality Control Commission* (Aug. 30, 2000); see also 11 Colo. Code Regs. § 1001-13 part A (IV.D) (2001) (phase-in schedule).

¹⁵EPA, Office of Mobile Sources, *Technical Highlights, Clean Screening in Inspection and Maintenance Programs* (May 1998) (guidance doc. no. 420-F-98-023); see also EPA, *Description and Documentation for Interim Vehicle Clean Screening Credit Utility, Draft Report* (May 1998) (guidance doc. no. 420-P-98-008).

¹⁶Colo. Dep't of Pub. Health and Env't, *Draft Report to the Colorado General Assembly on the Vehicle Emissions Inspection and Maintenance Program* (2001).

¹⁷Approval and Promulgation of Air Quality Implementation Plans; State of Colorado; Denver Carbon Monoxide Redesignation to Attainment, Designation of Areas for Air Quality Planning Purposes, and Approval of Related Revisions, 66 Fed. Reg. 44097 (proposed Aug. 22, 2001).

¹⁸Approval and Promulgation of Air Quality Implementation Plans; State of Colorado; Denver Carbon Monoxide Redesignation to Attainment, Designation of Areas for Air Quality Planning Purposes, and Approval of Related Revisions, 66 Fed. Reg. 44097 (proposed Aug. 22, 2001).

¹⁹Approval and Promulgation of Air Quality Implementation Plans; State of Colorado; Denver Carbon Monoxide Redesignation to Attainment, Designation of Areas for Air Quality Planning Purposes, and Approval of Related Revisions, 66 Fed. Reg. 44097 (proposed Aug. 22, 2001); see also Colo. Dept. of Pub. Health and Env't, "The Denver Remote Sensing Clean Screening Pilot, Final Report" (Dec.1999); see also Colo. Dept. of Pub. Health and Env't, "The Greeley Remote Sensing Pilot Program, Final Report" (Jan. 5, 1998).

²⁰Mo. Dep't of Natural Res., Div. of Env'tl. Quality, *FAQ*, available at <http://www.gatewaycleanair.com/rpdscrn/rpdfaq.htm#14>.

²¹Approval and Promulgation of Implementation Plans; State of Missouri; St. Louis Inspection and Maintenance (I/M) Program, 65 Fed. Reg. 8097 (proposed Feb. 17, 2000).

adopted a diesel I&M program²² and entered into a Memorandum of Understanding with Maine, Maryland, Massachusetts, New Hampshire, Rhode Island, and Vermont. The Memorandum of Understanding between the states establishes smoke opacity standards and an agreement to ticket violators of the program. The states will coordinate roadside I&M inspections.

§ 12:159 The Clean Air Act Amendments of 1990—Transportation control measures—Changes to the transportation control measures provisions

Recent court decisions and the Clean Air Act Amendments of 1990 have renewed both the vigor and necessity of nonattainment areas' implementation of transportation control measures (TCMs). In *Delaney v. EPA*,¹ the Ninth Circuit ruled that Arizona nonattainment areas that failed to meet mandatory Clean Air Act deadlines were required to implement all of the "reasonably available control measures" set forth in section 108(f) of the Clean Air Act. The court directed EPA to disapprove SIPs for the Arizona nonattainment areas and to promulgate a FIP that implements all of the reasonably available control measures.²

In response to *Delaney*, Congress deleted the requirement that nonattainment areas adopt all of section 108(f)'s TCMs.³ However, Congress added new provisions to section 108 and reaffirmed that certain nonattainment areas must implement TCMs to offset increases in vehicle miles traveled. As modified, section 108(f) identifies the following TCMs that, at a minimum, must be evaluated by an ozone nonattainment area:⁴

- (i) programs for improved public transit;
- (ii) restriction of certain roads or lanes to, or construction of such roads or lanes for use by, passenger buses or high occupancy vehicles;
- (iii) employer-based transportation management plans, including incentives;
- (iv) trip-reduction ordinances;
- (v) traffic flow improvement programs that achieve emission reductions;
- (vi) fringe and transportation corridor parking facilities serving multiple occupancy vehicle programs or transit service;
- (vii) programs to limit or restrict vehicle use in downtown areas or other areas of emission concentration particularly during periods of peak use;
- (viii) programs for the provision of all forms of high-occupancy, shared-ride services;
- (ix) programs to limit portions of road surfaces or certain sections of the metropolitan area to the use of non-motorized vehicles or pedestrian use, both as to time and place;

²²N.Y. Comp. Codes R. & Regs. tit. 6, § 200.9, subparts 217-3, 217-5 (1999).

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¹*Delaney v. EPA*, 898 F.2d 687, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20460 (9th Cir.), cert. denied sub nom. *Reilly v. Delaney*, 498 U.S. 998 (1990).

²EPA moved to rescind the federal contingency provisions of the FIP adopted pursuant to *Delaney* and approved in their place two contingency measures contained in a revised state plan. In 1997, the Ninth Circuit struck down this move, holding that both the law of the case and collateral estoppel precluded EPA from arguing that its actions were mandated by the 1990 Clean Air Act Amendments. *Disimone v. Browner*, 121 F.3d 1262, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 21490 (9th Cir. 1997).

³136 Cong. Rec. S16933, S16971 (daily ed. Oct. 27, 1990) (statements of Sen. Chafee and Sen. Baucus).

⁴In the *General Preamble to Title I of the Clean Air Act: Guidance on Development of State Implementation Plans*, EPA has limited vehicle miles traveled offset requirements to ozone nonattainment areas. 57 Fed. Reg. 13498, 13521 (1992).

- (x) programs for secure bicycle storage facilities and other facilities, including bicycle lanes, for the convenience and protection of bicyclists, in both public and private areas;
- (xi) programs to control extended idling of vehicles;
- (xii) programs to reduce motor vehicle emissions, consistent with [Title II], which are caused by extreme cold start conditions;
- (xiii) employer-sponsored programs to permit flexible work schedules;
- (xiv) programs and ordinances to facilitate non-automobile travel, provision and utilization of mass transit, and to generally reduce the need for single-occupant vehicle travel, as part of transportation planning and development efforts of a locality, including programs and ordinances applicable to new shopping centers, special events, and other centers of vehicle activity;
- (xv) [in consultation with the Secretary of the Interior,] programs for new construction and major reconstructions of paths, tracks or areas solely for the use by pedestrian or other non-motorized means of transportation when economically feasible and in the public interest . . . ; and
- (xvi) program[s] to encourage the voluntary removal from use and the marketplace of pre-1980 model year light duty vehicles and pre-1990 model light duty trucks.⁵

However, in *Ober v. EPA*, the 9th Circuit reversed itself in part when it recognized EPA's discretion to alter its previous policy of presuming all of the TCM's to be "reasonably available," to one of consideration on an area-specific basis.⁶

In *McCarthy v. Thomas*,⁷ the Ninth Circuit held that EPA's failure to incorporate by reference the previously approved portions of Arizona's SIP, when the Agency subsequently conditionally approved revisions to the SIP, did not invalidate the prior approvals. In so holding, the court acknowledged the value of an incremental approach to attaining air quality goals as quickly as possible.

As with other provisions of Title I, the extent to which TCMs must be evaluated and implemented is controlled by the nonattainment area's classification. Serious areas must submit a demonstration as to whether emission levels and "parameters" are consistent with an attainment demonstration. If these measures exceed the attainment demonstration, the serious area must submit a SIP revision that includes a TCM program that consists of, but is not limited to, section 108(f) measures intended to reduce emission levels to the attainment demonstration.⁸

Severe and extreme nonattainment areas must submit additional SIP revisions that implement section 108(f) measures to offset any growth in emissions resulting from increases in vehicle miles traveled or number of vehicle trips.⁹ Accordingly, areas where growth in vehicle miles traveled occurs but does not result in an increase in emissions would not be required to implement TCMs.¹⁰

Although it is possible for severe and extreme areas to avoid implementing many TCMs, section 187(d)(1)(B) of the Clean Air Act contains a mandatory employer-based, work-related TCM. Severe and extreme areas were required to submit a SIP

⁵Clean Air Act § 108(f)(1)(A), 42 U.S.C.A. § 7408(f)(1)(A).

⁶*Ober v. EPA*, 84 F.3d 304, 311, 312, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 21157 (9th Cir. 1996).

⁷*McCarthy v. Thomas*, 27 F.3d 1363, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21119 (9th Cir. 1994) (holding that previously approved provisions requiring Tucson and Phoenix to enlarge their mass transportation systems were binding on the two cities).

⁸Clean Air Act § 182(c)(5), 42 U.S.C.A. § 7511a(c)(5).

⁹Clean Air Act § 182(c)(5), 42 U.S.C.A. § 7511a(c)(5); Clean Air Act § 182(d)(1), 42 U.S.C.A. § 7511a(d)(1).

¹⁰57 Fed. Reg. 13498, 13521-22 (1992).

revision by November 1992 that obligates employers with more than 100 employees to reduce commuting trips by at least 25 percent. Additionally, extreme areas are granted the authority to impose traffic control measures that reduce the use of “high polluting” or heavy-duty vehicles during “heavy traffic hours.”¹¹

Employers’ frustration over the mandatory nature of the provision, and the limited success of those states implementing an employee commute option (ECO) program,¹² led EPA to convene an advisory committee to evaluate alternatives. In an April 1995 draft report, the committee recommended that state or regional programs to curb employee commuter trips should replace the employer-based plans mandated by the Clean Air Act. Such plans would average trip reductions across the region rather than require each employer to show a 25 percent reduction. The report also suggests using alternatives to meet ECO requirements, including “investing in clean fuel vehicles, using remote sensing to identify high polluters, implementing state or regional ride-sharing programs, buying emission credits, and implementing vehicle scrappage programs.”¹³ Near the end of 1995, Congress responded to criticism of the provision by amending section 182(d)(1)(B) to allow states to decide whether or not to impose mandatory employer-based, work-related TCM.¹⁴

Although EPA can only require states to have ECO programs, and it is up to the states to choose whether to enforce them, companies that do not show a good-faith effort to comply may be sued by third parties.¹⁵ The ramifications of EPA’s backpedaling on ECO programs is evident in Illinois where, on June 30, 1995, Governor James Edgar signed legislation barring the Illinois Department of Transportation from enforcing its ECO program unless EPA publishes a notice of proposed sanctions against the state for program failures.¹⁶

The National Air Quality and Telecommuting Act of 1999¹⁷ directed EPA to establish a pilot program to evaluate the efficacy of telecommuting on air quality.¹⁸ Participating employers would receive credits reflecting the amount of reductions in such emissions achieved through reduced vehicle-miles-traveled by their telecommuting employees.¹⁹

This program has so far proven a hard-sell in at least one participating city,²⁰ Denver, Colorado. There, EPA refused to certify or even evaluate state legislation

¹¹Clean Air Act § 182(e)(4), 42 U.S.C.A. § 7511a(e)(4).

¹²*See, e.g.,* State, Regional Programs Preferable to Current ECO Program, Work Group Says, 26 Env’t Rep. (BNA) 20, 21 (May 5, 1995) (reporting on results in California’s South Coast Air Quality Management District).

¹³State, Regional Programs Preferable to Current ECO Program, Work Group Says, 26 Env’t Rep. (BNA) 20, 21 (May 5, 1995) (reporting on results of advisory committee’s April 26, 1995, draft report).

¹⁴Pub. L. No. 104-70, 109 Stat. 773 (1995).

¹⁵Pub. L. No. 104-70, 109 Stat. 773 (1995).

¹⁶1995 Ill. S.B. 364, 89th Leg., 1995-96 Reg. Sess. (enacted June 30, 1995) (amending section 60 of the Employee Commute Options Act).

¹⁷*See* <http://www.ecommute-nepi.org/homeorg.html>.

¹⁸Department of Transportation and Related Agencies Appropriations Act, 2000, Pub. L. No. 106-69, § 365, 113 Stat. 986.

¹⁹Department of Transportation and Related Agencies Appropriations Act, 2000, Pub. L. No. 106-69, § 365, 113 Stat. 986.

²⁰Denver Reg’l Air Quality Council, *Metropolitan Denver Selected for Pilot Project*, Summer 2001 Air Exchange 7, available at <http://www.raqc.org/newsletters/summer2001.pdf>; the other cities are Washington, D.C., Houston, Philadelphia, and Los Angeles. *See* Department of Transportation and Related Agencies Appropriations Act, 2000, Pub. L. No. 106-69, § 365(b), 113 Stat. 986; *see also* Press Release, Houston-Galveston Area Council, *Majority Whip Tom Delay and Judge Robert Eckels To Launch ecommute Program in Houston* (Aug. 15, 2001), available at <http://www.hgac.cog.tx.us/transportation/notices/pub081701.html>.

governing open market trading of emissions credits until it had developed a standard of its own.²¹ It has since promulgated guidance on the matter.²² Historically, Colorado has seen little interest in any kind of emissions credits trading program, and is waiting to gauge employer response before resubmitting its legislation to EPA.²³ However, without an infrastructure for trading, the direct economic incentive is lost. That is, participating employers can't generate or trade any credits until the state resubmits a plan, and the state won't develop the trading program until it sees sufficient interest. Furthermore, Denver is on the cusp of being reclassified as an attainment area,²⁴ thus further diminishing any incentive for participation.

In Texas, where the non-attainment problem is much more severe, the legislature has reacted by establishing organizations that enable generators to donate credits earned to the maintenance of regional caps in exchange for a federal tax deduction.²⁵ Los Angeles is the only participating city to have an approved trading program, which includes provisions for cross-trades between mobile and stationary sources, but only for oxides of nitrogen.²⁶

Section 187 of the Act applies the TCM provisions to CO nonattainment areas. Moderate CO nonattainment areas must forecast projected increases in vehicle miles traveled.²⁷ Serious areas and Denver, Colorado,²⁸ must submit SIP revisions that include the TCMs set forth in section 182(d)(1) of the Act. However, unlike the requirements for ozone nonattainment areas, serious CO areas and Denver may avoid implementing TCMs if the implementation plan "contain[s] an explanation of why such measure was not adopted and what emissions reduction measure was adopted to provide a comparable reduction in emissions, or reasons why such reduction is not necessary to attain the [NAAQS] for [CO]."²⁹

§ 12:160 The Clean Air Act Amendments of 1990—Transportation control measures—Transportation control measures and land use planning

As required under section 108(f)(3), the Secretary of Transportation and the EPA Administrator submitted to Congress a report on the effectiveness of TCMs. Ironically, the report determined that "[r]ecent modeling . . . shows that combinations of congestion reduction measures, including highway capacity expansion, and improvements to ridesharing programs, transit and other TCMs produce only 1 to 2 percent

²¹Letter from Richard R. Long, Dir., Air and Radiation Program, EPA, to Margie Perkins, Director, Air Pollution Control Div., Colo. Dep't of Health and Env't (Nov. 7, 2000) (on file with recipient); *see also* 5 Colo. Code Regs. § 1001-7 (2001) (Generic Emissions Trading and Banking).

²²EPA, *Improving Air Quality with Economic Incentive Programs* (Jan. 2001) (guidance doc. no. 452/R-01-001).

²³Denver Reg'l Air Quality Council, *ecommuter FAQ* (on file with author).

²⁴Approval and Promulgation of Air Quality Implementation Plans; State of Colorado; Denver Carbon Monoxide Redesignation to Attainment, Designation of Areas for Air Quality Planning Purposes, and Approval of Related Revisions, 66 Fed. Reg. 44097 (proposed Aug. 22, 2001).

²⁵Tex. Health & Safety Code Ann. § 384 et seq. (Vernon 2001) (establishing "Area Emission Reduction Credit Organizations" or "AERCOS" under § 501(c)(3) of the Internal Revenue Code); *see also* 30 Tex. Admin. Code § 101.300 et seq. (West 2001) (Emission Credit Banking and Trading rules).

²⁶Telephone interview with Mark Simons, Office of Transportation and Air Quality, EPA Region 5 (Oct. 4, 2001); *see also* Revisions to the California State Implementation Plan, South Coast Air Quality Management District, 66 Fed. Reg. 41174 (proposed Aug. 7, 2001); *see also* Calif. South Coast Air Quality Mgmt. Dist. Reg. XX (2001), available at <http://www.aqmd.gov/rules/html/tofc20.html>.

²⁷Clean Air Act § 187(a)(2), 42 U.S.C.A. 7512a(a)(2).

²⁸Section 187(a)(2)(B)'s "special rule for Denver" requires that the Denver metropolitan nonattainment area evaluate all measures required in section 182(d)(1)(A) of the Act. The special rule specifically excludes a reference to the employer-based trip reduction program.

²⁹Clean Air Act § 187(a)(2)(B), (b)(2), 42 U.S.C.A. § 7512a(a)(2)(B), (b)(2).

reductions in emissions without concomitant travel reduction efforts such as increased travel costs or restrictions and policies to increase land use density.”¹ Thus, the report concluded that TCMs are not effective, and it also implied that nonattainment areas should examine controlling land use patterns as an air pollution mitigation strategy: “Better understanding of the relationships [among] land use patterns, travel patterns and air quality will be needed to respond to the challenge of reducing transportation’s contribution to air quality.”²

The Clean Air Act Amendments of 1990, however, contain provisions that express an intent to avoid imposition of land use controls to reduce air pollution. Section 110(a)(5) limits the authority of the Administrator to require, as a condition of SIP approval, any indirect source review program.³ Additionally, section 131 clarifies the limited nature of federal involvement in land use controls: “Nothing in this [Act] constitutes an infringement on the existing authority of counties and cities to plan or control land use, and nothing in this [Act] provides or transfers authority over such land use.”⁴ In fact, TCMs selected by states are to “ensure adequate access to downtown, other commercial, and residential areas and should avoid measures that increase or relocate emissions and congestion rather than reduce them.”⁵

§ 12:161 The Clean Air Act Amendments of 1990—Transportation control measures—The Intermodal Surface Transportation Efficiency Act and conformity determination: The carrot and the stick

Through enactment of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991,¹ Congress created a funding mechanism for surface transportation programs. ISTEA established the \$6 billion Congestion Mitigation and Air Quality Improvement Program (CMAQ). The CMAQ’s funding provisions are limited to TCMs listed in section 108 of the Clean Air Act or measures included in an EPA-approved SIP.² Additionally, CMAQ funds cannot be spent on highway construction, except for high-occupancy vehicle lanes.³

By amending section 176(c) of the Clean Air Act, Congress established a powerful mechanism for insuring that nonattainment areas institute long-range transportation planning and implement TCMs necessary to achieve and maintain NAAQS. Section 176(c)’s “conformity” provisions are designed to integrate transportation and air quality planning.⁴ Since the 1993 promulgation of the transportation conformity provisions, they have been amended three times.⁵ The primary purpose of the amendments has been to streamline the process and add flexibility, while maintain-

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¹U.S. Dep’t of Transp. & U.S. EPA, Clean Air Through Transportation: Challenges in Meeting National Air Quality Standards, A Joint Report 4 (Aug. 1993).

²U.S. Dep’t of Transp. & U.S. EPA, Clean Air Through Transportation: Challenges in Meeting National Air Quality Standards, A Joint Report 4, 40 (Aug. 1993).

³Clean Air Act § 110(a)(5)(C), 42 U.S.C.A. § 7410(a)(5)(C). An indirect source program reviews the impact of an individual nonpoint source of emission, such as a parking garage or shopping center.

⁴Clean Air Act § 131, 42 U.S.C.A. § 7431.

⁵Clean Air Act § 182(c)(5), (d)(1)(B), 42 U.S.C.A. § 7511a(c)(5), (d)(1)(B).

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¹Pub. L. No. 102-240, 105 Stat. 2183 (1991); 49 U.S.C.A. § 101.

²ISTEA § 1008(a), 23 U.S.C.A. § 149(b).

³ISTEA § 1008(b)(2), 23 U.S.C.A. § 104(b)(2).

⁴58 Fed. Reg. 62188 (Nov. 24, 1993).

⁵60 Fed. Reg. 40098 (Aug. 7, 1995); 60 Fed. Reg. 57179 (Nov. 14, 1995); 62 Fed. Reg. 43780 (Aug. 15, 1997).

ing health and environmental benefits. Arguably, however, the conformity provisions still create the greatest incentive for a nonattainment area to adopt TCMs as failure to demonstrate conformity can have severe consequences.⁶

§ 12:162 The Clean Air Act Amendments of 1990—Transportation control measures—Case law after the Clean Air Act Amendments of 1990

With few exceptions, federal court decisions after the Clean Air Act Amendments of 1990 have been supportive of the *Delaney v. EPA* decision.¹ Although none of the post-1990 Amendments cases discusses the modifications to section 108(f), courts have uniformly upheld the requirement that TCMs adopted in a pre-1990 SIP must be implemented. In *Citizens for a Better Environment v. Wilson*,² a district court held that SIP commitments made in 1982 were not obviated by the 1990 Amendments, and ordered the San Francisco Bay Area Metropolitan Transportation Commission to identify additional feasible TCMs. The court warned the Commission that it must consider TCMs that may be inconvenient or unpopular, noting:

No Court, of course, will require impracticable measures or measures that cause a substantially disproportionate hardship for the air quality benefits accrued, regardless of the ton per day shortfall. On the other hand, infeasibility means more than inconvenience, unpopularity, or moderate burdens.³

Similarly, in *Coalition Against Columbus Center v. City of New York*,⁴ the Second Circuit reaffirmed New York City's duty to implement TCMs. The court found, however, that the 1990 Amendments extended the effective date for adoption of TCMs and that the deadline for implementation had not yet passed. The Ninth Circuit went a step further in *McCarthy v. Thomas*⁵ and ordered the Arizona cities of Tucson and Phoenix to comply with a SIP requirement that they enlarge their bus fleets.

Courts have consistently supported an expansive interpretation of the Clean Air Act's citizen suit provision.⁶ The meaning of "an emission standard or limitation" in section 304(f) has been read broadly to support citizen suits to enforce SIP provisions.⁷ However, courts have narrowed the remedies available to citizen enforcers. In at least two cases, courts refused to enjoin construction of projects alleged to exacerbate a nonattainment problem.⁸ Additionally, holding an agency in contempt was not considered an appropriate remedy for failure to adopt sufficient

⁶62 Fed. Reg. at 43796.

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¹*Delaney v. EPA*, 898 F.2d 687, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20460 (9th Cir. 1990), cert. denied sub nom. *Reilly v. Delaney*, 498 U.S. 998 (1990); see § 12:157.

²*Citizens for a Better Env't v. Wilson*, 775 F. Supp. 1291, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20582 (N.D. Cal. 1991).

³*Citizens for a Better Env't v. Wilson*, 775 F. Supp. 1291, 1307-08 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20582, 20591 (N.D. Cal. 1991).

⁴*Coalition Against Columbus Ctr. v. City of New York*, 967 F.2d 764, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 21154 (2d Cir. 1992).

⁵*McCarthy v. Thomas*, 27 F.3d 1363, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21119 (9th Cir. 1994).

⁶Clean Air Act § 304, 42 U.S.C.A. § 7604.

⁷*Atlantic Terminal Urban Renewal Area Coalition v. New York City Dep't of Env'tl. Protection*, 740 F. Supp. 989, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 20070 (S.D. N.Y. 1990); *Conservation Law Found. v. Federal Highway Admin.*, 24 F.3d 1465, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21196 (1st Cir. 1994); *Coalition Against Columbus Ctr. v. City of New York*, 967 F.2d 764, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 21154 (2d Cir. 1992).

⁸*Atlantic Terminal Urban Renewal Area Coalition v. New York City Dep't of Env'tl. Protection*, 740 F. Supp. 989, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 20070 (S.D. N.Y. 1990); *Conservation Law Found.*

TCMs to bring an area into compliance.⁹

Perhaps the most interesting post-1990 Amendments case is *Trustees for Alaska v. Fink*,¹⁰ in which the Ninth Circuit condoned the failure of Anchorage, Alaska to implement a SIP requirement to purchase additional buses.¹¹ The court was convinced that the city had made good faith efforts to obtain funding for expansion of its bus system, and that the inability to obtain such funding released the city from its SIP obligations.¹²

§ 12:163 Transitioning toward the hydrogen economy and its potential impacts¹

I. Introduction

Air pollution emissions that prevent many areas of the country from achieving the Clean Air Act's (CAA) national ambient air quality standards (NAAQS)² could be reduced if cleaner sources of energy were utilized. Clean energy supplied by domestic sources also could provide benefits to the overall environment,³ the economy and to national security. President George W. Bush announced in his 2003 State of the Union Address that his administration believes hydrogen fuel should help provide for the United States' future energy needs.⁴ The Administration and the U.S. Department of Energy (DOE) have declared their goal is to use hydrogen in vehicles by 2015⁵ and to implement a "hydrogen economy," with the necessary infrastructure to make, transport, store, and use hydrogen as a fuel for fuel cell vehicles by 2020.⁶ This will be a substantial challenge because in 2002 there were

v. Federal Highway Admin., 24 F.3d 1465, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21196 (1st Cir. 1994).

⁹Citizens for a Better Env't v. Wilson, 775 F. Supp. 1291, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20582 (N.D. Cal. 1991).

¹⁰Trustees for Alaska v. Fink, 17 F.3d 1209, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20550 (9th Cir. 1994).

¹¹Funding is not the only obstacle states have encountered. The General Accounting Office has said that some states have had to put off their programs because of a shortage in necessary equipment. Of twenty-three states surveyed, thirteen said they have had trouble obtaining needed service from vendors. For example, Georgia officials put off operation of 300 inspection centers for an entire year due to "vendors problems with delivering the equipment and providing software support." Delays by State Automobile I/M Programs Put EPA Deadline Out of Reach, GAO Says, 29 Env't Rep. (BNA) 551 (July 10, 1998).

¹²This case can be construed to be in contradiction with the holding in *McCarthy v. Thomas*, 27 F.3d 1363, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21119 (9th Cir. 1994), which was issued by the same court later the same year.

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¹By Arnold W. Reitze, Jr. This section was co-authored by Jennifer B. Heaven, LL.M. George Washington University Law School, J.D. University of Alabama. The authors wish to thank Professor Debra Jacobson for her valuable comments and to acknowledge the assistance of Ms. Winnie Hercules, legal secretary and Ms. Germaine Leahy, head of reference at the George Washington University Law Library.

²CAA § 109, 42 U.S.C.A. § 7409; 40 C.F.R. pt. 50.

³The release of air pollutants, such as SO₂, NO_x, and heavy metals, for example, are significant sources of water pollution.

⁴The 2003 State of the Union Address: Complete Transcript of President Bush's Speech to Congress and the Nation, Jan. 28, 2003, available at <http://www.whitehouse.org/news/2003/012803-sot-u.asp>.

⁵U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Executive Summary iii (June 3, 2003), available at http://www.eere.energy.gov/hydrogenandfuelcells/mypp/pdfs/exec_summary.pdf.

⁶Hydrogen Economy Fact Sheet: U.S.-EU Summit, Cooperation on the Development of a Hydrogen

518,919 alternative vehicles in use in the United States, but none used hydrogen.⁷

Hydrogen usually serves as an energy carrier that is derived from some other primary fuel. The existing infrastructure for petroleum-based fuels is unlikely to accommodate hydrogen fuel; a new infrastructure will take many years to build, and the effort will be expensive and politically difficult to accomplish. Without the necessary infrastructure, investors will be wary about supporting this technology. Moreover, the transport and storage of hydrogen is potentially dangerous; containment methods are prone to leak and present safety risks. There are only limited cost-effective ways to use hydrogen to power automobiles or stationary internal combustion engines. The major focus of recent research has been on using hydrogen in a fuel cell, rather than using it as fuel in an internal combustion engine, but fuel cells have cost, consumer acceptance, durability, and other problems to overcome, as discussed below. At this time, it is not known how long it will take to overcome these obstacles in order to make the use of hydrogen fuel a reasonable choice. As Exxon-Mobil Corporation's Manager of Fuels Development has stated, "The verdict is still out on whether hydrogen will ever become a mainstream fuel."⁸

II. Using Hydrogen as a Fuel

Hydrogen and other alternative fuels have become a subject of intense interest because of concerns about global warming, the fear that petroleum reserves may dwindle within a few decades, the potential disruption of petroleum supplies due to the instability of petroleum suppliers, and the desire to utilize fuels cleaner than fossil fuels to protect the environment. Hydrogen-based energy technologies are being pursued, in part, because of concerns about the need to reduce dependence on foreign oil in the United States (U.S.).⁹ However, even at maximum levels of hydrogen use, U.S. petroleum needs cannot be supplied by domestic sources because the public is not yet ready to take the steps necessary to significantly reduce the Nation's oil dependence. The historical progression of the fuels used in the United States has been from wood to coal, to petroleum, to natural gas, and perhaps now to using hydrogen as an energy carrier.¹⁰ These fuels represent a molecular progression with the ratio of hydrogen to carbon atoms increasing. This progression usually results in reduced air pollution and less carbon dioxide produced during the combustion process, but this is nullified by the increasing amount of fossil fuel that is combusted to meet the growing demand for energy.

A major benefit of using hydrogen as an energy carrier is that it can be produced from many energy sources. Coal, petroleum, and natural gas are the most readily available potential sources of hydrogen. Biomass also can be converted to hydrogen. A goal of scientists and DOE is to obtain hydrogen using biophotolysis or photofermentation,¹¹ but such technology is probably decades from development.

Hydrogen also can be produced using renewable sources of electricity or nuclear

Economy, June 2003, available at <http://www.whitehouse.gov/news/releases/2003/06/20030625-6.html>.

⁷Stacy C. Davis & Susan W. Diegel, Transportation Energy Data Book 6-3, tbl. 6.1 (Edition 23, Oct. 2003) (*see also* tbls. 6.2, 6.3).

⁸Jeffrey Ball, Green Dream: Hydrogen Fuel May Be Clean But Getting It Here Looks Messy – Auto Oil Companies Wrestle with Huge Costs to Build Delivery Infrastructure – Cautiously Topping the Tank, Wall St. J. (Eastern Ed.), Mar. 7, 2003, at A-1.

⁹U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Executive Summary i (June 3, 2003); U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Program Benefits 2-1 (June 3, 2003), available at http://www.eere.energy.gov/hydrogenandfuelcells/mypp/pdfs/2.0_program_benefits.pdf.

¹⁰Brian Cook, An Introduction to Fuel Cells and Hydrogen Technology 2 (Heliocentris Dec. 2001), available at <http://www.fuelcellstore.com/products/heliocentris/INTRO.pdf>.

¹¹Idaho National Engineering and Environmental Laboratory, Biotechnology Processes from the Production of Hydrogen, available at <http://energy.inel.gov/>. *See also* U.S. Dept. of Energy, A National

power to split water into hydrogen and oxygen. No carbon dioxide is formed when producing hydrogen through electrolysis of water using wind, solar, hydroelectric or nuclear fission, to generate the needed electric power, but some of these technologies are embryonic.¹² The technology to produce hydrogen from renewable or nuclear sources is currently high in cost and low in efficiency.¹³ Some of the more potentially viable renewable means of producing hydrogen include hydroelectric water electrolysis and high-temperature thermochemical hydrogen production through solar heat.¹⁴ Of the renewable technologies, the cheapest is biomass, rivaling coal in cost per million BTUs, followed by electrolysis; the most expensive is solar photovoltaic electrolysis.¹⁵ Wind generated electricity is probably the least expensive way to produce hydrogen through electrolysis using renewable energy. Once the nation's infrastructure that is needed to store, deliver, and use hydrogen¹⁶ is developed, as technology improves, hydrogen production methods could be changed without an adverse effect on the hydrogen infrastructure.

The most common and efficient way of obtaining hydrogen today is steam reforming of natural gas,¹⁷ but natural gas is less abundant than coal¹⁸ and is not a renewable source. Coal is an abundant natural resource, but it creates substantial environmental problems when used in the hydrogen-formation process or when burned directly for energy. Even if hydrogen could be produced from coal with no release of conventional pollutants, little is gained from using hydrogen if the process results in releases of carbon dioxide to the environment. The U.S. Department of Energy (DOE) plans to sequester and store carbon dioxide that is a byproduct of processing hydrocarbons to obtain hydrogen, but the technology to do this effectively on a large scale has not yet been proven.

Given the amount of energy it takes to produce hydrogen from other energy sources, it may be more efficient to use these energy sources directly rather than accepting the costs and inefficiencies in converting the hydrogen in fossil fuel to molecular hydrogen. However, the efficiency of a fuel cell in comparison to the internal combustion engine may help to mitigate the energy losses that occur during the conversion process used to produce hydrogen.

III. Overview of Hydrogen Technology

Currently, hydrogen is used primarily to make ammonia fertilizer by synthesizing ammonia (NH₃) and to hydrocrack petroleum in oil refineries in order to produce light gasoline and distillate fuel oil.¹⁹ Hydrogen also is used in methanol production, metals processing, and in the electronics industry. Some businesses currently use

Vision of America's Transition to a Hydrogen Economy – To 2030 and Beyond iv (Feb. 2002).

¹²U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Executive Summary 3-5 (June 3, 2003).

¹³U.S. Dept. of Energy, A National Vision of America's Transition to a Hydrogen Economy – To 2030 and Beyond 4 (Feb. 2002).

¹⁴U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Executive Summary 3-5 (June 3, 2003).

¹⁵James J. MacKenzie, *The Keys to the Car: Electric and Hydrogen Vehicles for the 21st Century* 67 (World Resources Institute 1994).

¹⁶Venki Raman, *The Hydrogen Fuel Infrastructure for Fuel Cell Vehicles*, Challenges for the Chemical Sciences in the 21st Century: Energy and Transportation 66 (2003).

¹⁷U.S. Dept. of Energy, A National Vision of America's Transition to a Hydrogen Economy – To 2030 and Beyond 4 (Feb. 2002).

¹⁸Future Options for Generation of Electricity from Coal: Hearing Before the Subcommittee on Energy and Air Quality of the House Comm. on Energy and Commerce, 108th Cong. 10 (2003) (prepared statement of Hon. Ralph M. Hall, a Representative in Congress from the State of Texas), available at <http://energycommerce.house.gov/108/Hearings/06242003hearing968/print.htm>.

¹⁹Stacy C. Davis & Susan W. Diegel, *Transportation Energy Data Book* 6-12, tbl. 6.8 (Edition 23,

stationary hydrogen-powered generators as back-up power; a few use hydrogen-fueled generators as their main source of power.²⁰ The current level of hydrogen production and use is about nine million tons per year in the United States and forty million tons per year worldwide.²¹ There were eighty-one gaseous hydrogen plants in the U.S. in 2003 and ten liquid hydrogen plants. Most of these plants produce hydrogen as part of another process, e.g., petroleum refining, ammonia production, and methanol production.²²

Whether hydrogen use becomes significant depends on the success of the public and private entities involved in making the hydrogen economy a reality. Optimism prevails at DOE, but critics see the barriers to widespread commercial use of hydrogen as an energy carrier to be insurmountable during the next few decades. Technical, institutional, environmental, and market barriers exist for the production,²³ storage,²⁴ delivery,²⁵ fueling, and use of hydrogen.

A. Production

Hydrogen can be created from different fuel sources, some renewable, some nonrenewable. These sources are not all equally technologically advanced, and they create different types and quantities of pollution when hydrogen is generated.²⁶ It is unknown whether any single technology can produce the amount of hydrogen necessary to meet U.S. energy needs. The DOE's National Hydrogen Energy Roadmap predicts that when hydrogen is well established as an energy carrier, the U.S. hydrogen demand will be forty million tons per year,²⁷ which is the present worldwide production level. To fully replace gasoline in light-duty vehicles in the United States would require 110 million tons of hydrogen per year.²⁸ The Roadmap projects that a demand for hydrogen fuel for approximately twenty-five million homes or 100 million automobiles (fuel-cell powered) would require 140 large coal or

Oct. 2003). These two uses account for 75% of U.S. hydrogen consumption. *See also* American Chemical Society, *Chemistry in the Economy* 286 (1973).

²⁰The Hydrogen Energy Economy: Hearing before the Subcommittee on Energy and Air Quality of the House Comm. on Energy and Commerce, 108th Cong. 61 (2003), available at <http://energycommerce.house.gov/108/Hearings/05202003hearing926/print.htm> (statement of Gregory M. Vesey, President, ChevronTexaco Technology Ventures) [hereinafter Hydrogen Economy Hearing]. Ballard Power has developed "stand-alone back-up power generators" that use natural gas as a fuel and convert it to hydrogen-rich gas. Brian Cook, *An Introduction to Fuel Cells and Hydrogen Technology* 11-12 (Heliocentris Dec. 2001).

²¹Hydrogen Economy Hearing, 108th Cong. 57 (2003) (prepared statement of Francis R. Preli, Jr., Vice President Engineering, UTC Fuel Cells). UTC has manufactured 225 stationary 200 KW fuel cells for customers all over the world.

²²Stacy C. Davis & Susan W. Diegel, *Transportation Energy Data Book* 6-11, tbl. 6.7 (Edition 23, Oct. 2003).

²³U.S. Dept. of Energy, *Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Hydrogen Production* 3-17 to 3-21 (June 3, 2003).

²⁴Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: *Emerging Issues in the Management of Waste Streams Related to Fuel Cells* 14 (May 19, 2003).

²⁵U.S. Dept. of Energy, *Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Hydrogen Delivery* 3-33 (June 3, 2003), available at http://www.eere.energy.gov/hydrogenandfuelcells/mypp/pdfs/3.2_delivery.pdf (problems include "lack of infrastructure," "cost and energy efficiency," "infrastructure trade-offs," and barriers. *Id.* at 3-35.).

²⁶*See* U.S. Dept. of Energy, *Draft, Multi-Year Research, Development and Demonstration Plan, Program Benefits* 2-9 (June 3, 2003).

²⁷U.S. Dept. of Energy, *National Hydrogen Energy Roadmap* 11 (Nov. 2002), available at http://www.eere.energy.gov/hydrogenandfuelcells/pdfs/national_h2_roadmap.pdf.

²⁸National Research Council, *The Hydrogen Economy: Opportunity, Costs, Barriers, and R&D Needs* xvi (Prepublication copy 2004).

biomass gasification plants, or 100 nuclear plants whose power was dedicated to producing hydrogen, or one million small neighborhood electrolysis systems. A fleet of 100 million fuel-cell powered automobiles might require 67,000 vehicle refueling stations (which is one third of the number of gasoline stations today) to meet consumer expectations.²⁹ The Roadmap's forecast implies that hydrogen will supply a fraction, though a sizeable one, of the total U.S. energy demand.

Hydrogen can be developed from coal³⁰ using one of several methods. Heavy oils, petroleum coke, biomass, and municipal waste also can be used to produce hydrogen. The primary method of obtaining hydrogen from coal is through coal gasification, which is costly.³¹ It involves combining coal with oxygen and steam to produce "syngas," which contains primarily hydrogen and carbon monoxide, and then putting the syngas through a process that converts it into carbon dioxide and hydrogen.³² That mixture is then separated through pressure swing adsorption (PSA), a technology that adsorbs the hydrogen onto a porous material and releases it at lower pressures.³³ The hydrogen produced by coal gasification contains contaminants that must be removed before it can be used in a hydrogen fuel cell. To accomplish this result requires catalysts that resist poisoning by the contaminants.³⁴ Cost-effective technologies need to be developed to produce clean hydrogen.

The National Academy of Sciences stated in their Vision 21 Review that by 2015, when the go/no go decision is supposed to be made on developing a hydrogen economy, coal technology will not be ready.³⁵ Nevertheless, the coal industry is working to perfect integrated gasification combined-cycle (IGCC) plants. In 2000, the National Coal Council reported that IGCC plants can compete with natural gas plants when gas costs \$4 per million cubic feet; gas prices in 2003 generally exceeded \$5/mcf.³⁶ IGCC plants heat coal, water, and oxygen under high pressure to produce a gas of hydrogen and carbon monoxide that can, with minor modifications, be used in gas-fired electric power plants. The IGCC plants also produce chemicals and diesel fuel as part of the conversion process. The relative amounts of syngas used to produce electricity or chemicals depend on market demand.³⁷ IGCC plants provide lower-cost, more efficient, and less polluting energy conversion than conventional hydrogen production from coal.³⁸ Industry, however, may be unwilling to invest in expensive technology, such as IGCC, which provides significant reductions in carbon

²⁹National Research Council, *The Hydrogen Economy: Opportunity, Costs, Barriers, and R&D Needs* 11, 14 (Prepublication copy 2004). Hydrogen refueling stations are not cost effective as yet. There were between ten and fifteen hydrogen refueling stations in the United States as of May 2003. Hydrogen Economy Hearing, 108th Cong. 30 (2003) (testimony of Hon. David K. Garman, Asst. Sec. for Energy Efficiency and Renewable Energy, U.S. Dept. of Energy).

³⁰U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Program Benefits 2-10 (June 3, 2003).

³¹DOE Highlights Growing Hydrogen Program, *Clean Coal Today*, Fall/Winter 2003, at 6.

³²DOE Highlights Growing Hydrogen Program, *Clean Coal Today*, Fall/Winter 2003, at 6.

³³DOE Highlights Growing Hydrogen Program, *Clean Coal Today*, Fall/Winter 2003, at 6.

³⁴American Physical Society, *The Hydrogen Initiative*, Executive Summary 6 (Mar. 2004), available at http://www.aps.org/public_affairs/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=49633.

³⁵Review of DOE's Vision 21 Research and Development Program-Phase I (National Academy of Sciences 2003), available at <http://www.nap.edu/openbook/0309087171/html/R1.html>.

³⁶DeWitt John & Lee Paddock, *Clean Air and the Politics of Coal*, *Issues in Sci. & Tech.*, Winter 2003, at 63, 68.

³⁷U.S. Dept. of Energy, *Coproduction of Power, Fuels and Chemicals* 1 (Sept. 2001) (Topical Report No. 21).

³⁸U.S. Dept. of Energy, *Coproduction of Power, Fuels and Chemicals* 1 (Sept. 2001) (Topical Report No. 21); Review of DOE's Vision 21 Research and Development Program-Phase I (National Academy of Sciences 2003).

dioxide (CO₂) emissions, unless there are governmental restrictions on CO₂ emissions. The most common method used today to produce hydrogen is steam methane reforming (SMR) of natural gas,³⁹ which is used to make about half of the 49.5 million tons of hydrogen produced worldwide each year and more than ninety percent of the hydrogen produced in the United States.⁴⁰ Natural gas processing plants, known as reformers, use steam and catalytic processes to separate natural gas molecules into hydrogen and carbon-based compounds including carbon dioxide.⁴¹

The process of producing hydrogen from fossil fuels requires more energy than is contained in the hydrogen. Why is a process with a net energy loss being pursued? The answer is that hydrogen fuel has a value greater than the coal, natural gas, or electric power used to produce it. With coal presently costing about \$0.82 per million BTU and gasoline selling for over \$15 per million BTU this process could be viable.⁴² But costs must be reduced if hydrogen is to compete with gasoline. Current hydrogen production technologies produce hydrogen at four times the cost of gasoline.⁴³ When used in a fuel cell, which is significantly more efficient than an internal combustion engine, the high cost of hydrogen is partially offset.⁴⁴ Some experts believe hydrogen can be competitive with gasoline selling at prices in the two-dollar a gallon range.⁴⁵

Hydrogen also can be produced through electrolysis, which decomposes water into hydrogen and oxygen using electricity. The process involves electrolyzers that are the opposite of fuel cells. Water and electricity are the inputs, and hydrogen and oxygen are the output. Electrolyzers operate at about a seventy to eighty percent efficiency. The market value of hydrogen is about eight times the cost of base load electricity from a coal-fired generating plant needed to produce it,⁴⁶ but high capital costs for electrolyzers limit their current use to niche markets where high costs for electricity are acceptable. These markets include manufacturers of semiconductors, specialty metals, such as titanium, and glass manufacturers.⁴⁷ When electrolyzers are combined with fuel cells, they also are economical for users needing backup power, such as data processing centers or communications systems for whom electric power at four times the cost of primary power (on a kilowatt basis) is acceptable.⁴⁸

The long-term value of the electrolysis process is its potential for dealing with the intermittent nature of electric power produced by solar or wind systems.⁴⁹ Electricity, when not needed by the grid, can be used to produce hydrogen, which is then available to produce electricity on demand. If the value of the hydrogen as fuel is greater than the value of the electricity used in its production, it makes economic sense to produce it. The challenge is to find excess electric capacity at a competitive

³⁹U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Program Benefits 2-10 (June 3, 2003).

⁴⁰Joseph J. Romm, *The Hype About Hydrogen* 72 (2004).

⁴¹Chip Schroeder, *Hydrogen from Electrolysis*, University of California-Davis Conference on Transportation and Energy 5 (Aug. 1, 2003).

⁴²Chip Schroeder, *Hydrogen from Electrolysis*, University of California-Davis Conference on Transportation and Energy 8 (Aug. 1, 2003).

⁴³American Physical Society, *The Hydrogen Initiative*, Executive Summary 1 (Mar. 2004).

⁴⁴Daniel Sperling & Joan Ogden, *The Hope for Hydrogen*, *Issues in Sci. & Tech.*, Spring 2004, at 82, 84.

⁴⁵American Physical Society, *The Hydrogen Initiative*, Executive Summary 1 (Mar. 2004).

⁴⁶American Physical Society, *The Hydrogen Initiative*, Executive Summary 4 (Mar. 2004).

⁴⁷American Physical Society, *The Hydrogen Initiative*, Executive Summary 5 (Mar. 2004).

⁴⁸American Physical Society, *The Hydrogen Initiative*, Executive Summary 6 (Mar. 2004).

⁴⁹Chip Schroeder, *Hydrogen from Electrolysis*, University of California-Davis Conference on Transportation and Energy 2 (Aug. 1, 2003).

price because replacing the gasoline used in the United States with hydrogen produced by electrolysis would require more electricity than is sold in the country today.⁵⁰

Another way of producing hydrogen that is in the early stages of development is photobiological hydrogen production. This process uses genetically engineered microorganisms to make hydrogen.⁵¹ Certain algae can split water into hydrogen and oxygen without needing the expensive catalysts currently used to produce hydrogen in fuel cells, but commercially viable processes are not yet available.⁵² There is also some support for research concerning hydrogen production from water power, fusion,⁵³ and biomass.⁵⁴

In addition, hydrogen can be produced using electricity generated by nuclear power.⁵⁵ Nuclear power does not generate conventional pollutants or greenhouse gas (GHG) emissions nor does it require imported fuel. However, public tolerance for nuclear power is low, and mistrust of nuclear power would likely preclude the construction of the many new nuclear power plants needed for a hydrogen economy based on this technology. But some members of Congress support nuclear power.⁵⁶ The major problem with nuclear energy is its cost. New nuclear power may cost twice as much per delivered kilowatt hour as wind power, five to ten times as much as co-producing electricity and heat using natural gas, and three to thirty times as much as reducing demand for electricity through end-use efficiency improvements.⁵⁷

B. Delivery of Hydrogen

Hydrogen can be produced from large-scale industrial processes using natural gas at a cost less than gasoline per unit of energy. However, while relatively inexpensive to produce, hydrogen is inherently difficult and expensive to transport, store, and distribute.⁵⁸ Methods for delivery and storage of hydrogen from centralized production facilities include pipelines, tanker trucks, and trains. Pipelines can move either hydrogen, hydrogen mixed with natural gas, or other fuels that can be converted to hydrogen at the destination site. Hydrogen can be shipped as a high-density gas or as a liquid, and each method of shipping has advantages and disadvantages. Delivery is especially important to the development of a hydrogen-based economy because it now is about five times more expensive to deliver hydrogen to dispersed small users than it is to produce hydrogen.⁵⁹ Technology advances that reduce delivery costs are needed. Hydrogen enjoys an inherent advantage of being the fuel that is the most concentrated energy carrier. A kilogram of hydrogen (2.2 pounds)

⁵⁰Joseph J. Romm, *The Hype About Hydrogen* 76 (2004).

⁵¹U.S. Dept. of Energy, *Draft, Multi-Year Research, Development and Demonstration Plan, Program Benefits* 3-5, 3-7, 3-8 (June 3, 2003).

⁵²American Physical Society, *The Hydrogen Initiative, Executive Summary* 7 (Mar. 2004).

⁵³U.S. Dept. of Energy, *Draft, Multi-Year Research, Development and Demonstration Plan, Program Benefits* 2-11 (2003).

⁵⁴U.S. Dept. of Energy, *A National Vision of America's Transition to a Hydrogen Economy – To 2030 and Beyond*, Feb. 2002, at 4.

⁵⁵U.S. Dept. of Energy, *Draft, Multi-Year Research, Development and Demonstration Plan, Program Benefits* 2-10, 2-11 (2003).

⁵⁶*See* Hydrogen Economy Hearing, 108th Cong. 5 (2003) (prepared statement of Hon. C.L. “Butch” Otter, a member of Congress from the State of Idaho).

⁵⁷Craig Lambert, *The Hydrogen-Powered Future*, *Harvard Magazine*, Jan.-Feb. 2004, at 30, 34.

⁵⁸David W. Keith & Alexander E. Farrell, *Rethinking Hydrogen Cars*, 301 *Science* 315 (July 18, 2003).

⁵⁹Joseph J. Romm, *The Hype About Hydrogen* 85 (2004).

carries about the same energy as a gallon of gasoline (6.2 pounds).⁶⁰ But because hydrogen is a lightweight gas, its energy value on a volume basis is low.

1. Pipelines⁶¹

The use of natural gas pipelines to transport hydrogen was first suggested in the 1930s by the German turbine designer Franz Lawaczeck.⁶² Today, there is some use of pipelines to transport hydrogen. A company called Air Products maintains a few hundred miles of hydrogen pipelines throughout the world, including in the United States.⁶³ That company's pipelines transport nearly 2,000 tons of hydrogen per day.⁶⁴

For transporting hydrogen through pipelines, it can either be mixed with natural gas or the pipelines can be used for hydrogen alone. There are problems with each method; using pipes designed for natural gas to move hydrogen can cause what is known as embrittlement. To use pipelines for hydrogen transport requires either new materials resistant to embrittlement to be developed or some other way of successfully using the current pipes will have to be discovered. If pipelines are used to move both natural gas and hydrogen simultaneously, methods will have to be developed to separate the two fuels once they reach their destinations. Methanol, natural gas, or ethanol could be transported by pipeline to a site and converted to hydrogen onsite. Conversion of these fuels to hydrogen, however, is currently limited by the cost.⁶⁵

The cost of building a new infrastructure to pipe hydrogen would be enormous, and the absence of such an infrastructure is one of the most significant barriers to hydrogen's viability as a widely used fuel.⁶⁶ The easiest way to transport hydrogen long distance (1000 miles) is in liquid form,⁶⁷ but hydrogen is rarely used in that form and cooling it to a liquid and then returning it to a gas requires additional energy, making the process inefficient and costly.⁶⁸

2. Road, Rail and Waterway Options

Hydrogen potentially could be transported in compressed-gas or cryogenic liquid trucks, tube trailers, barges, or rail cars.⁶⁹ However, the amount of hydrogen that could be transported would be smaller than the amount that pipelines could carry.⁷⁰

⁶⁰Craig Lambert, *The Hydrogen-Powered Future*, Harvard Magazine, Jan.-Feb. 2004, at 35.

⁶¹U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Hydrogen Delivery 3-32 (June 3, 2003).

⁶²James J. MacKenzie, *The Keys to the Car: Electric and Hydrogen Vehicles for the 21st* (World Resources Institute 1994).

⁶³Venki Raman, *The Hydrogen Fuel Infrastructure for Fuel Cell Vehicles*, Challenges for the Chemical Sciences in the 21st Century: Energy and Transportation 68 (2003).

⁶⁴Venki Raman, *The Hydrogen Fuel Infrastructure for Fuel Cell Vehicles*, Challenges for the Chemical Sciences in the 21st Century: Energy and Transportation 68 (2003).

⁶⁵U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Hydrogen Delivery 3-31 (June 3, 2003).

⁶⁶Venki Raman, *The Hydrogen Fuel Infrastructure for Fuel Cell Vehicles*, Challenges for the Chemical Sciences in the 21st Century: Energy and Transportation 66 (2003).

⁶⁷Venki Raman, *The Hydrogen Fuel Infrastructure for Fuel Cell Vehicles*, Challenges for the Chemical Sciences in the 21st Century: Energy and Transportation 67-68 (2003).

⁶⁸U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Technology Plan – Hydrogen Storage 3-44 (June 3, 2003).

⁶⁹U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Hydrogen Delivery 3-31 (June 3, 2003).

⁷⁰Venki Raman, *The Hydrogen Fuel Infrastructure for Fuel Cell Vehicles*, Challenges for the Chemical Sciences in the 21st Century: Energy and Transportation 67 (2003).

Hydrogen could not be carried as far because the size and weight of the hydrogen-containing metal cylinders limits its practical transportation to 100 miles,⁷¹ though distances of 1,000 miles are possible with the use of super-insulated tankers, rail cars, and barges transporting liquid hydrogen.⁷² If trucks are used to deliver hydrogen, the energy density of liquid hydrogen is low so it would require five times more trucks of hydrogen than of conventional fuel to supply a refueling site;⁷³ a twenty-seven ton tanker truck can carry only enough hydrogen for about sixty fill-ups.⁷⁴ Thus, a great deal of additional diesel fuel would likely be consumed in delivering hydrogen. The high costs of hydrogen delivery may make on-site production a viable alternative; this is discussed below.

C. Storage of Hydrogen

Storage dilemmas may ultimately be the biggest obstacle to successful widespread hydrogen use,⁷⁵ especially for use in mobile sources.⁷⁶ Viable hydrogen storage requires a technology breakthrough, and it is hard to know when the needed scientific discovery will occur.⁷⁷ Hydrogen can be stored and delivered in several forms: low pressure or compressed gas,⁷⁸ cryogenic liquid,⁷⁹ recyclable liquid chemical carriers,⁸⁰ or stored in a solid in which hydrogen molecules are either absorbed into a solid or chemically bound up in the storage medium.⁸¹ To liquefy hydrogen requires it to be cooled below -423 degrees Fahrenheit (-253 degrees C), which requires a significant energy input, and hydrogen is lost through evaporation.⁸² Compressed gas storage is the most “mature” technology for hydrogen storage, and storage tank technology is advancing, allowing greater compression of hydrogen in storage tanks.⁸³ The compression process, however, requires significant energy.⁸⁴ To store hydrogen as a gas requires new materials that do not have embrittlement problems, do not leak, and that can safely store the fuel at high pressure.

⁷¹Venki Raman, *The Hydrogen Fuel Infrastructure for Fuel Cell Vehicles*, Challenges for the Chemical Sciences in the 21st Century: Energy and Transportation 67 (2003). The National Hydrogen Energy Roadmap cites the range as between 100 and 200 miles for high-pressure cylinders and tube trailers. U.S. Dept. of Energy, National Hydrogen Energy Roadmap 13 (Nov. 2002).

⁷²U.S. Dept. of Energy, National Hydrogen Energy Roadmap 13 (Nov. 2002).

⁷³Well-to-Wheels Analysis of Future Automotive Fuels and Powertrains in the European Context (European Comm’n Joint Research Center, Version 16, Jan. 2004), available at <http://ies.jrc.cec.eu.int/Download/eh/33>.

⁷⁴Lynn J. Cook, Great Balls of Hydrogen, 171(2) *Forbes* 92 (Jan. 20, 2003).

⁷⁵Lynn J. Cook, Great Balls of Hydrogen, 171(2) *Forbes* 67 (Jan. 20, 2003).

⁷⁶Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 14 (May 19, 2003).

⁷⁷Hydrogen Economy Hearing, 108th Cong. 20 (2003) (testimony of David K. Garman, Asst. Sec., Energy Efficiency and Renewable Energy, U.S. Dept. of Energy).

⁷⁸U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Hydrogen Delivery 3-31 (June 3, 2003).

⁷⁹U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Hydrogen Delivery 3-31 (June 3, 2003).

⁸⁰James J. MacKenzie, *The Keys to the Car: Electric and Hydrogen Vehicles for the 21st Century* 67 (World Resources Institute 1994).

⁸¹American Physical Society, *The Hydrogen Initiative*, Executive Summary 7 (Mar. 2004).

⁸²Lawrence D. Burns et al., Vehicle of Change, 287(4) *Scientific America* 65 (Oct. 2002). Venki Raman, *The Hydrogen Fuel Infrastructure for Fuel Cell Vehicles*, Challenges for the Chemical Sciences in the 21st Century: Energy and Transportation 66 (2003); U.S. Dept. of Energy, National Hydrogen Energy Roadmap 17 (Nov. 2002).

⁸³U.S. Dept. of Energy, National Hydrogen Energy Roadmap 11 (Nov. 2002).

⁸⁴American Physical Society, *The Hydrogen Initiative*, Executive Summary 7 (Mar. 2004).

Solids that can be used as carriers for hydrogen include complex metal hydrides (among these DOE is focusing on alanates),⁸⁵ chemical hydrides (pursued because of their safety and smaller volume, but they are expensive partly because the spent fuel must be recycled),⁸⁶ carbon nanotubes (the most promising carbon materials for hydrogen storage),⁸⁷ graphite nanofibers, or new metal-organic framework (MOF) materials.⁸⁸ To use solid chemicals requires new cost-effective technologies to be developed.⁸⁹

Each storage method has its own strengths and weaknesses, and while compressed gas storage may be the most developed technology, none has emerged as a clear choice.⁹⁰ Storage of hydrogen as compressed gas, solid metal hydrides, and chemical hydrides is problematic because hydrogen molecules will migrate into “the matrix of the metal.”⁹¹ At this time, the technology is too inefficient to be a desirable method.⁹²

In 2003, there were only fourteen storage terminals in the U.S. for gaseous hydrogen storage and three storage terminals for liquid hydrogen.⁹³ When hydrogen is produced in centralized facilities, most commonly by steam methane reforming of natural gas, it must be delivered and stored at the refueling station as a liquid or gas. If delivered as a liquid, a vaporizer is used to convert the hydrogen to a gas and a compressor is used to increase its pressure. Research vehicles using hydrogen are designed to have fuel delivered at high pressure of typically 3600 or 5000 psi.⁹⁴ Because of the high cost and technical difficulties of delivering and storing hydrogen, a better approach is to produce the hydrogen near the point of end use.⁹⁵ But on-site production of hydrogen is more costly than producing it in industrial facilities where the economy of large scale operations lowers the cost of hydrogen production. Service stations dispensing hydrogen could use on-site electrolyzers to produce hydrogen

⁸⁵U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Technology Plan – Hydrogen Storage 3-43 (June 3, 2003). The National Hydrogen Energy Roadmap also cites alanates as better than other metal hydrides as to weight and temperature. U.S. Dept. of Energy, National Hydrogen Energy Roadmap 17 (Nov. 2002).

⁸⁶U.S. Dept. of Energy, National Hydrogen Energy Roadmap 18 (Nov. 2002).

⁸⁷U.S. Dept. of Energy, National Hydrogen Energy Roadmap 17 (Nov. 2002). See also PBS Online News Hour, The Future of Fuel, Advances in Hydrogen Fuel Cell Technology (Oct. 20, 2003), available at <http://www.pbs.org/newshour/science/hydrogen/smalley.html>.

⁸⁸Hydrogen Economy Hearing, 108th Cong. 73-74 (2003) (prepared statement of Johannes Schwank, Professor of Chemical Engineering, University of Michigan). Alanates, carbon storage structures, and chemical and metal hydrides are only in the developmental stage. U.S. Dept. of Energy, National Hydrogen Energy Roadmap 20 (Nov. 2002).

⁸⁹American Physical Society, The Hydrogen Initiative, Executive Summary 5 (Mar. 2004).

⁹⁰U.S. Dept. of Energy, National Hydrogen Energy Roadmap 18, 33 (Nov. 2002). Chemical hydrides may pose safety and health risks if, for example, traffic accidents caused exposure to humans. Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 15 (May 19, 2003).

⁹¹Hydrogen Economy Hearing, 108th Cong. 20 (2003) (testimony of David K. Garman, Asst. Sec., Office of Energy Efficiency and Renewable Energy, U.S. Dept. of Energy).

⁹²Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 14 (May 19, 2003). The goal of the International Energy Association (IEA) is the development of storage systems that function at less than 80°C and 1 atm pressure and have “at least 5 weight percent hydrogen recovery levels.” Sodium alanate, in 2001, was believed to be closest to attaining these goals. *Id.* at 15.

⁹³Stacy C. Davis & Susan W. Diegel, Transportation Energy Data Book 6-11, tbl. 6-7 (Edition 23, Oct. 2003).

⁹⁴TIAX, LLC, California Clean Fuels Market Assessment, 2003, 4.6 (Prepared for the California Energy Commission, Aug. 2003).

⁹⁵Chip Schroeder, *Hydrogen from Electrolysis*, University of California-Davis Conference on Transportation and Energy (Aug. 1, 2003).

with on-site compression and storage of gaseous hydrogen or use on-site natural gas reforming with on-site compression and storage.⁹⁶ The hydrogen produced on-site can be stored in storage tanks on-site or in the vehicles.⁹⁷

DOE has given attention to storage of hydrogen onboard automobiles for use in fuel cells. Low temperature storage in a motor vehicle does not appear to be a useful option. A liquid oxygen system loses up to one percent a day by boiling and up to thirty percent during filling. Moreover, insulation must be sufficient to keep the hydrogen at a near absolute zero temperature.⁹⁸

Compressed gas storage is the technology of choice, but at this time it is inadequate. In order for hydrogen-fueled automobiles to have enough range to be useful to consumers (300 to 400 miles),⁹⁹ hydrogen would have to be stored at 350-700 bar, a pressure much higher than is used today in industry.¹⁰⁰ The hydrogen stored on-board a vehicle would have to be stored in such a way that it would fit in a small enough space not to take away interior or storage space, and it would have to be light.¹⁰¹ DOE and others have suggested that hydrogen on-board storage technology first be tested on vehicle fleets (like delivery vehicles or buses) because they are used locally and are refueled centrally.¹⁰² Three kilograms of hydrogen would be required for a 100-150 mile range.¹⁰³ For 300 to 400 mile driving ranges, the expectation of the average automobile owner, five kilograms of hydrogen would have to be stored on board a small vehicle.¹⁰⁴ Current prototype vehicles use carbon-fiber tanks to store hydrogen at 5,000 pounds per square inch (psi), but this is inadequate to support long distance travel. Tanks are available that can operate at 10,000 psi, and some have been tested at 20,000 psi.¹⁰⁵ Such tanks could be used to increase the distance vehicles could travel on a tank of fuel.

Another approach is to use chemical hydrides, compounds that contain hydrogen, which can release hydrogen gradually and then be recharged. Hydrogen can be stored in vehicles as a chemical hydride for \$8/kwh, as a complex metal hydride for \$16/kwh, or as liquid hydrogen for \$6/kwhr. DOE's goal is to get storage costs to \$4/kwhr by 2010.¹⁰⁶ When stored using present technology, the energy content of the vehicle's hydrogen supply remains below what is needed to give the vehicle the range needed for consumer acceptance.¹⁰⁷ Moreover, metal-based compounds add too much additional weight for most motor vehicle use.¹⁰⁸

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⁹⁶TIAX, LLC, California Clean Fuels Market Assessment, 2003, 4.6 (Prepared for the California Energy Commission, Aug. 2003).

⁹⁷TIAX, LLC, California Clean Fuels Market Assessment, 2003, 4.6 (Prepared for the California Energy Commission, Aug. 2003).

⁹⁸Craig Davis et al., Hydrogen Fuel Cell Vehicle Study 15 (American Physical Society, June 12, 2003).

⁹⁹U.S. Dept. of Energy, National Hydrogen Energy Roadmap 19 (Nov. 2002).

¹⁰⁰Venki Raman, *The Hydrogen Fuel Infrastructure for Fuel Cell Vehicles*, Challenges for the Chemical Sciences in the 21st Century: Energy and Transportation 68 (2003). A bar is the metric measure for pressure; it is multiplied by 14.7 to get pressure in pounds per square inch (psi).

¹⁰¹U.S. Dept. of Energy, National Hydrogen Energy Roadmap 19 (Nov. 2002).

¹⁰²U.S. Dept. of Energy, National Hydrogen Energy Roadmap 22 (Nov. 2002).

¹⁰³U.S. Dept. of Energy, National Hydrogen Energy Roadmap 22 (Nov. 2002).

¹⁰⁴U.S. Dept. of Energy, National Hydrogen Energy Roadmap 22 (Nov. 2002).

¹⁰⁵Craig Lambert, The Hydrogen-Powered Future, Harvard Magazine, Jan.-Feb. 2004, at 94.

¹⁰⁶Stacy C. Davis & Susan W. Diegel, Transportation Energy Data Book 6-13, tbl. 6.9 (Edition 23, Oct. 2003).

¹⁰⁷Stacy C. Davis & Susan W. Diegel, Transportation Energy Data Book 6-13, tbl. 6.9 (Edition 23, Oct. 2003).

¹⁰⁸Craig Davis et al., Hydrogen Fuel Cell Vehicle Study 15 (American Physical Society, June 12,

The most promising technology utilizing hydrogen is the fuel cell. Fuel cells can provide the benefit of electric vehicles while offering rapid acceleration and a range comparable to conventional motor vehicles.¹⁰⁹ The hydrogen fuel cell was first created in 1839 by Sir William Grove.¹¹⁰ Grove's fuel cell was not very practical; it produced only about a volt of electricity, the platinum electrodes were prone to corrosion, and the materials used were not stable.¹¹¹ Francis Bacon developed a practical alkaline fuel cell in the 1950s using electrodes of "porous sintered nickel powder."¹¹² Hydrogen fuel cells have been used in some capacity for over thirty-five years, and DOE has been promoting hydrogen power to Congress as a potentially viable energy option for over twenty-five years.¹¹³

Fuel cells can be used for both stationary source and mobile source applications. Fuel cells produce direct current electricity, which must be converted to alternating current if it is to be transported via the power grid.¹¹⁴ Hydrogen fuel cells combine hydrogen and oxygen to produce water¹¹⁵ and electricity.¹¹⁶ The process is silent and usually is pollutant-free.¹¹⁷ Using devices called reformers, gasoline, methanol, or natural gas can be converted to hydrogen and carbon dioxide and the hydrogen is used by the fuel cell to produce electrical energy.¹¹⁸ Methanol reformers operate at the lowest temperature and pressure and, therefore, are the lowest cost reformers.¹¹⁹ Using reformers minimizes the problems involved in the storage and transportation of hydrogen, however, building vehicles with reformers and fuel cells is difficult, and the technology to utilize this approach is not commercially available. Because using hydrogen fuel directly is easier than using a reformer to convert another fuel to hydrogen, most vehicle fuel cell research has been directed toward using hydrogen stored in the vehicle to run direct-hydrogen fuel cells. Direct-hydrogen vehicles have the potential to provide the best fuel economy of any known practicable propulsion technology.¹²⁰

Hydrogen fuel cells are significantly more thermally efficient than internal combustion engines, which have about thirty percent conversion efficiency.¹²¹ Efficiency might be somewhat lessened over the life of a fuel cell if corruption from carbon dioxide or other substances occurs, and the technology to prevent corruption has not yet been developed. Fuel cells are currently 40-50% efficient at full power,

2003).

¹⁰⁹Daniel Sperling & Joan Ogden, *The Hope for Hydrogen*, Issues in Sci. & Tech., Spring 2004, at 82, 84.

¹¹⁰Brian Cook, *An Introduction to Fuel Cells and Hydrogen Technology* 2 (Heliocentris Dec. 2001).

¹¹¹Brian Cook, *An Introduction to Fuel Cells and Hydrogen Technology* 3 (Heliocentris Dec. 2001).

¹¹²Brian Cook, *An Introduction to Fuel Cells and Hydrogen Technology* 4 (Heliocentris Dec. 2001).

¹¹³Pamela Najor, Requirement for "Zero-Sulfur" Diesel Fuel Needed in Final Energy Bill, Dingell Says, 33 Env't Rep. (BNA) 1315 (June 14, 2002). DOE was created in 1977 by the Department of Energy Organization Act, 42 U.S.C.A. § 7101.

¹¹⁴Energy Alternatives: A Comparative Analysis 12-32 (Science and Public Policy Program, University of Oklahoma, 1975).

¹¹⁵U.S. Dept. of Energy, *National Hydrogen Energy Roadmap* 23 (Nov. 2002).

¹¹⁶Craig Lambert, *The Hydrogen-Powered Future*, Harvard Magazine, Jan.-Feb. 2004, at 34.

¹¹⁷Brian Cook, *An Introduction to Fuel Cells and Hydrogen Technology* 1 (Heliocentris Dec. 2001).

¹¹⁸Russel Moy, Tort Law Considerations for the Hydrogen Economy, 24 Energy L.J. 349, 350 (2003).

¹¹⁹TIAX, LLC, *California Clean Fuels Market Assessment*, 2003, 3.2.1 (Prepared for the California Energy Commission, Aug. 2003).

¹²⁰TIAX, LLC, *California Clean Fuels Market Assessment*, 2003, 3.2.2 (Prepared for the California Energy Commission, Aug. 2003).

¹²¹U.S. Dept. of Energy, *Draft, Multi-Year Research, Development and Demonstration Plan*, Program Benefits 2-7, 2-12 (June 3, 2003); TIAX, LLC, *California Clean Fuels Market Assessment*, 2003, 3.2.2 (Prepared for the California Energy Commission, Aug. 2003).

60% efficient at quarter power, and up to 80% efficient for combined heat and power applications.¹²² However, there are technical limitations to efficient operation of fuel cells, and their use is not yet cost effective. None of the fuel cell types used for stationary source application exceed the efficiency of a modern gas-fired electric power plant.¹²³

Fuel cells are classified according to the kind of electrolyte used at the core of the fuel cell in the cell's membrane.¹²⁴ They operate like "open batteries," producing electricity as long as they are supplied with fuel and oxygen (which may come from the air).¹²⁵ Five types of fuel cells are: Phosphoric Acid Fuel Cells (PAFCs), Alkaline Fuel Cells (AFCs), which are the oldest technology, Solid Oxide Fuel Cells (SOFCs), Proton Exchange Membrane Fuel Cells (PEMs), and Molten Carbonate Fuel Cells (MCFCs).¹²⁶ All current fuel cell types have problems with cost, reliability, and durability.¹²⁷

Some stationary phosphoric acid fuel cell (PAFC) units are in use as back-up generators, power grid support, and in buses;¹²⁸ however, they are expensive to produce and are not as promising a technology for passenger vehicles as proton exchange membrane (PEM) fuel cells.¹²⁹ PEM fuel cells have been used in fuel cell concept cars by major automobile manufacturers, since the late 1980s.¹³⁰ One of the major obstacles to commercialization of these fuel cells is the cost of the platinum catalysts necessary to make the fuel cell work.¹³¹ PEM powered vehicles can convert hydrogen to electricity at forty to sixty percent efficiency, which is about twice the efficiency of the standard internal combustion engine.¹³² Ballard Power, a Canadian company, has made advances in PEM fuel cells by reducing the amount of platinum required for the catalysts and increasing the power density of the cells.¹³³ Los Alamos National Laboratory and Texas A&M University also have reduced the amount of platinum required in PEM cells, and Los Alamos has been able to reduce

¹²²U.S. Dept. of Energy, National Hydrogen Energy Roadmap 23 (Nov. 2002).

¹²³U.S. Dept. of Energy, National Hydrogen Energy Roadmap 26 (Nov. 2002).

¹²⁴Hydrogen Economy Hearing, 108th Cong. 74 (2003); Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 4 (May 19, 2003).

¹²⁵Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 4 (May 19, 2003).

¹²⁶U.S. Dept. of Energy, National Hydrogen Energy Roadmap 24 (Nov. 2002).

¹²⁷U.S. Dept. of Energy, National Hydrogen Energy Roadmap 24 (Nov. 2002).

¹²⁸U.S. Dept. of Energy, National Hydrogen Energy Roadmap 23 (Nov. 2002).

¹²⁹Joseph J. Romm, *The Hype About Hydrogen* 27 (2004).

¹³⁰U.S. Dept. of Energy, National Hydrogen Energy Roadmap 23 (Nov. 2002); National Research Council, *The Hydrogen Economy: Opportunity, Costs, Barriers, and R&D Needs* xviii (Prepublication copy 2004).

¹³¹U.S. Dept. of Energy, National Hydrogen Energy Roadmap 25 (Nov. 2002).

¹³²Don Anair, *Hydrogen Fuel Cells*, 3 Catalyst 1: 18 (Union of Concerned Scientists, Spring 2004). The PEM cell uses hydrogen stored in the vehicle and oxygen in the air to generate electricity. Hydrogen enters the fuel cell and a catalyst, usually platinum, splits the hydrogen into positively charged hydrogen ions and negatively charged electrons. The positive ions pass through the electrolyte, a proton exchange membrane (PEM). The electrons are forced to travel around the PEM, which creates electricity. A PEM fuel cell produces very little electricity. To produce the power needed by a vehicle requires hundred of fuel cells to be combined in a fuel cell stack. The fuel cell stack, an air compressor to deliver oxygen, a cooling system, and a hydrogen storage system make up the fuel-cell vehicle's propulsion system. *Id.*

¹³³Brian Cook, *An Introduction to Fuel Cells and Hydrogen Technology* 8 (Heliocentris Dec. 2001).

catalyst poisoning from trace fuel impurities.¹³⁴ PEM fuel cells are easily compromised by carbon monoxide, and therefore, require high purity hydrogen. They must have an external reformer if they are to be fueled by natural gas.¹³⁵ PEM fuel cells work at low temperatures, about 150°F, which make them ideal for motor vehicles because they can reach full power seconds after start-up; other types of fuel cells operate at high temperatures and take more time to warm up than motorists would tolerate, which is why they are best used in stationary fuel cells.¹³⁶

Alkaline fuel cells (AFCs) produce power and potable water. NASA has used pure hydrogen and pure oxygen in alkaline fuel cells onboard the space shuttle for the past thirty years.¹³⁷ In flight, astronauts drink pure water that is the byproduct of the fuel cell reactions.¹³⁸ Fuel cells are more reliable in space because they are not subject to corruption from atmospheric components, particularly carbon dioxide, that shorten fuel cell life.¹³⁹ Alkaline fuel cells are not as successful on earth because carbon dioxide in the atmosphere “poisons” the electrolyte by reacting with the hydroxide ions from the electrolyte to form a carbonate, which reduces the concentration of hydroxide ions in the electrolyte.¹⁴⁰

Molten carbonate fuel cells (MCFCs) and solid oxide fuel cells (SOFCs) are used for stationary electric power combined-cycle and cogeneration and in large trucks.¹⁴¹ MCFCs operate at high temperatures (1,200° or higher). This allows them to produce hydrogen directly from natural gas, ethanol, or methanol.¹⁴² These direct fuel cells do not require an external reformer to generate hydrogen, which lowers overall costs and increases efficiency above that of PEM fuel cells.¹⁴³ Their high temperature operation allows nickel rather than costly platinum to be used as the catalyst and the MCFC is able to resist carbon monoxide poisoning better than PEM fuel cells. Their high temperature operation allows for cogenerating heat.¹⁴⁴ They are not suitable for transportation applications because they are slow to reach operating temperatures and a 250KW unit is the size of a railroad car and weighs forty tons.¹⁴⁵ SOFCs also operate at high temperatures using ceramic as the electrolyte. Their advantage is they have higher electric efficiencies than PEM fuel cells, they do not need an external reformer, and they produce useable heat.¹⁴⁶ SOFCs have been used as stationary electric power sources, but they continue to have technical and cost problems that limit commercialization.¹⁴⁷

Some researchers advocate burning hydrogen in internal combustion engines as a transitional step toward full use of hydrogen in fuel cells.¹⁴⁸ Hydrogen used in internal combustion engines does not have to be purified to the extent required for

¹³⁴Brian Cook, *An Introduction to Fuel Cells and Hydrogen Technology* 8 (Heliocentris Dec. 2001).

¹³⁵Joseph J. Romm, *The Hype About Hydrogen* 31 (2004).

¹³⁶Joseph J. Romm, *The Hype About Hydrogen* 12 (2004).

¹³⁷See *Fuel Cell History*, available at http://www.fuelcellstore.com/information/fuel_cell_history.html.

¹³⁸Brian Cook, *An Introduction to Fuel Cells and Hydrogen Technology* 5 (Heliocentris Dec. 2001).

¹³⁹Brian Cook, *An Introduction to Fuel Cells and Hydrogen Technology* 6 (Heliocentris Dec. 2001).

¹⁴⁰Brian Cook, *An Introduction to Fuel Cells and Hydrogen Technology* 6 (Heliocentris Dec. 2001).

¹⁴¹U.S. Dept. of Energy, *National Hydrogen Energy Roadmap* 24 (Nov. 2002).

¹⁴²Joseph J. Romm, *The Hype About Hydrogen* 27 (2004).

¹⁴³Joseph J. Romm, *The Hype About Hydrogen* 27 (2004).

¹⁴⁴Joseph J. Romm, *The Hype About Hydrogen* 28 (2004).

¹⁴⁵Joseph J. Romm, *The Hype About Hydrogen* 28 (2004).

¹⁴⁶Joseph J. Romm, *The Hype About Hydrogen* 53 (2004).

¹⁴⁷Joseph J. Romm, *The Hype About Hydrogen* 30 (2004).

¹⁴⁸Hydrogen Economy Hearing, 108th Cong. 74 (2003) (prepared statement of Johannes Schwank, Professor of Chemical Engineering, University of Michigan).

fuel cell use; hence, it is less costly to produce.¹⁴⁹ DOE expects this combustion technology to play a role in the “hydrogen economy”¹⁵⁰ because it may be a lower-cost technology that could be implemented sooner than fuel cells and could help facilitate development of a hydrogen delivery infrastructure.¹⁵¹

California’s Low Emission Vehicle Program may give a boost to hydrogen fuel cell cars. It requires, beginning in 2003, that ten percent of passenger cars delivered for sale in California from medium or large sized manufacturers to be Zero Emission Vehicles (ZEVs).¹⁵² Regulatory changes in 2003 allow manufacturers the option to produce fuel cell vehicles to meet ZEV requirements.¹⁵³ The initial target is to have each manufacturer deploy up to 250 fuel cell vehicles by 2008.¹⁵⁴ In 2004, the California Air Resources Board (CARB) announced that Ford, GM, Toyota, and Daimler-Chrysler each should have a demonstration fuel cell electric vehicle by the end of the year.¹⁵⁵ California also created the Fuel Cell Technical Advisory Panel to assess fuel cell technology and the California Fuel Cell Partnership, composed of CARB, the California Energy Commission, automobile makers, fuel cell developers, fuel companies, and government agencies.¹⁵⁶ The Fuel Cell Partnership has several purposes, including demonstration of fuel cell electric vehicles, hydrogen infrastructure, fuel cell vehicle commercialization, and public awareness.¹⁵⁷

A few automobile models have been produced that use a hydrogen fuel cell, but they generally are not commercially available. The only hydrogen-powered fuel-cell car government certified for use on public roads is the Honda FCX. Automotive companies with fuel cell vehicle programs include Daimler Chrysler, Ford, General Motors, Honda, PSA Peugeot-Citroen, Renault, Nissan, and Toyota.¹⁵⁸ Toyota built a fuel cell vehicle that was leased to Japan’s Ministry of the Environment, but it had to be recalled for safety reasons when hydrogen leaked and was not detected by

¹⁴⁹Craig Davis et al., Hydrogen Fuel Cell Vehicle Study 11 (American Physical Society, June 12, 2003).

¹⁵⁰U.S. Dept. of Energy, National Hydrogen Energy Roadmap 24 (Nov. 2002).

¹⁵¹U.S. Dept. of Energy, National Hydrogen Energy Roadmap 29 (Nov. 2002).

¹⁵²Brian Cook, An Introduction to Fuel Cells and Hydrogen Technology 8 (Heliocentris Dec. 2001).

¹⁵³TIAX, LLC, California Clean Fuels Market Assessment, 2003, 3.2 (Prepared for the California Energy Commission, Aug. 2003).

¹⁵⁴TIAX, LLC, California Clean Fuels Market Assessment, 2003, 3.2 (Prepared for the California Energy Commission, Aug. 2003). In 1990, CARB required 10% of all new vehicles offered for sale in California in 2003 to be electric-battery propelled. In 1996, the zero emission vehicle (ZEV) interim mandate for 1998-2002 vehicles was modified to require only a limited number of demonstration vehicles. In April 2003, with ZEV requirements on hold for 2003-2004 because of lawsuits brought by automakers, CARB adopted changes to be fully effective in 2005. Manufacturers have two options for meeting ZEV requirements. The first option is to meet the 2001 ZEV rule. This requires a manufacturer to produce a vehicle mix with two percent ZEVs, two percent advanced technology partial ZEVs (including hybrid electric and CNG vehicles), and six percent partial ZEVs that are low emission gasoline vehicles. The second option is a ZEV compliance strategy that allows manufacturers to produce fuel cell vehicles in numbers that are sales weighted up to 250 in 2008, and increasing to as many as 50,000 fuel cell vehicles in 2017. Battery electric vehicles may be substituted for up to half the fuel cell requirements, under both options a smaller number of partial or advanced technology partial ZEVs may be substituted. *Id.* at 3.1.3.

¹⁵⁵See California Air Resources Board, Consumer Information: Fuel Cell Electric Vehicles Fact Sheet (Mar. 24, 2004), available at http://www.arb.ca.gov/msprog/zevprog/factsheets/fuelcells_fs.pdf.

¹⁵⁶California Air Resources Board, Consumer Information: Fuel Cell Electric Vehicles Fact Sheet (Mar. 24, 2004).

¹⁵⁷California Air Resources Board, Consumer Information: Fuel Cell Electric Vehicles Fact Sheet (Mar. 24, 2004).

¹⁵⁸Lawrence D. Burns et al., Vehicle of Change, 287(4) Scientific America 65 (Oct. 2002).

the vehicle's sensors.¹⁵⁹

Daimler Chrysler's fuel cell car prototype is called the NECAR 5.¹⁶⁰ It runs on liquid methanol, which a fuel processor converts into carbon dioxide and hydrogen before using the hydrogen in its fuel cell.¹⁶¹ It is twice as thermally efficient as an internal combustion engine and, therefore, emits less carbon dioxide than a similar fossil-fueled vehicle.¹⁶² A hydrogen fuel cell van, a Mercedes Sprinter, from Daimler Chrysler was delivered to the United Parcel Service (UPS) on October 9, 2003.¹⁶³ It has a 55 kW electric engine, a 150-kilometer range, and a top speed of 120 kilometers per hour.¹⁶⁴ General Motors (GM) has spent more than a billion dollars on its fuel cell program and successfully reduced the size, weight, cost, and complexity of the fuel cell stack.¹⁶⁵

Several states are performing hydrogen research, especially California, Illinois, and New York. California is the most involved state in research on hydrogen technologies; it has several projects underway.¹⁶⁶ In the private sector, many companies, including coal, oil, and automobile companies, have been involved in hydrogen research.¹⁶⁷ A few companies are entirely devoted to hydrogen technology.¹⁶⁸ A number of universities and research facilities are heavily involved in researching and developing new hydrogen technologies. For example, the University of Michigan is involved in fuel cell powered automobiles,¹⁶⁹ the National Fuel Cell Center at the University of California developed a fuel cell automobile,¹⁷⁰ and Texas A&M is involved in fuel cell research.¹⁷¹ Some nonprofit organizations are involved in consultations with DOE and are listed as contributors in several government reports and studies on hydrogen.¹⁷² Various foreign governments, including Japan, the European Union, Singapore, Korea, China, and Canada, have been involved in

¹⁵⁹Russell Moy, Tort Law Considerations for the Hydrogen Economy, 24 Energy L.J. 349, 353 (2003).

¹⁶⁰Brian Cook, An Introduction to Fuel Cells and Hydrogen Technology 9 (Heliocentris Dec. 2001).

¹⁶¹Brian Cook, An Introduction to Fuel Cells and Hydrogen Technology 9 (Heliocentris Dec. 2001).

¹⁶²Brian Cook, An Introduction to Fuel Cells and Hydrogen Technology 9 (Heliocentris Dec. 2001).

¹⁶³DaimlerChrysler Press Release, DaimlerChrysler Hands Over Fuel Cell Sprinter Vehicle to UPS Parcel Service Today, Fuel Cell Today (Oct. 9, 2003).

¹⁶⁴UPS, 2003 Press Releases, Fuel Cell Sprinter to Be Field-Tested in Germany by UPS (Oct. 9, 2003), available at <http://www.pressroom.ups.com/pressreleases/archives/archive/0,1363,4344,00.html>.

¹⁶⁵Hydrogen Economy Hearing, 108th Cong. 40 (2003) (statement of J. Byron McCormick, Executive Director, Fuel Cell Activities, General Motors Research and Development).

¹⁶⁶See California Fuel Cell Partnership website at <http://www.drivingthefuture.org>.

¹⁶⁷See Hydrogen Economy Hearing, 108th Cong. 7 (2003) (prepared statement of Hon. John D. Dingell, a Representative in Congress from the State of Michigan. Rep. Dingell mentioned research by General Motors and Chrysler.). See also *id.* at 62 (prepared statement of Gregory M. Vesey, President, Technology Ventures, Chevron Texaco) and at 85 (prepared statement of the American Petroleum Institute).

¹⁶⁸See Hydrogen Economy Hearing, 108th Cong. 57 (2003) (prepared statement of Francis R. Preli, Jr., Vice President Engineering, UTC Fuel Cells) and at 52 (prepared statement of Catherine Rips, SunLine Transit Agency) (monitoring several companies that work entirely or primarily with hydrogen).

¹⁶⁹See Hydrogen Economy Hearing, 108th Cong. 72 (2003) (prepared statement of Johnnes Schoank, Professor of Chemical Engineering, University of Michigan); see *id.* at 66.

¹⁷⁰Hydrogen Economy Hearing, 108th Cong. 65 (2003) (prepared statement of Scott Samuelson, Director, National Fuel Cell Center, University of California).

¹⁷¹SECA Project Information, 2003 DOE Project Selections, available at <http://www.fe.doe.gov>. Other universities involved in hydrogen research include the University of Akron. See Hydrogen Economy Hearing, 108th Cong. 6 (2003) (prepared statement of Hon. Sherrod Brown, a Representative in Congress from the State of Ohio, and Georgetown University).

¹⁷²U.S. Dept. of Energy, National Hydrogen Energy Roadmap 44 (Nov. 2002).

hydrogen technology research.¹⁷³

The first fuel cell vehicles to be used commercially are likely to be buses.¹⁷⁴ Georgetown University obtained three hybrid electric buses, one in 1994 and two in 1995.¹⁷⁵ These three buses, the Generation I Fuel Cell Transit Buses, used 50 kW Phosphoric Acid Fuel Cells (PAFCs), fueled with methanol, which is converted into hydrogen that is used in the fuel cell.¹⁷⁶ Methanol was selected because it was easy to obtain and use.¹⁷⁷ The Generation II Fuel Cell Transit Buses were introduced in 1998 and 2000 and used a PAFC and Proton Exchange Membrane Fuel Cell (PEMFC), respectively, each 100 kW.¹⁷⁸ These two buses use methanol to produce the hydrogen on-board, and they capture energy using regenerative braking to give the buses surge power from traction batteries.¹⁷⁹ A traction battery is a battery that supplements the fuel cell power; traction batteries store energy they recover in a process called regenerative braking, and they provide surge power,¹⁸⁰ the extra power needed to accelerate and climb hills.¹⁸¹ Both Generation II buses seat forty passengers, have a 350-mile range, low emissions, and the power system weighs less than two tons.¹⁸² The Phase III bus is still in the development stage; it will run on hydrogen only and will not be a hybrid.¹⁸³

DOE is supporting a bus program at the University of Las Vegas that stores compressed hydrogen and burns it in an internal combustion engine (ICE). SunLine Transit Agency, in California's Coachella Valley, began using a hybrid hydrogen fuel cell bus in November 2002 and plans to acquire additional fuel cell buses in 2004. The California Fuel Cell Partnership plans to begin operating seven transit buses powered by direct-hydrogen fuel cells in 2004.¹⁸⁴

If fuel cell vehicles are to become an important part of the transport system, there needs to be a major advance in cell membrane technology. Membranes must have high permeability and selectivity in gas separation. They must be highly conductive and durable in a high temperature corrosive environment. Numerous materials have been tested for potential replacement of the costly platinum currently used in fuel cells, but there has been no major breakthrough in membrane technology.¹⁸⁵ Fuel cells currently cost ten times more than an internal combustion engine of

¹⁷³Hydrogen Economy Hearing, 108th Cong. 48 (2003) (statement of Catherine Rips, Sunline Transit Agency).

¹⁷⁴TIAX, LLC, California Clean Fuels Market Assessment, 2003, 1.2.6 (Prepared for the California Energy Commission, Aug. 2003).

¹⁷⁵Georgetown University Advanced Vehicle Development: The Fuel Cell Bus Program (Oct. 2003), available at <http://fuelcellbus.georgetown.edu/files/guavdbrochure.pdf>.

¹⁷⁶Georgetown University Advanced Vehicle Development: The Fuel Cell Bus Program (Oct. 2003).

¹⁷⁷Georgetown University Advanced Vehicle Development: The Fuel Cell Bus Program (Oct. 2003).

¹⁷⁸Georgetown University Advanced Vehicle Development: Program Details, available at <http://fuelcellbus.georgetown.edu/text/overview2.html>.

¹⁷⁹Georgetown University Advanced Vehicle Development: The Fuel Cell Bus Program (Oct. 2003).

¹⁸⁰See Ballard Power, Fuel Cell Technology: Transit Buses, available at <http://www.ballard.com>.

¹⁸¹See Georgetown University, TBB General Information, available at <http://fuelcellbus.georgetown.edu/tbbtech.cfm>.

¹⁸²Georgetown University, TBB General Information, available at <http://fuelcellbus.georgetown.edu/tbbtech.cfm>; Georgetown University Advanced Vehicle Development: Program Details, available at <http://fuelcellbus.georgetown.edu/text/overview2.html>.

¹⁸³Georgetown University Advanced Vehicle Development: Program Details, available at <http://fuelcellbus.georgetown.edu/text/overview2.html>.

¹⁸⁴TIAX, LLC, California Clean Fuels Market Assessment, 2003, 3.2.2 (Prepared for the California Energy Commission, Aug. 2003) (auto manufacturers, fuel providers, and fuel cell developers that work to demonstrate fuel cell vehicles).

¹⁸⁵American Physical Society, The Hydrogen Initiative, Executive Summary 9 (Mar. 2004).

equivalent power.¹⁸⁶ Others claim fuel cells cost about twice the cost of equivalent power from an internal combustion engine, even after taking into account the higher efficiency of fuel cells. Thus, the cost of fuel cells need to be cut dramatically to be competitive.¹⁸⁷

V. The Bush Administration's Hydrogen Fuel Program

In 2002, the FreedomCAR program was launched to develop high-efficiency vehicles by focusing on fuel cells and hydrogen produced from renewable energy sources.¹⁸⁸ FreedomCAR is an industry-government cooperative effort, sponsored by DOE's Office of Energy Efficiency and Renewable Energy (EERE), to develop fuel cell vehicles. The FreedomCAR initiative aims to coordinate energy companies, automakers, utilities, state and local governments, and other appropriate interests in an effort to develop hydrogen vehicles and their infrastructure concurrently. This initiative has technology-specific goals for electric propulsion systems, fuel cells, and reformers.¹⁸⁹ If successful, the program could result in commercially viable fuel-cell cars being available by 2015.¹⁹⁰ The infrastructure needed for fuel cell cars to operate is to be in place in 2020.¹⁹¹ The FreedomCAR program includes plans to develop technology useful in hybrid vehicles and to improve fuel economy in hybrid and gasoline-fueled vehicles, which will be useful when fuel cell vehicles are developed.¹⁹² The FreedomCAR project involves cooperation between EERE and USCAR (which includes DaimlerChrysler Corp., Ford Motor Co., and General Motors Corp.).¹⁹³

On January 28, 2003, in his State of the Union Address, President George W. Bush announced a federal Hydrogen Fuel Initiative to be funded with an additional \$720 million over five years from levels authorized for FY 2003.¹⁹⁴ This initiative is aimed at reducing United States' dependence on foreign petroleum by pursuing hydrogen fuel and fuel cell infrastructure development.¹⁹⁵ In a separate but related effort, on February 27, 2003, President Bush announced a one billion dollar project, called FutureGen, to seek to develop a coal-based hydrogen and electric plant in ten years.¹⁹⁶ DOE's Office of Fossil Energy is responsible for this power plant project that seeks, through gasification of coal, to produce hydrogen that is competitive in

¹⁸⁶Craig Davis et al., *Hydrogen Fuel Cell Vehicle Study 3* (American Physical Society, June 12, 2003); National Research Council, *The Hydrogen Economy: Opportunity, Costs, Barriers, and R&D Needs* xviii (Prepublication copy 2004).

¹⁸⁷Chip Schroeder, *Hydrogen from Electrolysis*, University of California-Davis Conference on Transportation and Energy 6 (Aug. 1, 2003).

¹⁸⁸Stacy C. Davis & Susan W. Diegel, *Transportation Energy Data Book 6-9* (Edition 23, Oct. 2003).

¹⁸⁹Craig Davis et al., *Hydrogen Fuel Cell Vehicle Study App. B* (American Physical Society, June 12, 2003).

¹⁹⁰U.S. Dept. of Energy, *Draft, Multi-Year Research, Development and Demonstration Plan, Introduction 1-6* (June 3, 2003), available at http://www.eere.energy.gov/hydrogenandfuelcells/mypp/pdfs/1.0_introduction.pdf; Stacy C. Davis & Susan W. Diegel, *Transportation Energy Data Book 6-9* (Edition 23, Oct. 2003).

¹⁹¹Hydrogen Economy Hearing, 108th Cong. 5 (2003) (prepared statement of Hon. W.J. "Billy" Tanzin, Chairman, Committee on Energy and Commerce).

¹⁹²U.S. Dept. of Energy, *Draft, Multi-Year Research, Development and Demonstration Plan, Program Benefits 1-2* (June 3, 2003).

¹⁹³U.S. Dept. of Energy, *Draft, Multi-Year Research, Development and Demonstration Plan, Program Benefits 1-1, 1-2* (June 3, 2003).

¹⁹⁴Robert L. Bamberger, *Energy Policy: The Continuing Debate and Omnibus Energy Legislation 11* (CRS Issue Brief for Congress, updated Feb. 23, 2004).

¹⁹⁵Fact Sheet: *Hydrogen Fuel: a Clean and Secure Energy Future*, Feb. 6, 2003, at <http://www.whitehouse.gov/news/releases/2003/02/20030206-2.html>.

¹⁹⁶Statement by the President, Feb. 27, 2003, available at <http://www.whitehouse.gov/news/releases/2003/02/20030227-11.html>.

price with gasoline while producing electricity only ten percent more expensive than current coal-generated electricity. This process would create significant amounts of carbon dioxide, and one of the goals for FutureGen is to develop carbon sequestration technology to store the carbon dioxide deep in bedrock.¹⁹⁷ The program is to involve a consortium of the coal-fired electric power industry and the coal production industry that is to include the owners of at least one-third of U.S. coal and the producers of one-fifth of U.S. coal-fired electricity.¹⁹⁸ It is to include eastern and western coal producing entities and all types of coal.¹⁹⁹

DOE is the lead agency in the Hydrogen Fuel Initiative, with other agencies involved, including the U.S. Environmental Protection Agency (EPA), the Department of Defense (DOD), the Department of Transportation (DOT), the Department of Commerce (DOC), the National Institute of Standards and Technology (NIST), the National Aeronautics and Space Administration (NASA), and the Office of Science and Technology Policy at the White House.²⁰⁰ DOE's role is expected to increase due to its mandate from the White House, as expressed in the 2003 State of the Union Address.²⁰¹

DOE has several offices working on hydrogen related technology and the Hydrogen Fuel Initiative, including the Office of Energy Efficiency and Renewable Energy (EERE), the Office of Nuclear Energy, Science and Technology, the Office of Fossil Energy, and the Office of Science.²⁰² EERE controls most of the hydrogen and vehicle technology programs²⁰³ and is the unofficial leader of DOE's efforts to develop useable hydrogen technologies.²⁰⁴ It works with DOT to overcome institutional barriers to a hydrogen economy by forming technology partnerships with the private sector, creating codes and standards, and encouraging international cooperation.²⁰⁵ EERE's hydrogen activities are primarily the responsibility of its Office of Hydrogen, Fuel Cells and Infrastructure Technologies Program,²⁰⁶ which is the lead organization for hydrogen production, delivery and storage, and fuel cells issues.²⁰⁷ The goal of DOE's EERE is to develop a "full hydrogen economy by 2040."²⁰⁸ There are nine focus areas in developing the hydrogen economy:²⁰⁹ hydrogen production,²¹⁰ delivery²¹¹

¹⁹⁷Future Options for Generation of Electricity from Coal: Hearing before the Subcommittee on Energy and Air Quality of the House Committee on Energy and Commerce, 108th Cong. 16 (2003) (statement of George Rudins, Deputy Asst. Sec. for Coal and Power Systems, Office of Fossil Energy, U.S. Dept. of Energy), available at <http://energycommerce.house.gov/108/Hearings/06242003hearing968/print.htm>.

¹⁹⁸Future Options for Generation of Electricity from Coal: Hearing before the Subcommittee on Energy and Air Quality of the House Committee on Energy and Commerce, 108th Cong. 16 (2003).

¹⁹⁹Future Options for Generation of Electricity from Coal: Hearing before the Subcommittee on Energy and Air Quality of the House Committee on Energy and Commerce, 108th Cong. 16 (2003).

²⁰⁰Hydrogen Economy Hearing, 108th Cong. 17 (2003) (testimony of David K. Garman, Asst. Sec., Energy of Efficiency and Renewable Energy, U.S. Dept. of Energy).

²⁰¹Hydrogen Economy Hearing, 108th Cong. 17 (2003).

²⁰²Hydrogen Economy Hearing, 108th Cong. 17 (2003).

²⁰³Hydrogen Economy Hearing, 108th Cong. 17 (2003).

²⁰⁴Hydrogen Economy Hearing, 108th Cong. 17 (2003).

²⁰⁵Hydrogen Economy Hearing, 108th Cong. 17 (2003).

²⁰⁶U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Introduction 1-6 (June 3, 2003).

²⁰⁷National Research Council, The Hydrogen Economy: Opportunity, Costs, Barriers, and R&D Needs xxiii (Prepublication copy 2004).

²⁰⁸U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Introduction 1-9 (June 3, 2003).

²⁰⁹U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan,

and storage,²¹² fuel cells,²¹³ safety,²¹⁴ education,²¹⁵ codes and standards,²¹⁶ technology validation,²¹⁷ and systems integration/analyses.²¹⁸

Based on the Hydrogen Fuel Initiative, the government's role will be funding and encouraging faster hydrogen and fuel cell technology development; marketing and manufacturing are to be left to private companies.²¹⁹ DOE's hydrogen program is to have four phases. Phase I should last until 2015.²²⁰ In 2015, based on achievement or non-achievement of specified milestones, DOE plans to decide whether to pursue full commercialization of hydrogen technology.²²¹ Phase II, from 2010 to as early as 2020, is Transition to the Marketplace, with mass marketing beginning in 2020 if a positive commercialization decision is made in 2015.²²² Phase III, beginning with the commercialization decision, is Expansion of Markets and Infrastructure, and Phase IV, Realization of the Hydrogen Vision, is the transition to the full hydrogen economy and is currently placed at 2025-2040.²²³ According to Assistant Secretary Garman, the hydrogen initiative receives almost daily attention from the DOE Secretary and frequent attention from the Council on Environmental Quality (CEQ).²²⁴ Most of the major technology based targets of the Hydrogen Initiative are aimed at achievement by 2010.²²⁵

DOE's budget requests in recent years have had a significant allotment for

Introduction 1-9 (June 3, 2003).

²¹⁰U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Hydrogen Production (June 3, 2003), available at http://www.eere.energy.gov/hydrogenandfuelcells/mypp/pdfs/3.1_production.pdf.

²¹¹U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Hydrogen Delivery 3-33 (June 3, 2003).

²¹²U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Hydrogen Storage (June 3, 2003), available at http://www.eere.energy.gov/hydrogenandfuelcells/mypp/pdfs/3.3_storage.pdf.

²¹³U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Fuel Cells (June 3, 2003), available at http://www.eere.energy.gov/hydrogenandfuelcells/mypp/pdfs/3.4_fuelcells.pdf.

²¹⁴U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Hydrogen Safety (June 3, 2003), available at http://www.eere.energy.gov/hydrogenandfuelcells/mypp/pdfs/3.7_safety.pdf.

²¹⁵U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Education (June 3, 2003), available at http://www.eere.energy.gov/hydrogenandfuelcells/mypp/pdfs/3.8_education.pdf.

²¹⁶U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Hydrogen Codes and Standards (June 3, 2003), available at http://www.eere.energy.gov/hydrogenandfuelcells/mypp/pdfs/3.6_codes.pdf.

²¹⁷U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Technology Validation (June 3, 2003), available at http://www.eere.energy.gov/hydrogenandfuelcells/mypp/pdfs/3.5_validation.pdf.

²¹⁸U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Introduction 1-7 (June 3, 2003).

²¹⁹Hydrogen Economy Hearing, 108th Cong. 11 (2003).

²²⁰Hydrogen Economy Hearing, 108th Cong. 13 (2003).

²²¹U.S. Dept. of Energy, Fuel Cell Report to Congress, ESECS EE-1973 (Feb. 2003).

²²²Hydrogen Economy Hearing, 108th Cong. 13 (2003).

²²³Hydrogen Economy Hearing, 108th Cong. 14 (2003).

²²⁴Hydrogen Economy Hearing, 108th Cong. 18 (2003).

²²⁵Hydrogen Economy Hearing, 108th Cong. 19 (2003). On April 26, 2004, President Bush announced \$350 million in funding of new hydrogen research. See Pamela Najor, Bush Links Hydrogen Fuel Cell Progress to Environmental Protection Innovation, 35 Env't Rep. (BNA) 954 (Apr. 30, 2004).

hydrogen technology research and development.²²⁶ In 2002, the total budget allotment for hydrogen and fuel cells was \$75.6 million, in 2003 it increased to \$95.5 million.²²⁷ In FY 2004, the Energy and Water appropriations bill²²⁸ provided \$78 million for the development of hydrogen technology, but \$37 million is specified expenditures that will not have much affect on advancing the hydrogen initiative.²²⁹

The Administration supports new energy legislation that includes a hydrogen and fuel cell program, but no new energy legislation has been enacted. The effort to pass comprehensive energy legislation, however, is ongoing. The House of Representatives approved its version of H.R. 6, the Energy Policy Act of 2003, on April 11, 2003. It contained authorization for the FreedomCAR project and for the Hydrogen Fuel Initiative.²³⁰ H.R. 6 also included new authorizations for hydrogen research, development, and infrastructure. The Senate version of the legislation was approved by the Senate on July 31, 2003.²³¹ The House version of H.R. 6 provided for the additional \$720 million for hydrogen fuel, fuel cell and vehicle technology research. The Senate version of H.R. 6 required 100,000 hydrogen-fueled cars to be produced by 2010 and 2.5 million vehicles to be produced each year after 2020.²³² In November 2003, the conference committee reported H.R. 6, and the House approved the conference report on November 18, 2003. However, the legislation did not pass in the Senate.²³³

On February 12, 2004, Senator Domenici introduced S. 2095, which is a revised version of the prior year's H.R. 6. S. 2095 is estimated to cost \$14 billion in contrast to H.R. 6's projected \$31 billion cost.²³⁴ The bill authorizes \$2.1 billion for hydrogen fuel and fuel cell R&D over FY 2004-FY 2008.²³⁵ As of May 2004, the bill had not passed and there is not much expectation that it can be passed.²³⁶

VI. Issues of Concern

There are serious problems in several areas that must be overcome if hydrogen is to be a viable fuel choice. Some areas of concern about hydrogen include safety, cost, technology development, consumer interest, competing fuels and techniques, its ability to reduce dependence on foreign oil, and environmental impacts.

A. Safety

²²⁶U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Appendix A—Budgetary Information (June 3, 2003), available at <http://www.eere.energy.gov/hydrogenandfuelcells/mypp/pdfs/appendix.pdf>.

²²⁷U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Appendix A—Budgetary Information A-1 (June 3, 2003).

²²⁸Pub. L. No. 108-137 (2003).

²²⁹National Research Council, *The Hydrogen Economy: Opportunity, Costs, Barriers, and R&D Needs* xxiii (Prepublication copy 2004).

²³⁰Hydrogen Economy Hearing, 108th Cong. 5 (2003).

²³¹The two bills are covered in *Omnibus Energy Legislation: Comparison of Major Provisions in House and Senate Passed Versions of H.R. 6, Plus S. 14*, Congressional Research Service Report RL 32078 (2003).

²³²Robert L. Bamberger, *Energy Policy: The Continuing Debate and Omnibus Energy Legislation* 12 (CRS Issue Brief for Congress, updated Feb. 23, 2004).

²³³Robert L. Bamberger, *Energy Policy: The Continuing Debate and Omnibus Energy Legislation* 12 (CRS Issue Brief for Congress, updated Feb. 23, 2004).

²³⁴The differences between the two bills are summarized at Senate Committee on Energy and Natural Resources, Press Release, *Summary of Changes to Leaner Energy Bill* (Feb. 11, 2004), available at http://energy.senate.gov/news/rep_release.cfm?id=217948.

²³⁵Robert L. Bamberger, *Energy Policy: The Continuing Debate and Omnibus Energy Legislation* 2 (CRS Issue Brief for Congress, updated Feb. 23, 2004).

²³⁶Martin Kady II, *The Energy Bill, Foiled Again*, Congressional Quarterly Weekly, May 4, 2004.

When the hydrogen filled dirigible, the *Hindenburg*, burned in New Jersey in 1937, the publicity helped make the public leery of using hydrogen.²³⁷ Hydrogen is listed as a hazardous material by the Department of Transportation.²³⁸ It requires little heat to combust and burns with an invisible flame.²³⁹ Hydrogen has a low density,²⁴⁰ and if stored under high pressure, there is a risk of explosion if the gas escapes, especially in an enclosed space. If stored as a liquid, it poses a danger of frostbite to handlers.²⁴¹ It has a wide “flammability range,” able to burn when it constitutes between four and seventy-four percent of air by volume.²⁴² Safety concerns, including the potential for an explosion. Hydrogen transport and storage systems need to be designed with the expectation that they could be a terrorist target; this will add to the expense.²⁴³ If stored as a liquid in a motor vehicle, hydrogen may start to “vent” if the car is not used for several days, which is a fire hazard.²⁴⁴ However, hydrogen diffuses quickly which reduces its safety risk, and it is not poisonous.²⁴⁵

Much of the focus on making hydrogen safer for use has been focused on leak detection and prevention. Tighter seals and various methods of leak detectors have been tested. However, NASA, the agency with the most experience dealing with hydrogen, advises its employees working in proximity to hydrogen to wave straw brooms in front of themselves as they walk because the sacrificial broom’s ignition is the only way of knowing whether hydrogen is burning.²⁴⁶

Adding a chemical with a strong odor to odorless hydrogen gas has been recognized as imperative, but it is unlikely a suitable substance can be found because hydrogen, the lightest gas, disperses faster than any chemical mixed with it, making an additive useless as a leak detector.²⁴⁷ Even if this problem was solved, it would be dif-

²³⁷U.S. Dept. of Energy, Safety, Codes & Standards, *Misconceptions About Hydrogen Safety: The Hindenburg Myth*, at http://www.eere.energy.gov/hydrogenandfuelcells/codes/safety_misconceptions.html. Possibly, none of the 35 fatalities were killed by the hydrogen fire. Burning diesel fuel, flammable furnishings, and jumping from the dirigible caused the fatalities. Twenty-seven of thirty-five fatalities were due to jumping from the aircraft. Sixty-two survivors rode the burning Hindenburg to the ground while the hydrogen burned above them. See Craig Lambert, *The Hydrogen-Powered Future*, Harvard Magazine, Jan.-Feb. 2004, at 30, 35; see also Craig Davis et al., *Hydrogen Fuel Cell Vehicle Study 21* (American Physical Society, June 12, 2003).

²³⁸Hydrogen Economy Hearing, 108th Cong. 45 (2003) (prepared statement of J. Byron McCormick, Executive Director, Fuel Cell Activities, General Motors Corp). GM was arguing to delist hydrogen as a hazardous substance and list it as a fuel. *Id.*

²³⁹James J. MacKenzie, *The Keys to the Car: Electric and Hydrogen Vehicles for the 21st Century* 68 (World Resources Institute 1994).

²⁴⁰U.S. Department of Energy, *Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Hydrogen Safety 3-120* (June 3, 2003). The DOE report never mentions the possibility of explosions from hydrogen.

²⁴¹James J. MacKenzie, *The Keys to the Car: Electric and Hydrogen Vehicles for the 21st Century* 68 (World Resources Institute 1994).

²⁴²James J. MacKenzie, *The Keys to the Car: Electric and Hydrogen Vehicles for the 21st Century* 68 (World Resources Institute 1994).

²⁴³National Research Council, *The Hydrogen Economy: Opportunity, Costs, Barriers, and R&D Needs* xix (Prepublication copy 2004).

²⁴⁴California’s AB 1493: *Trendsetting or Setting Ourselves Up to Fail?*, 21 UCLA J. Envtl. L. & Pol’y 97, 123-24 (2002/2003).

²⁴⁵Craig Davis et al., *Hydrogen Fuel Cell Vehicle Study 21* (American Physical Society, June 12, 2003).

²⁴⁶Russell Moy, *Tort Law Considerations for the Hydrogen Economy*, 24 Energy L.J. 349 (2003).

²⁴⁷Russell Moy, *Tort Law Considerations for the Hydrogen Economy*, 24 Energy L.J. 349, 355 (2003).

ficult to find a chemical that would not corrupt fuel cells' catalysts.²⁴⁸

Serious liability risks attend any widespread use of hydrogen. Though conventional fuels are explosive, hydrogen has a low ignition temperature and explosions of hydrogen fuels are more likely to occur.²⁴⁹ An important but unexplored potential problem is leakage of hydrogen in an enclosed structure, such as a garage in a home or a commercial structure. The garages used for the prototype hydrogen vehicles in California have hydrogen sensors on their ceilings and a duct system to pull in outside air if the sensors detect a hydrogen leak.²⁵⁰ Because of the potential for an explosion, insurance costs are likely to be high enough to be a serious deterrent to the sale and use of hydrogen. Hydrogen use could be considered an abnormally dangerous activity, which could affect insurance availability and cost.²⁵¹ Some of the DOE's reports seem to place a greater emphasis on "public education" as the remedy to the "perception that hydrogen is explosive and unsafe," as though public prejudice, and not safety, is the obstacle limiting hydrogen use.²⁵² Whether hydrogen is more or less dangerous than gasoline, it is different. To use hydrogen will require new safety codes, building codes, zoning changes, and other legal changes necessary to the creation of a new infrastructure.

B. Cost

Today, hydrogen at the point of use is more expensive than gasoline with equivalent energy content. The current cost of hydrogen fuel is \$5/kg; the goal is \$1.50/kg²⁵³ (a kilogram of hydrogen is comparable in energy to a gallon of gasoline).²⁵⁴ Hydrogen, however, is projected to be equivalent to gasoline in cost per mile traveled, when used in a fuel cell vehicle with its higher fuel efficiency, if produced from an advanced coal-burning electric power plant producing both electricity and hydrogen.²⁵⁵ The ultimate goal is for hydrogen to be less costly than present fuels because of electrolysis improvements, as well as advances in solar and wind production used to produce the needed electricity.²⁵⁶ Until then, most hydrogen will be produced from natural gas, which has had major price increases and can be expected to continue to increase in price.²⁵⁷

Automotive fuel cells cost \$1,500-\$10,000 per kilowatt which must be reduced to \$50-100 per kilowatt to be competitive.²⁵⁸ Fuel cells have been successfully used in the space program for many years where cutting edge technology is pursued regard-

²⁴⁸Russell Moy, Tort Law Considerations for the Hydrogen Economy, 24 Energy L.J. 349, 355 (2003).

²⁴⁹Russell Moy, Tort Law Considerations for the Hydrogen Economy, 24 Energy L.J. 349, 356 (2003).

²⁵⁰Jeffrey Ball, Green Dream: Hydrogen Fuel May Be Clean But Getting It Here Looks Messy, Wall St. J., Mar. 7, 2003, at A-1.

²⁵¹Russell Moy, Tort Law Considerations for the Hydrogen Economy, 24 Energy L.J. 349 (2003).

²⁵²Venki Raman, *The Hydrogen Fuel Infrastructure for Fuel Cell Vehicles*, Challenges for the Chemical Sciences in the 21st Century: Energy and Transportation 66 (2003).

²⁵³U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Hydrogen Production 3-8 (June 3, 2003).

²⁵⁴TIAX, LLC, California Clean Fuels Market Assessment, 2003, 4.6 (Prepared for the California Energy Commission, Aug. 2003).

²⁵⁵NRC Report Cites Prime Hydrogen Role for Coal, Clean Coal Today 57: 10 (Spring 2004) (DOE/FE-0468).

²⁵⁶National Research Council, *The Hydrogen Economy: Opportunity, Costs, Barriers, and R&D Needs* xxi (Prepublication copy 2004).

²⁵⁷Joseph J. Romm, *The Hype About Hydrogen* 43 (2004).

²⁵⁸Craig Davis et al., Hydrogen Fuel Cell Vehicle Study 7 (American Physical Society, June 12, 2003).

less of cost. The price of hydrogen fuel cells is exacerbated by the fact that the catalyst used in the PEM fuel cell is the expensive metal platinum. PEM fuel cells use a platinum electrocatalyst of up to several grams.²⁵⁹ One study has indicated the cost of platinum is \$57 per kilowatt, which is higher than the cost target for the entire fuel cell system of the FreedomCAR program.²⁶⁰ Research to find cheaper catalysts for fuel cells suitable for motor vehicles has not yet been successful. Phosphoric acid fuel cells, used in stationary source applications, might be competitively priced if a substantial market existed. But without such a market, the price remains high.²⁶¹

Research and development costs to make hydrogen a viable fuel will be high for every aspect of the hydrogen economy. There are cost barriers (often tied to technical barriers) for the various technologies that can be used to produce hydrogen.²⁶² The infrastructure to deliver and use hydrogen is not in place; new pipeline systems may have to be created. New materials may be required to make the pipelines. It is considered less expensive to produce hydrogen in decentralized locations near the point of use than to develop the infrastructure to deliver hydrogen from large centralized production facilities. Nevertheless, hydrogen-fueling stations are costly to build; there is speculation that they could cost over one million dollars per station.²⁶³ To outfit an existing gas station with the equipment to convert natural gas to hydrogen would cost about \$400,000.²⁶⁴

While the costs of fuel cell technology remain high, government policies support the continued reliance on existing technologies.²⁶⁵ For mobile sources, gasoline taxes in the United States are one-third to half what they are in Japan and Europe. Motor vehicles have substantially reduced emissions, and hybrid engines and ultra-low emission vehicles have the potential for further reduction at lower costs than fuel cell vehicles. For stationary sources, environmental laws make electric power production from old coal burning power plants attractive.²⁶⁶ Government subsidies for deploying clean energy technologies are granted in Japan and Europe, but are more limited in the United States.²⁶⁷ There are no current federal restrictions on carbon dioxide emissions.²⁶⁸ Carbon dioxide trading systems that are beginning in Europe may make clean technologies a more attractive investment, but they are not part of the U.S. legal regime.²⁶⁹ Moreover, there are proven existing technologies for generating electricity, such as gas turbines, reciprocating engines, and steam

²⁵⁹Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of the Waste Streams Related to Fuel Cells 7 (May 19, 2003).

²⁶⁰Craig Davis et al., Hydrogen Fuel Cell Vehicle Study 7 (American Physical Society, June 12, 2003).

²⁶¹Joseph J. Romm, The Hype About Hydrogen 36 (2004).

²⁶²U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan-Hydrogen Production 3-17 to 3-21 (June 3, 2003).

²⁶³California's AB 1493: Trendsetting or Setting Ourselves up to Fail?, 21 UCLA J. Envtl. L. & Pol'y 97, 123 (2002/2003).

²⁶⁴Jeffrey Ball, Green Dream: Hydrogen Fuel May Be Clean But Getting It Here Looks Mess, Wall St. J., Mar. 7, 2003, at A-1.

²⁶⁵Joseph J. Romm, The Hype About Hydrogen 36 (2004).

²⁶⁶*See generally* Arnold W. Reitze, Jr., New Source Review: Should It Survive?, 24 Envtl. L. Rep. (ELI) News & Analysis 10673-78 (July 2004).

²⁶⁷The federal government offers a \$1,000/kW subsidy for fuel cell purchase. New Jersey, Connecticut, and California offer subsidies as well. Joseph J. Romm, The Hype About Hydrogen 54 (2004).

²⁶⁸*See* 13 Cal. Code of Regs. § 1956.1, 1960.1, 1961. *See also* California Air Resources Board at <http://www.arb.ca.gov/msprog/ccvl/ccvl.htm>.

²⁶⁹Joseph J. Romm, The Hype About Hydrogen 32 (2004).

turbines that cost much less than fuel cells.²⁷⁰ In addition, existing electric utilities are skilled at imposing regulatory barriers, fees, interconnection charges, and insurance requirements designed to increase costs for those seeking to use fuel cells.²⁷¹

C. Consumer Acceptance

For nearly a century the automobile and its supporting infrastructure has evolved. Today about 125,000 gas stations are available in the United States to provide fuel delivered from a worldwide network of oil wells, refineries, and delivery systems. This system establishes the consumer expectations that the Hydrogen Initiative expects to be met for hydrogen in twelve years.²⁷² Consumers will be reluctant to use a new fuel unless it is as convenient, cheap, and as safe to dispense as gasoline, but current performance of the technology for hydrogen production, storage, and use will not meet these expectations.²⁷³

The desire for a cleaner environment has led to an interest in hydrogen, but for the majority of consumers, a fuel's low cost and ease of use are the main concerns. Hydrogen now is neither inexpensive nor easy to use. To date, there is "no high-volume market for high-purity hydrogen."²⁷⁴ Moreover, there are no hydrogen fuel standards to assure consumers they are purchasing fuel that is free of impurities (e.g., sulfur).²⁷⁵ Without the savings that economies of scale can bring, the cost of hydrogen will remain high.²⁷⁶ Some of the companies that testified before Congress on the hydrogen economy mentioned how much easier the infrastructure development would be to implement if hydrogen use was widespread.²⁷⁷ This is the "chicken and egg" problem that is often part of developing new technologies.²⁷⁸

In 2002, there were only seven hydrogen-refueling sites in the U.S.; one was in Arizona, five were in California, and one was in Nevada.²⁷⁹ In 2004, twelve hydrogen-fueling stations were operating in California, and Governor Schwarzenegger plans to have 150 to 200 open by 2010.²⁸⁰ Oil companies believe that to get consumers to buy hydrogen-fueled vehicles will require that about thirty percent of the 180,000 gas stations in the U.S. sell hydrogen.²⁸¹ California has about 140 natural-gas stations open to the public, and this appears to be inadequate to make natural gas powered vehicles attractive to the public.²⁸² In addition to few hydrogen stations, hydrogen fueling of motor vehicles is slow and difficult and cannot be done with the

²⁷⁰Joseph J. Romm, *The Hype About Hydrogen* 60 (2004).

²⁷¹Joseph J. Romm, *The Hype About Hydrogen* 64 (2004) (citing National Renewable Energy Laboratory Making Connections: Case Studies of Interconnection Barriers and Their Impact on Distributed Power Projects (July 2000)).

²⁷²American Physical Society, *The Hydrogen Initiative*, Executive Summary 4 (Mar. 2004).

²⁷³U.S. Dept. of Energy, *National Hydrogen Energy Roadmap* 14 (Nov. 2002).

²⁷⁴U.S. Dept. of Energy, *Draft, Multi-Year Research, Development and Demonstration Plan, Technical Plan—Hydrogen Production* 3-21 (June 3, 2003).

²⁷⁵TIAX, LLC, *California Clean Fuels Market Assessment*, 2003, 4.6 (Prepared for the California Energy Commission, Aug. 2003).

²⁷⁶U.S. Dept. of Energy, *National Hydrogen Energy Roadmap* 19, 25 (Nov. 2002).

²⁷⁷Hydrogen Economy Hearing, 108th Cong. 64 (2003).

²⁷⁸Don Anair, *Hydrogen Fuel Cells*, 3(1) *Catalyst* 18 (Union of Concerned Scientists, Spring 2004).

²⁷⁹Stacy C. Davis & Susan W. Diegel, *Transportation Energy Data Book* 6-6, tbl. 6.4 (Edition 23, Oct. 2003).

²⁸⁰Carolyn Whetzel, *Schwarzenegger Signs Order to Create Partnership for Hydrogen Fueling Network*, 35 *Env't Rep. (BNA)* 904 (Apr. 23, 2004).

²⁸¹Jeffrey Ball, *Green Dream: Hydrogen Fuel May Be Clean But Getting It Here Looks Messy*, *Wall St. J.*, Mar. 7, 2003, at A-1.

²⁸²Jeffrey Ball, *Green Dream: Hydrogen Fuel May Be Clean But Getting It Here Looks Messy*, *Wall St. J.*, Mar. 7, 2003, at A-1.

speed and ease demanded by consumers.²⁸³ However, there have been some successful fueling station demonstrations, one by the Chicago Transit Authority using a high pressure “reciprocating liquid pump;” another was an “energy station” project that began in Las Vegas in September 2002.²⁸⁴ Refueling infrastructure limitations would be eased by an evolutionary development of hydrogen vehicles where fleet applications that could be centrally fueled were converted to fuel cell vehicles, and subsequently fuel cell vehicles were produced for commuter cars in urban areas.

Hydrogen’s potential for leaks and explosions mandate extensive safety precautions, which consumers are unlikely to accept unless there is no other option. Insurance costs for those using hydrogen fuels and fuel cells also may be high. Citizen support of a hydrogen economy therefore is unlikely to materialize in the foreseeable future.

D. Competing Fuels and Technologies

Methanol, ethanol, biodiesel, and other fuels may work better and be more successful at replacing conventional gasoline and diesel fuel when petroleum becomes more expensive than it is today due to scarcity of supply. Government funding will not give hydrogen the boost it needs to be commercially successful if another fuel is cheaper, safer, and easier for the average person to use. Hybrid technologies are particularly promising, especially for use in motor vehicles.²⁸⁵ General Motors, as mentioned above, devotes part of its hydrogen fuel cell research to hydrogen hybrids, but electric/gasoline hybrids are more advanced, and they already are on the market. Electric/gasoline hybrid vehicles will be competitors in the near future with hydrogen fuel cell vehicles.²⁸⁶ The Toyota Prius has nearly the efficiency fuel cell vehicles are expected to attain, and hybrid diesel-electric vehicles are projected to be as efficient as a fuel cell vehicle.²⁸⁷ As long as gasoline-powered cars are cost-competitive, the superior range of such conventional automobiles makes it very difficult for hydrogen-powered cars to compete.²⁸⁸ At the end of 2002, hydrogen powered vehicles had a 200-250 mile range and gasoline vehicles had a 380-400 mile range.²⁸⁹ In addition, there is likely to be a lag effect even after hydrogen cars are otherwise competitive as many people will be highly reluctant to give up using a gasoline-powered vehicle as long as its fuel is affordable.

E. Ability to Reduce Dependence on Foreign Oil

Approximately two-thirds of the 20 million barrels of petroleum used daily in the United States is consumed by the transportation sector.²⁹⁰ Increasing fuel efficiency and diversifying the sources of oil could help, but neither offers a long-term solution to reducing the Nation’s dependence on foreign oil.²⁹¹ The Hydrogen Initiative envisions hydrogen being commercially used in transportation by 2020, but this cannot

²⁸³Venki Raman, *The Hydrogen Fuel Infrastructure for Fuel Cell Vehicles*, Challenges for the Chemical Sciences in the 21st Century: Energy and Transportation 68 (2003).

²⁸⁴Venki Raman, *The Hydrogen Fuel Infrastructure for Fuel Cell Vehicles*, Challenges for the Chemical Sciences in the 21st Century: Energy and Transportation 68 (2003).

²⁸⁵Sheila Schimpf, As Hybrids Gain in Popularity, More Models Planned in Coming Years, *Auto Officials Say*, 35 *Env’t Rep. (BNA)* 58 (Jan. 9, 2004).

²⁸⁶U.S. Dept. of Energy, *National Hydrogen Energy Roadmap* 31 (Nov. 22).

²⁸⁷Joseph J. Romm, *The Hype About Hydrogen* 7 (2004).

²⁸⁸Joseph J. Romm, *The Hype About Hydrogen* 7 (2004).

²⁸⁹Joseph J. Romm, *The Hype About Hydrogen* 7 (2004).

²⁹⁰Stacy C. Davis & Susan W. Diegel, *Transportation Energy Data Book 1-1* (Edition 23, Oct. 2003). U.S. transportation petroleum use in 2002 was 161.9% of the domestic petroleum production. *Id.*

²⁹¹American Physical Society, *The Hydrogen Initiative*, Executive 2 (Mar. 2004).

be accomplished without a major improvement in the relevant technology.²⁹²

Some members of Congress are concerned that the President's claim that hydrogen would reduce U.S. dependence on foreign oil is baseless.²⁹³ Representative Henry Waxman (D-CA) has contended that the DOE's studies do not support the President's contention.²⁹⁴ The rate at which hydrogen vehicles could be added to the nation's vehicle fleet would not catch up with the rising demand for oil, due to increases in vehicle miles traveled and the decline in vehicle fuel efficiency. If we continue to be dependent on oil, we will remain hostages to the problems of the Middle East and to other potentially unstable regions of the world. Very little domestic oil remains; the amount likely to be found in Alaska is disputed, but the supply is too small to seriously affect the nation's need of foreign oil. DOE predicts that approximately 40 million tons of hydrogen per year will be required in the hydrogen economy, enough to power 25 million homes or 100 million cars.²⁹⁵ This is the current worldwide production.²⁹⁶ If natural gas is used to produce hydrogen and the increased demand for natural gas is satisfied by using imported natural gas, there would be little, if any, reduction in total energy imports.²⁹⁷

F. Environmental Impacts of a Hydrogen-Based Economy

The environmental benefits of a hydrogen-based economy cited by many proponents seem too good to be true. They assert that hydrogen when combusted produces only water and heat.²⁹⁸ Hydrogen used in a fuel cell produces electricity and water. It is true that hydrogen has the potential for providing our energy dependent society with a pollution-free source of power that also has no greenhouse gas emissions. But the actual impacts on the environment of widespread hydrogen production and use are unknown. While combusting hydrogen produces only water as a byproduct, the common hydrogen-producing technologies usually involve the conversion of fossil fuels that can result in adverse environmental impacts.²⁹⁹

Hydrogen does have a start-to-finish efficiency dilemma; it takes more energy to produce hydrogen than is provided by the hydrogen that is the end product. This net energy loss is further compounded if the hydrogen has to be frozen or compressed for storage and transport and then re-heated or decompressed for use. This means that at least in the short term a hydrogen-based economy may increase the use of fossil fuels. Many of the cleaner sources of hydrogen, especially natural gas, might better be used directly instead of going through the expensive, energy-consuming conversion to hydrogen. The argument for conversion to hydrogen is the versatility

²⁹²American Physical Society, *The Hydrogen Initiative*, Executive 3 (Mar. 2004).

²⁹³Bush Fuel Cell Plan Would Increase Burden on EPA Waste Programs, XX *Env'tl. Pol'y Alert* (Inside EPA) 20: 3 (Oct. 1, 2003).

²⁹⁴Bush Fuel Cell Plan Would Increase Burden on EPA Waste Programs, XX *Env'tl. Pol'y Alert* (Inside EPA) 20: 3 (Oct. 1, 2003).

²⁹⁵U.S. Dept. of Energy, *National Hydrogen Energy Roadmap* 11 (Nov. 2002).

²⁹⁶Hydrogen Economy Hearing, 108th Cong. 57 (2003). The U.S. consumes about twenty percent of the world's hydrogen. Stacy C. Davis & Susan W. Diegel, *Transportation Energy Data Book* 6-12, tbl. 6.8 (Edition 23, Oct. 2003).

²⁹⁷National Research Council, *The Hydrogen Economy: Opportunity, Costs, Barriers, and R&D Needs* xvi (Prepublication copy 2004).

²⁹⁸Nitrogen oxides (NO_x), which are pollutants associated with combustion, are created primarily from the oxidation of the nitrogen, present in air, at high temperature. To prevent NO_x formation requires the temperature of combustion be kept below the level at which NO_x is created.

²⁹⁹U.S. Dept. of Energy, *Draft, Multi-Year Research, Development and Demonstration Plan*, Executive Summary i (June 3, 2003); U.S. Dept. of Energy, *Draft, Multi-Year Research, Development and Demonstration Plan*, Program Benefits 2-6 (June 3, 2003). About sixty percent of people in the U.S. "live in areas where levels of one or more air pollutants are high enough to affect public health and/or the environment." *Id.*

of the fuel, but this may not make hydrogen a rational choice over the direct use of clean sources of energy in the near term. In the long term, if we are to maintain a high standard of living in the post-petroleum age, a hydrogen-based economy is an alternative that should be considered. Using renewable energy to produce hydrogen through electrolysis of water or by processing coal while sequestering carbon dioxide are technologies that may be environmentally acceptable. However, these approaches have numerous technical and economic obstacles to overcome if they are to become commercially accepted. More importantly, a serious hydrogen research and development program may lead to technology advances that provide options that are not available today.

1. Potential Climate Effects

Hydrogen production is expected to increase the emissions of the greenhouse gas carbon dioxide (CO₂) if hydrogen is produced using coal, oil, or natural gas, unless the CO₂ that is a byproduct is sequestered. Sequestration in geologic formations is the principal approach being considered because of the abundance of potential storage sites in depleted oil reservoirs, unmineable coal seams, and saline formations.³⁰⁰ However, we have little knowledge of whether sequestration will be effective for the long time periods required. Even losses as small as one percent per year, while difficult to detect, could make sequestration a costly failure.³⁰¹ Thus, monitoring sequestration efforts and the ability to have continuing meaningful oversight of stored carbon dioxide is a necessary part of a sequestration program.

DOE's FutureGen project is focused on developing cost-effective sequestration technology, which does not currently exist and may be difficult to achieve.³⁰² The cost of CO₂ sequestration will be reflected in the cost of hydrogen and may cost \$1000 per ton of carbon removed. In contrast, reducing CO₂ emissions by fifty percent from the electric power industry is estimated to cost between \$75 and \$150 per ton of carbon removed.³⁰³ If hydrogen is produced using renewable sources of electric power or nuclear power, no carbon dioxide is released. But, as previously discussed, this approach to the generation of hydrogen is unlikely to be used in the foreseeable future. If high-temperature fuel cells are used at stationary sources and their waste heat is utilized, overall CO₂ savings may be significant, depending on the alternative process to which it is compared. However, the low temperature fuel cells used for mobile source applications may not result in meaningful CO₂ emission reductions when compared with "clean vehicles."³⁰⁴ According to DOE, a typical vehicle emits 374 grams of green house gas (GHG) per mile traveled. If the hydrogen fuel is produced by grid electricity without sequestration of CO₂, the figure increases to 436 grams. If fuel cell vehicles use hydrogen produced by steam reforming of natural gas, emissions drop to 145 grams because the increased efficiency of fuels cells compared to internal combustion engines helps offset the emissions attributable to the conversion of fossil fuel into hydrogen.³⁰⁵ However, much of the benefit of hydrogen fuel on GHG emissions also can be obtained by using existing motor vehi-

³⁰⁰U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Executive Summary i (June 3, 2003); U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Program Benefits (June 3, 2003).

³⁰¹Joseph J. Romm, *The Hype About Hydrogen* 166 (2004).

³⁰²Hydrogen Economy Hearing, 108th Cong. 32 (2003) (testimony of Hon. David K. Garman, Asst. Sec. for Energy Efficiency and Renewable Energy, U.S. Dept. of Energy).

³⁰³David W. Keith & Alexander E. Farrell, *Rethinking Hydrogen Cars*, 301 Science 315 (July 2003).

³⁰⁴Joseph J. Romm, *The Hype About Hydrogen* 59 (2004).

³⁰⁵Well-to-Wheels Analysis of Future Automotive Fuels and Powertrains in the European Context 5 (European Comm'n Joint Research Centre, Version 16, Jan. 2004), available at <http://ies.jrc.cec.eu.int/Download/eh/33>.

cle technology. Natural gas-fueled vehicles emit 310 grams per mile, and hybrid electric vehicles fueled with natural gas have GHG emissions of 177 grams per mile.³⁰⁶ To control the nation's carbon emissions requires dealing with motor vehicles because they accounted for 32.8 percent of U.S. carbon emissions in 2001, although light-duty vehicles contribute only about twenty percent.³⁰⁷ The transportation sector has been responsible for nearly one-third of U.S. carbon emissions for more than a decade,³⁰⁸ but the transportation sector is expected to contribute half of the increase in the U.S. CO₂ emissions projected for 2025.³⁰⁹

Carbon dioxide releases can be more effectively controlled by reducing the amount of fossil fuel combusted; for motor vehicles this means increasing vehicle miles traveled per unit of fuel. The Bush Administration's Global Climate Change Initiative calls for an eighteen percent reduction by 2012 in carbon intensity, which is the ratio of greenhouse gas emissions to economic output.³¹⁰ Such a reduction, even if achieved, will not prevent increased atmospheric CO₂ concentrations because global CO₂ emissions appear to require reduction by an order of magnitude in order to stabilize atmospheric CO₂ concentrations.³¹¹ Carbon dioxide emissions will need to be controlled from both mobile and stationary sources regardless of efficiency improvements.³¹²

The use of hydrogen also is likely to result in an increase in the amount of molecular hydrogen (H₂) released into the atmosphere. About half the hydrogen in the atmosphere is produced by photochemical oxidation of methane and other hydrocarbons, and half comes from biogenic processes and combustion. One quarter of the total emissions is associated with human activities.³¹³

Hydrogen is an indirect GHG that reacts with the hydroxyl radical (OH) in the atmosphere and with soil microorganisms. The reactions in the atmosphere increase the greenhouse gas methane, but the effect of hydrogen emissions on the soil sink is unknown.³¹⁴ Molecular hydrogen is, after methane, the most abundant atmospheric trace gas. The effect of increased hydrogen releases from human activities on the atmosphere's ratio of trace gases or on the ratio of deuterium to hydrogen is largely unknown.³¹⁵ To complicate matters, the effects of hydrogen releases on the atmo-

³⁰⁶Matthew L. Wald, Will Hydrogen Clear the Air? Maybe Not, Say Some, *New York Times*, Nov. 11, 2003, at C1.

³⁰⁷Stacy C. Davis & Susan W. Diegel, *Transportation Energy Data Book 11-1* (Edition 23, Oct. 2003); U.S. Env'tl. Protection Agency, *Light-Duty Automotive Technology and Fuel Economy Trends: 1975 Through 2004*, available at <http://www.epa.gov/otaq/fetrends.htm>.

³⁰⁸Stacy C. Davis & Susan W. Diegel, *Transportation Energy Data Book 11-5*, tbl. 11.4 (Edition 23, Oct. 2003).

³⁰⁹U.S. Dept. of Energy, Energy Information Administration, *Annual Energy Outlook 2003*, tbl. A19 (Jan. 2003).

³¹⁰Carbon Sequestration Program Explores Options, *Clean Coal Today* 57: 6 (Spring 2004) (DOE/FE-0468).

³¹¹David W. Keith & Alexander E. Farrell, Rethinking Hydrogen Cars, 301 *Science* 315, 316 (July 2003).

³¹²Greenhouse gas emissions in the U.S. increased thirteen percent during 1990-2002. Greenhouse Gases Increased 13 Percent from 1990 to 2002, According to EPA, 35 *Env't Rep.* (BNA) 986 (May 7, 2004).

³¹³Greenhouse Gases Increased 13 Percent from 1990 to 2002, According to EPA, 35 *Env't Rep.* (BNA) 582 (May 7, 2004).

³¹⁴Greenhouse Gases Increased 13 Percent from 1990 to 2002, According to EPA, 35 *Env't Rep.* (BNA) 582 (May 7, 2004).

³¹⁵Thom Rahn et al., Extreme Deuterium Enrichment in Stratospheric Hydrogen and the Global Atmospheric Budget of H₂, 424 *Nature* 918 (Aug. 2003). Deuterium, also known as heavy-hydrogen, is an isotope of hydrogen having twice the mass of ordinary hydrogen.

sphere vary with elevation.³¹⁶ Experience with natural gas indicates that leakage of hydrogen will occur, and as the hydrogen economy develops, it should be anticipated that a small percent of the fuel will be added to the environment.³¹⁷ The losses could be more significant from refueling, depending on the form in which hydrogen is delivered to a vehicle.³¹⁸ While the environmental effects will be a function of the amount of hydrogen released, leakage rates are unknown. They could be as high as ten to twenty percent, with three percent a more probable estimate, but perhaps a loss rate of less than one percent could be achieved.³¹⁹

The dispersion of hydrogen into the atmosphere might not be as destructive to the biosphere as the addition of water to the stratosphere that is formed when escaping hydrogen reacts with oxygen.³²⁰ One recent study contends that the resultant increase in water in the atmosphere would lead to *cooler* stratospheric temperatures, and the ice crystals in the stratosphere would deplete ozone.³²¹ Critics of the study contend that its conclusions “represent unlikely extreme cases that are not well connected to current or likely future levels of hydrogen usage or system leakage.”³²²

Overall, the long-term impacts of a hydrogen releases on the environment are essentially unknown. Some contend hydrogen is environmentally safe; others worry its production could be environmentally destructive.

2. Stationary Source Impacts

The standard current process for producing hydrogen is to use steam methane reforming (SMR), which is a multi-step process. Natural gas (CH_4) reacts with water vapor under high pressure and temperature in the presence of a catalyst (usually nickel) to form carbon monoxide (CO) and hydrogen. In the second stage, called the water-gas shift, CO is exposed to steam to produce CO_2 and hydrogen. The flue gas is now seventy to eighty percent hydrogen plus CO_2 , CH_4 , water vapor, and CO. In the third stage, pressure swing absorption (PSA) is used to separate the hydrogen and the remaining gases are vented to the atmosphere as air pollutants and GHGs.³²³

The process used to produce hydrogen will affect the type and quantity of emissions released into the atmosphere. However, there is little evidence that producing hydrogen from existing industrial processes produces pollutants that are not routinely handled by industry.

If increased supplies of hydrogen are to be produced from natural gas, natural gas demand will increase. Natural gas prices already have increased substantially because of the increased demand for this fuel from electric power plants.³²⁴ A hydrogen-based economy could put additional upward pressure on natural gas

³¹⁶Thom Rahn et al., Extreme Deuterium Enrichment in Stratospheric Hydrogen and the Global Atmospheric Budget of H_2 , 424 *Nature* 918 (Aug. 2003).

³¹⁷Michael J. Prather, An Environmental Experiment With H_2 ?, 302 *Science* 581 (Oct. 24, 2003).

³¹⁸Joseph J. Romm, The Hype About Hydrogen 94 (2004).

³¹⁹Martin G. Schultz et al., Air Pollution and Climate-Forcing Impacts of a Global Hydrogen Economy, 302 *Science* 624 (Oct. 24, 2003).

³²⁰Tracey K. Tromp et al, Potential Environmental Impact of a Hydrogen Economy on the Stratosphere, 300 *Science* 1740, 1741 (June 13, 2003).

³²¹Tracey K. Tromp et al, Potential Environmental Impact of a Hydrogen Economy on the Stratosphere, 300 *Science* 1740, 1741 (June 13, 2003).

³²²Daniel M. Kammen & Timothy E. Lipman, Assessing the Future Hydrogen Economy, 302 *Science* 226 (Oct. 10, 2003).

³²³Joseph J. Romm, The Hype About Hydrogen 73 (2004).

³²⁴See Alan Greenspan, Testimony before House Committee on Energy and Commerce, June 10, 2003, available at <http://www.federalreserve.gov/boarddocs/testimony/2003/20030610/default.htm>; Mike Ferullo, Increased Domestic Drilling Recommended to Reduce Record Prices for Natural Gas, 35 *Env't Rep.* (BNA) 722 (Apr. 2, 2004).

prices.

A major effort to develop new natural gas supplies also could be expected to result in increased drilling with its associated adverse environmental impacts. One important pollution problem relates to the disposal of “produced water.” For example, coalbed natural gas developers in Montana and Wyoming are opposing the more stringent water pollution control requirements that are pending.³²⁵ If more natural gas is produced and used, there will be more small leaks of this fuel to the environment. Methane, the primary constituent of natural gas has twenty-one times the global warming effect of CO₂.³²⁶

Hydrogen also can be produced from coal using the water-gas shift reaction used for conversion of natural gas. This process is the focus of DOE’s FutureGen program, discussed *supra*. The use of coal for hydrogen production will depend on technical and cost reduction advances. The most important unresolved problem is whether effective long-term carbon sequestration can be accomplished on a large scale in a manner that is economical and practical.

In addition, water can be used to produce hydrogen through electrolysis using electricity generated by fossil fuels or nuclear power. Since the conversion process is about seventy percent efficient and electric generation is about thirty percent efficient, the overall efficiency is about twenty percent (.7 x .3). Thus only one-fifth of the primary energy remains available in the hydrogen.³²⁷ All of the environmental problems created by the electric power industry would be part of the hydrogen production process.³²⁸ To replace the gasoline sold in the United States with hydrogen produced by electrolysis would require more electricity than is sold in the nation today.³²⁹

Environmentalists and many industry representatives want to encourage the production of hydrogen by electrolysis using renewable sources of electricity. At this time, wind power is the most developed and least costly method of producing power from renewable sources. But today this source of electricity produces less than one percent of the nation’s electricity.³³⁰ To produce a kilogram of hydrogen requires nine kilograms of water. The forty million tons per year of hydrogen, which is the amount projected to be needed for an established hydrogen-based program in the United States, would require at least 360 million tons of water or 90 billion gallons.³³¹ Where will the water come from? If wind power from the Great Plains is to be used for hydrogen production, either electricity or hydrogen will have to be shipped from where the power is being generated to where it will be used. This will require major additional infrastructure.

Wind power also could be developed from offshore turbines; Denmark and the United Kingdom have pioneered this technology.³³² Although no offshore facilities

³²⁵Tribe’s Role In Powder River Basin Hands EPA Tough Energy Choices, XXI Env’tl. Pol’y Alert (Inside EPA) 4: 23 (2004).

³²⁶Joseph J. Romm, The Hype About Hydrogen 149 (2004).

³²⁷Joseph J. Romm, The Hype About Hydrogen 75 (2004).

³²⁸*See generally*, Arnold W. Reitze, Jr., State/Federal Command and Control Regulation of Emissions from Fossil Fuel Electric Power Generating Plants, 32 Env’tl. L. 369 (2002).

³²⁹Joseph J. Romm, The Hype About Hydrogen 76 (2004).

³³⁰National Energy Policy Development Group, National Energy Policy (Report to the President, May 2001). Wind energy accounts for six percent of the renewable electricity generation and 0.1% of the total electricity supply. *Id.* at 6.6

³³¹The atomic weight of hydrogen is 1.0079; for oxygen it is 15.9994; therefore, water (H₂O) has an atomic weight of 18.0152. Water is nine times heavier than its hydrogen component.

³³²Michael Schulz, Questions Blowing in the Wind: The Development of Offshore Wind as a Renewable Source of Energy in the United States, 38 New Eng. L. Rev. 415, 418 (2004).

currently exist in the United States, several proposals have been made to site wind-based facilities at East Coast sites. One major offshore wind energy proposal to develop a wind energy project in Nantucket Sound has been the subject of intense controversy and litigation by local interests.³³³ The Nantucket opposition continues in court³³⁴ and administratively with the Army Corps of Engineers.³³⁵ The Corps expects to complete a draft environmental impact statement in mid 2004, and a final decision on the permit will not be made until 2005.³³⁶ Expansion of wind or solar power electric generating capacity, however, would produce more environmental benefits if it was used as a substitute for electricity generated from old coal-fired power plants, but this requires wind facilities to be located where that power can be sent to appropriate grid.³³⁷

Solar power can be used to produce hydrogen³³⁸ in a manner that is non-polluting and low in operating costs. Moreover, the energy source is inexhaustible. But the capital costs are high for the existing technology needed to produce hydrogen using photovoltaic energy.³³⁹ Because of the number of technological breakthroughs needed, it is difficult to predict when cost-effective solar technology will be available. At this time, solar energy accounts for about 0.02 percent of the electricity generated in the U.S.³⁴⁰ A World Resources Institute presentation noted that use of photovoltaics to supply the U.S. economy would require 164,000 square miles of land, an area larger than the State of California.³⁴¹

The cost of reducing conventional pollutants from motor vehicles by using hydrogen fuel will be high. The reason is that gasoline-powered automobiles have been improved to comply with air pollution requirements so that their emissions per unit of energy utilized is very low compared to other industrial sectors or to other transportation modes.³⁴² Continuous improvement in motor vehicle emissions is expected to continue. Therefore, the benefits, in terms of reduced air emissions from a hydrogen-based transportation sector, will be low when compared with costs. For example, NO_x reductions from mobile sources using hydrogen will cost about \$1 million per ton of NO_x, but EPA's Tier 2 standards are projected to cost \$2000 to eliminate a ton of NO_x.³⁴³ Inspection and maintenance programs will cost about \$4000

³³³See *Alliance to Protect Nantucket Sound, Inc. v. United States Dep't of the Army*, 288 F. Supp. 2d 64 (D. Mass. 2003); *The Alliance to Protect Nantucket Sound, The Worst Location*, available at <http://www.saveoursound.org/>.

³³⁴*Alliance to Protect Nantucket Sound, Inc. v. United States Dep't of the Army*, (No. 03-2604) (1st Cir.).

³³⁵The opponents argue that the wind project will threaten wildlife, impede navigation, discourage tourism, and be aesthetically unpleasing. While these environmental concerns are site specific, it would be reasonable to expect "not in my backyard" opponents to emerge for some substantial projects.

³³⁶See U.S. Army Corps of Engineers, Fact Sheet (Nov. 4, 2004), available at <http://www.nae.usace.army.mil/projects/ma/ccwf/farmfact.pdf>.

³³⁷U.S. Army Corps of Engineers, Fact Sheet (Nov. 4, 2004).

³³⁸U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Program Benefits 2-10, 2-11 (June 3, 2003).

³³⁹U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Program Benefits 3-5 (June 3, 2003).

³⁴⁰National Energy Policy Development Group, National Energy Policy 6-7 (Report to the President May 2001).

³⁴¹IPHE Ministerial Meeting, Washington, D.C., Nov. 19, 2003, Jonathan Pershing & Jim MacKenzie, Energy and Pollution Program, World Resources Institute.

³⁴²David W. Keith & Alexander E. Farrell, *Rethinking Hydrogen Cars*, 301 Science 315 (July 2003).

³⁴³David W. Keith & Alexander E. Farrell, *Rethinking Hydrogen Cars*, 301 Science 315 (July 2003).

per ton and programs to scrap old vehicles cost about \$10,000 per ton of NO_x.³⁴⁴ NO_x control from electric power production also has costs in the \$10,000 per ton range.³⁴⁵ Thus hydrogen vehicles are a costly way to reduce NO_x, but they would benefit the environment by not having a small portion of the vehicle fleet producing high emissions, which occurs with gasoline power vehicles.³⁴⁶

Many general descriptions of hydrogen fuel cells state that pure water is the only byproduct created by fuel cell use. However, according to a spokesman from the University of California, that is not quite true.³⁴⁷ Fuel cells also can emit a small amount of nitric oxide, which is a precursor to photochemical oxidants, and a fuel cell also gives off the products of the degradation of the fuel cell stack.³⁴⁸ If fuel cells are produced using nanotechnology, the environmental impacts are largely unknown.³⁴⁹ Fuel cells that create their needed hydrogen from onboard reformation of gasoline, natural gas, or methanol would present additional environmental problems, but the use of such fuel cells do not appear to be likely at this time.

Perhaps the most significant role for environmental law to encourage the use of renewable technology in general and hydrogen fuel cells in particular would be to make emission requirements for existing facilities more stringent and siting problems for facilities using existing technologies difficult to overcome. This approach would help make non-polluting technologies more attractive. The Clean Air Act's (CAA) new source review (NSR) program makes it a challenge to site new major sources in areas that do not meet national ambient air quality standards. Proposals to further reduce the level of emission caps for sulfur dioxide and nitrogen oxides further enhance the attractiveness of non-polluting energy sources.³⁵⁰ If fuel cells are to be part of the solution to urban air pollution, their most promising applications involve stationary power sources in nonattainment areas where fuel cells can achieve higher overall efficiency through cogeneration systems and can use less costly technology.³⁵¹

3. Disposal and Recycling

EPA's Office of Solid Waste and Emergency Response (OSWER) is investigating the ramifications of fuel cell use³⁵² under the Resource Conservation and Recovery Act (RCRA) statute.³⁵³ In a May 2003 report, OSWER focused on PEM fuel cells because they are the closest to "widespread commercialization."³⁵⁴ Used fuel cells contain components that are likely to be hazardous waste under RCRA based on

³⁴⁴David W. Keith & Alexander E. Farrell, Rethinking Hydrogen Cars, 301 Science 315 (July 2003).

³⁴⁵David W. Keith & Alexander E. Farrell, Rethinking Hydrogen Cars, 301 Science 315 (July 2003).

³⁴⁶David W. Keith & Alexander E. Farrell, Rethinking Hydrogen Cars, 301 Science 315 (July 2003).

³⁴⁷Hydrogen Economy Hearing, 108th Cong. 68 (2003) (prepared statement of Scott Samuelson, Director, National Fuel Cell Center, University of California).

³⁴⁸Hydrogen Economy Hearing, 108th Cong. 68 (2003).

³⁴⁹See Lynn L. Bergeson & Bethami Auerbach, The Environmental Regulatory Implications of Nanotechnology, 35 Env't Rep. (BNA) 840 (Apr. 16, 2004).

³⁵⁰See generally Arnold W. Reitze, Jr., State and Federal Command-and-Control Regulation of Emissions From Fossil-Fuel Electric Power Generating Plants, 32 Env'tl. L. 369 (2002).

³⁵¹Joseph J. Romm, The Hype About Hydrogen 39 (2004).

³⁵²Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 14 (May 19, 2003).

³⁵³RCRA is the common name for the Solid Waste Disposal Act found at 42 U.S.C.A. §§ 6901 to 6992k.

³⁵⁴Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 4 (May 19, 2003).

their characteristics.³⁵⁵ Some components that are too valuable to be discarded will be recycled.³⁵⁶

However, according to OSWER, while reuse is the ideal option, this option is unlikely to occur in the near future for most components because of the rapid pace of technology change and the deterioration of materials used in fuel cells.³⁵⁷ Recycling methods include manual separation of fuel cells, chemical recovery to electrochemically recover precious metals, and mechanical treatment, which involves shredding fuel cell parts and separating them based on density.³⁵⁸ Disposal options include incineration and land disposal.³⁵⁹ The OSWER report focused on the unique problems presented by the major components of the PEM fuel cell: the proton exchange membrane (8% of the fuel cell by weight), the electrocatalysts (less than 7% of the fuel cell by weight), and the bipolar plate (77% of the fuel cell by weight).³⁶⁰

The proton exchange membrane cannot be reused because it becomes contaminated and dehydrated in use.³⁶¹ Recycling the fluorine-containing polymer membranes (the most commonly used substance is called nafion) would involve chemical extraction of the membrane from its position between the electrodes, and a method to accomplish this has not yet been developed.³⁶² Incineration is not a useful option because the membranes contain hydrogen fluoride, and management of the combustion byproducts would be difficult.³⁶³

The electrocatalysts are made of platinum and platinum-group metals, and they are recycled because these metals are expensive.³⁶⁴ The chemical process used to recover platinum and ruthenium (a platinum group metal commonly used in fuel cells) already has been developed and is less environmentally damaging than primary production of platinum.³⁶⁵ The high cost of platinum drives the search for

³⁵⁵Characteristic wastes are those solid wastes that are ignitable, corrosive, reactive, or toxic as defined at 40 C.F.R. pt. 261, subpt. C.

³⁵⁶Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 7 (May 19, 2003).

³⁵⁷Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 8 (May 19, 2003).

³⁵⁸Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 8 (May 19, 2003).

³⁵⁹Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 8 (May 19, 2003).

³⁶⁰Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 8-9 (May 19, 2003).

³⁶¹Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 9 (May 19, 2003).

³⁶²Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 9 (May 19, 2003).

³⁶³Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 9 (May 19, 2003).

³⁶⁴Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 9 (May 19, 2003).

³⁶⁵Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical

alternative catalyst materials.³⁶⁶

Bipolar plates, which make up most of the weight of the fuel cell, may be best disposed of through incineration due to the toxicity of the recycling process and because the composition of the plates is changing as new technology develops.³⁶⁷ Graphite, carbon, and steel are current options for plate composition; steel is the easiest to clean and reuse or recycle.³⁶⁸ The remaining components of the fuel cells may have to be disposed of as hazardous waste, including newly developed materials that are present in fuel cells about which OSWER knows little. OSWER has concluded that disposal of fuel cell materials will be very complicated.³⁶⁹

Chemical hydride fuel cells store hydrogen more efficiently than processes that depend on using hydrogen in the form of a compressed gas or cryogenic liquid. Chemical hydride fuel cells produce hydrogen by catalyzing solutions of chemicals that may produce hazardous byproducts. RCRA requirements could hamper chemical hydride fuel cell development, according to at least one manufacturer. Other companies believe that chemicals can be selected that will not create wastes that are hazardous under RCRA.³⁷⁰

VII. Conclusion

There are a wide range of views about the prospects and timing of the introduction of fuel cells in passenger vehicles on a commercial scale. Optimists (especially the EERE) contend that vehicles could be available for sales by 2018, and we could have a hydrogen economy by 2040;³⁷¹ skeptics argue that fifty or more years will be required. Hydrogen technology has changed since the 1970s, but large-scale use will not occur without major breakthroughs in the technology.³⁷² There are significant cost and technology barriers to a full “hydrogen economy,” which, especially in the realm of storage, are not likely to soon be overcome. If hydrogen is to become a commercially used energy carrier it will probably develop first for stationary source applications. Its use in motor vehicles can be expected to first appear in fleet vehicles and subsequently in commuter vehicles. Today, hydrogen is not a practical choice for motor vehicles and probably will not attain practicability by DOE’s deadlines. Moreover, without controls on CO₂, either through limits on emissions or a tax on emissions, an important potential incentive to the development of a hydrogen-based economy does not exist.

Some critics have questioned why there is an emphasis on hydrogen, but not on

ical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 10 (May 19, 2003).

³⁶⁶Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 10 (May 19, 2003).

³⁶⁷Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 11 (May 19, 2003).

³⁶⁸Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 11 (May 19, 2003).

³⁶⁹Office of Solid Waste and Emergency Response: Strategic Monitoring and Trends Project; Analytical Paper #01: Emerging Issues in the Management of Waste Streams Related to Fuel Cells 11 (May 19, 2003).

³⁷⁰EPA Faces Growing Pressure To Exempt Hydrogen Fuel Cell Wastes, XXI Env’t Pol’y Alert (Inside EPA) 11: 6 (May 26, 2004).

³⁷¹U.S. Dept. of Energy, Draft, Multi-Year Research, Development and Demonstration Plan, Program Benefits 2-8 (June 3, 2003).

³⁷²California’s AB 1493: Trendsetting or Setting Ourselves Up to Fail?, 21 UCLA J. Envtl. L. & Pol’y 97, 124 (2002/2003).

hybrid engine vehicles or other potentially cost-effective alternative technologies. The American Petroleum Institute has expressed concern in Congressional hearings that they are wary of investing in the infrastructure and wary of the likelihood of the success of hydrogen technologies.³⁷³ For the next decade, advanced gasoline and clean diesel engines will deliver more benefits sooner than hydrogen or fuel cells.³⁷⁴ Moreover, energy efficiency improvements have the potential for improving the environment and decreasing petroleum consumption more quickly than the Hydrogen Initiative, and as these improvements are commercialized, the benefits of hydrogen fuel cells become less significant. A well-to-wheels analysis, that evaluates the energy losses in producing hydrogen from various hydrocarbons, indicates the benefits of fuel cells when compared with other vehicle propulsion systems are modest. The energy required in BTUs per mile are: 2368 from a fuel cell vehicle using hydrogen derived from methane and 2867 from a compressed natural gas (CNG), spark ignited, hybrid electric vehicle.³⁷⁵ The fuel cell vehicle has the additional advantage of releasing only about one-eighth the CO₂ of a CNG vehicle, but only if CO₂ is sequestered in the hydrogen production process. Conventional pollutants released in producing the hydrogen may be higher than those released by the operation of the CNG vehicle.³⁷⁶

Since the release of the National Energy Policy in May 2001, DOE has increased its efforts to launch a workable “hydrogen economy” program to meet the goals identified by the Administration in the future (2010-2045).³⁷⁷ However, much of the optimism at DOE about using hydrogen as a fuel is based on achieving substantial improvements in technology at every stage of hydrogen production and use. Hydrogen may play a role in meeting future energy needs, but a “hydrogen economy” may not be a realistic expectation.³⁷⁸ Trying to jump-start the infrastructure needed for a hydrogen-based transportation system appears premature, but some industry proponents argue that infrastructure development can dramatically decrease the time required for consumer acceptance of fuel cell vehicles.³⁷⁹

The rush to a “hydrogen economy” by our political leadership appears to be occurring with inadequate analysis of energy, environmental, and economic issues. What is needed now is a serious open discussion concerning energy policy in general and alternatives to petroleum in particular. A thorough analysis of the costs and benefits of governmental efforts to develop the hydrogen economy should be prepared before

³⁷³See Hydrogen Economy Hearing, 108th Cong. 86-88 (2003) (prepared statement of the American Petroleum Institute).

³⁷⁴Daniel Sperling & Joan Ogden, *The Hope for Hydrogen*, Issues in Sci. & Tech., Spring 2004, at 82.

³⁷⁵Craig Davis et al., *Hydrogen Fuel Cell Vehicle Study 7* (American Physical Society, June 12, 2003).

³⁷⁶Craig Davis et al., *Hydrogen Fuel Cell Vehicle Study 7* (American Physical Society, June 12, 2003).

³⁷⁷U.S. Dept. of Energy, *Draft, Multi-Year Research, Development and Demonstration Plan*, Introduction 1-1, 1-3, 1-9 (June 3, 2003).

³⁷⁸One alternative fuel cell company representative testified at the House hearing that moving to a hydrogen economy will be more difficult than putting a man on the moon, and that “[w]e will never see a wholesale conversion at any point in time to a new fuel (hydrogen or otherwise),” but that it would take many types of alternative fuels to successfully reduce dependence on foreign oil and environmental pollution. Hydrogen Economy Hearing, 108th Cong. 54 (2003) (prepared statement of Catherine Rips, Sunline Transit Agency).

³⁷⁹Infrastructure development can shorten the time required to reach the “inflection point.” This is the point where market forces take over and both energy and automotive sectors can achieve risk-adjusted returns that justify investment in a technology. Dr. J. Byron McCormick, Executive Director, Fuel Cell Activities, General Motors, *Hydrogen “The First Step” Transition to the Vehicles of Tomorrow* (2004).

we spend large sums on this technology to the exclusion of other, perhaps more promising approaches.³⁸⁰ Hydrogen-based systems should compete in the marketplace with existing energy systems that continue to improve and with other new systems, such as fuels produced at biomass plants, that may develop. It is undesirable to select hydrogen for special consideration without giving more attention to the full range of clean energy options. Governmental efforts should be limited to ensuring that existing and emerging technologies have an equal opportunity in the marketplace. Hydrogen should not be favored over other potential fuels, such as biofuels, by the premature infusion of large amounts of federal money. Moreover, federal and state funding should not be spent on hydrogen fuel development at the expense of programs aimed at near-term improvement in motor vehicle emissions or renewable energy technologies. A long-term program to develop a hydrogen economy must not be used to avoid the environmental and national security benefits that could be achieved quickly by combusting less fuel through improvements in fuel efficiency or through land-use planning efforts.

The nation should pursue a balanced R&D program that includes hydrogen and non-hydrogen alternatives. Research and development in hydrogen fuel cell technology and hydrogen storage and distribution systems may increase our long-term transportation options, which will be important in the coming post-petroleum age. Moreover, federal funding of hydrogen research may be justified because the major benefits of this technology in terms of potential increased energy security, pollution reduction, and GHG reductions are benefits for the nation and are not benefits that the private sector realistically can recoup from investments that it makes.

³⁸⁰The analysis should be the equivalent of a programmatic Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA), although a programmatic EIS probably could not be mandated under existing law. The “deprivation of information” may be grounds for a federal court to find standing to challenge a government action. *See* *Foundation on Econ. Trends v. Watkins*, 731 F. Supp. 530 (D.D.C. 1990). But to have standing in a programmatic EIS case requires the plaintiff to challenge specific agency action in contrast to seeking an advisory opinion. The nature of the hydrogen program will make it difficult to meet the standing requirements. The courts are generally opposed to using the judiciary to decide national policy issues that should be left to the discretion of Congress. *See* *Lujan v. National Wildlife Fed’n*, 497 U.S. 871 (1990); *Foundation on Econ. Trends v. Lyng*, 943 F.2d 79 (D.C. Cir. 1991); and *Wilderness Soc’y v. Griles*, 824 F.2d 4 (D.C. Cir. 1987). Even if standing was recognized, the NEPA process does not apply to Congress or the President. 40 C.F.R. § 1508.12. Legislative proposals from federal agencies to Congress are subject to programmatic EIS requirements, but proposals generated by Congress or the President are not. Moreover, legislative proposals subject to NEPA requirements do not include requests for appropriations. 40 C.F.R. § 1508.17.

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Primary Authority

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Clean Water Act § 101(a)(1), 33 U.S.C.A. § 1251(a)(1)

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I. HISTORY OF WATER POLLUTION CONTROL IN THE UNITED STATES

§ 13:1 In general

This chapter covers the Federal Water Pollution Prevention and Control Act of

1972 (the “Act” or “CWA”).¹ Regulation of water polluting discharges during the first two-thirds of the 20th century was primarily the task of the state governments. The federal role was limited to research and development² and providing financial and technical assistance to the states.³

Although the state water pollution control programs were far from uniform, by 1970 they achieved a degree of similarity. The similarity in state programs was primarily the result of the Federal Water Pollution Control Administration’s (FWPCA) promotion of its preferred scheme for classifying water bodies according to their uses and applying water quality criteria that varied with each classification. Similarly, since the FWPCA administered grants for the construction of municipal sewage treatment facilities, the federal government used the power of the purse to impose a more-or-less uniform sewage treatment technology on the states.

Notwithstanding the FWPCA’s efforts, wide differences in the stringency and enforcement of state water pollution controls persisted, and each time Congress reauthorized the Federal Water Pollution Control grant program after 1960 pleas were made to increase the federal role. One such argument was premised on the ability of industrial polluters to, in effect, blackmail a state into relaxing its standards by threatening to relocate to a state with a more favorable regulatory climate. As a result of such pressures, in the 1965 and 1970 sessions Congress began to increase the federal role, eventually providing for some degree of federal enforcement of the states’ standards, though direct federal enforcement was never a part of the pre-1972 scheme.⁴

There was also the Refuse Act.⁵ Although no doubt aimed at the deposit of material that would interfere with navigation⁶ and largely ignored for sixty years after its passage in 1899, a series of Supreme Court decisions broadened the definition of

[Section 13:1]

¹33 U.S.C.A. §§ 1251 et seq.

²For example, the Lawrence, Massachusetts Experiment Station, maintained by the federal government, was responsible for the development of treatment technologies for municipal sewage. The techniques developed at Lawrence are still widely used today, almost a hundred years after their development. The Lawrence facility is maintained as a national historic site open to the public.

³The Water Quality Act of 1948 established a pattern of state primacy in water pollution regulation and provided for a federal role limited to research and financial aid for the construction of municipal sewage treatment plants. The 1948 legislation was amended in 1956 to provide direct federal subsidization of state water pollution regulatory programs and for broader federal supervision over interstate pollution.

In 1965, Congress again increased the federal presence. Although retaining the basic approach of the 1948 law, the Water Quality Improvement Act of 1965 required states to develop water quality standards applicable to interstate navigable waters, which had to be approved by a new agency, the Federal Water Pollution Control Administration, housed in the United States Department of Health, Education, and Welfare.

During the 1950s and 1960s the Federal Water Pollution Control Administration, a subunit of the U.S. Department of the Interior, administered a program of grants-in-aid for municipalities interested in building sewers and sewage treatment plants. It also developed guidelines for translating stream classifications into individual effluent limitations and provided information on such things as the amount of a pollutant that various species of fish could be exposed to without adverse effects.

⁴Federal enforcement was unchanged in form between 1948 and 1972. The 1948 act created the “abatement conference” procedure. It provided for a series of conferences or negotiations between a polluter and the various government agencies, which could result in a negotiated agreement or a compliance order. Orders were subject to judicial review and were enforceable, if found to be feasible, whether by state or federal officials. After 1965, the FWPCA as an agency with a dedicated mission somewhat heightened the federal government’s level of interest in the process.

⁵33 U.S.C.A. § 403.

⁶Most of the types of “refuse” listed in the statute are of the floating variety.

“refuse” to include such things as oil,⁷ and, ultimately, President Johnson concluded that a permit from the U.S. Army Corps of Engineers (the “Corps”) was necessary prior to any discharge of refuse into navigable waters.⁸

There was a flurry of activity under the Refuse Act by citizen groups in the late 1960s aimed at forcing a direct federal presence in water pollution control. Their efforts produced scant response from the federal bureaucracy. The Corps was decentralized and ill-equipped to take on the momentous administrative task required of it: issuing permits to tens of thousands of dischargers.

§ 13:2 Municipal sewage treatment—The federal Grant-In-Aid program

Beginning in the 1950s, Congress began to provide grant moneys to assist municipalities in the design and construction of sewage treatment and collection systems. The construction grants program, as it came to be called, is the one element of the pre-1972 federal water pollution control scheme that survived the historic 1972 amendments and grew throughout the 1970s into a multibillion-dollar program.

The FWPCA administered the construction grants program prior to 1972 when it was turned over to the newly formed U.S. Environmental Protection Agency (EPA or the “Agency”). It funneled grant money through the state water pollution control agencies, which were required to commit a certain percentage of state and municipal funds. The percentage of federal funding varied over time from as little as thirty percent to as much as eighty percent.

The FWPCA required all municipal projects to be developed in three steps: facilities planning, design, and construction. Each step constituted a separate funding decision. In addition, states were required to parcel out available federal funds based on a set of priorities.¹ The states were not uniform in their priorities, and the most prevalent prioritization scheme was the simplest—first come, first served—in light of other relevant considerations such as size and political influence.

Many municipalities never got beyond the first step. A facilities plan is in effect a scoping document. The consultant hired by the municipality studies its existing sewer system, the local geology and topography, and the user profile and then makes some assumptions about growth over the useful life of a treatment works. The resulting product is a narrative that concludes with a conceptual sewer layout and selection of a type and size of treatment facility. Often following completion of a facilities plan, the municipality would not make it on the priority list for federal funds for the next step: design. The reason was more often than not a refusal on the part of the municipal legislature to commit the local share of design and construction funds required as a prerequisite to federal funds. If enough years elapsed, changes in the municipality, particularly if it was experiencing rapid growth, would necessitate a completely new facilities plan.

The FWPCA required, in addition, that the states exercise at least some level of control over the design of treatment facilities. The degree of state control varied widely. Some states maintained lists of approved consulting engineers and would only provide funds to municipalities that retained an approved engineer. Some, in addition, maintained approved equipment lists. And some state agencies reviewed and approved facilities plans and design plans submitted by the municipalities and

⁷United States v. Standard Oil Co., 384 U.S. 224 (1966).

⁸Exec. Order No. 11288, 31 Fed. Reg. 9261 (1966).

[Section 13:2]

¹The 1965 Act did not mandate how the priorities were to be established.

exercised control over changes in design incurred during construction.²

One outgrowth from the close working relationship between the consulting engineering fraternity and the state water pollution grant managers was a kind of old boy network that made for somewhat less than arm's-length dealing when the same engineers began representing industrial dischargers with compliance problems, and later, under the 1972 amendments, in connection with National Pollutant Discharge Elimination System (NPDES) permit applications. Veterans from the construction grants program frequently rose to the upper managerial ranks in the agencies, whose mission changed drastically after 1972. Many of these engineer-managers, for example, simply did not believe in enforcement or in penalizing dischargers for noncompliance with regulatory requirements. They also often held the view that there should be engineering solutions to all pollution problems and that the absence of an engineered solution for a particular problem rendered the problem not worthy of significant consideration.

§ 13:3 Municipal sewage treatment—Treatment schemes—Primary treatment

Primary treatment of domestic sewage was the principal achievement of the nineteenth century researchers at the Lawrence Experiment Station, in Lawrence, Massachusetts. The basic technology, unchanged to this day, is simple. The sewage is allowed to accumulate in large tanks called digesters, where enteric bacteria feed on the organic matter. Eventually the residual solid material settles out into a sludge, and the supernatant is released to a receiving water body after having been placed into contact with a chlorine compound that kills some pathogens. The sludge is then either disposed of in a landfill, dewatered and incinerated, composted, or barged or piped into the ocean.¹

The advantage of primary treatment for municipalities was that it could be employed by the application of “bricks and mortar” construction techniques. It was relatively cheap to install and required little or no expertise in its operation and maintenance. Its disadvantage is that the material ultimately discharged into the receiving water remains high in organic matter, which consumes oxygen, and retains much of the toxic material and many pathogens contained in the raw sewage.

§ 13:4 Municipal sewage treatment—Treatment schemes—Secondary treatment

Secondary treatment is employed to remove dissolved and suspended organic material from primary treated effluent. There are two methods. Biological treatment utilizes specialized bacteria that digest the organic matter. Physical-chemical treatment utilizes chemical reactions and periodic retention of the wastewater and other engineered techniques to remove additional organic matter. Secondary effluent is not drinkable. It still contains significant amounts of organic matter, toxic compounds, and pathogens, albeit in significantly lower concentrations than are

²State approval of plans generally did not insulate the municipality from liability if the “approved” design failed. For example, the state of New Hampshire successfully disclaimed any responsibility for the failure of a lagoon built for the City of Rochester. *Daddario v. Rochester*, No. 74-0000 (D. N.H.) (unreported).

[Section 13:3]

¹Sludge disposal is a complex and difficult problem about which more will be said later. Ocean dumping of sludge became subject to separate regulatory requirements under the Ocean Dumping Act in 1976. Land disposal of sludge became subject to possible regulation under the Resource Conservation And Recovery Act as hazardous waste in 1984, and sludge incineration was arguably regulatable under the Clean Air Act after its enactment in 1970.

found in primary effluent. It is generally believed that the discharge of secondary effluent will not render a receiving water unswimmable and will not interfere with most aquatic organisms. Secondary treatment produces additional sludge.

By 1972, most municipalities that had installed sewage treatment had not progressed beyond primary treatment.

§ 13:5 Municipal sewage treatment—Treatment schemes—Tertiary treatment (advanced wastewater treatment)

Tertiary treatment, which has come to be called advanced wastewater treatment (AWT), envisions either no discharge of effluent to a receiving water or the discharge of effluent from which essentially all pollutants have been removed. The former is usually achieved by spray-irrigation of forest or range land by which the vegetation takes up the nutrients and organic matter breaks down in the soil. The latter employs very expensive and sophisticated biological and chemical processes to remove nutrients, toxic compounds, and other pollutants. There were virtually no tertiary plants in operation under the pre-1972 regulatory scheme.

§ 13:6 Water quality standards—Stream (use) classifications

The basic approach to water pollution control employed by the states prior to 1972 involved setting ambient water quality standards at levels consistent with the dominant uses assigned to the water body by the state legislature. Although there were variations in the approaches and nomenclature used by the various states, particularly in the number of separate subclassifications employed, virtually all of the states followed the general classification scheme promoted by the Federal Water Pollution Control Administration.

The use classification scheme involved assigning a particular use classification to a water body or, most often, to a stretch of stream or river. The use classifications were Class A (drinking water quality), Class B (fishable and swimmable), Class C (moderately degraded by industrial and municipal waste but still able to support some aquatic life), and Class D (open sewers). Stream classification was usually viewed as a legislative prerogative, and classifications often initially represented the status quo on the water body rather than a goal to be achieved. Goal-oriented classification developed during the late 1950s and the 1960s as sportsmen and other citizen groups began to exert pressure on the state legislatures to improve the quality of badly degraded streams.¹ These efforts did not, however, result in any significant improvement in water quality. Individual industries were effective in some state legislatures in securing downward reclassifications, and in some areas water quality continued to decline throughout the 1960s.

As is discussed in more detail in a later section, the 1972 amendments to the Federal Water Pollution Control Act retained the stream classification scheme as an optional control strategy for states wishing to impose a more stringent degree of effluent reduction than that prescribed under the federal law.

[Section 13:6]

¹An example of one such effort that proved to be successful is the cleanup of the Pemigewasset River in New Hampshire. The “Pemi,” as it is called locally, begins in Franconia Notch in the White Mountains and flows south until it ends at its confluence with the Winnepesaukee River to form the Merrimack. The river had long been polluted by effluents from three municipalities and a large paper mill, and it was originally classified as a combination of Classes C and D. Primarily through the efforts of an activist legislator, Thomas Urie, who lived on the shores of the Pemi, the river was reclassified in 1962 to Class B, and rigid timetables were included for achieving the upgrading. By 1971, the water in the river was generally Class B quality. For an interesting related effort involving the law of nuisance, see *Urie v. Franconia Paper Co.*, 107 N.H. 131 (1966).

§ 13:7 Water quality standards—Water quality standards

Water quality standards are the numerical limits established for individual pollutants that reflect the degree of ambient receiving water degradation considered by the state agency to be consistent with the applicable use classification. In most states at least some of these limits were fixed in the legislation, while most were left to be established by the state water pollution agency by regulation.¹

Most of the state agencies looked for guidance in the establishment of water quality standards to the so-called “Red Book” published by the FWPCA, which the federal agency revised periodically.

The Red Book contained information including suggested dissolved oxygen levels necessary to maintain cold- or warm-water fisheries for Class B purposes and other similar information useful in establishing water quality standards.

§ 13:8 Water quality standards—Pollutant parameters

The states maintained a relatively small number of water quality standards. Rather than address specific pollutants, the use classification scheme addressed general pollutant parameters, some of which related to single pollutants, but most of which related to conditions. The commonly adopted standards involved oil and grease, pH, total suspended solids (TSS), biochemical oxygen demand (BOD₅),¹ coliform (enteric) bacteria, turbidity, phenols, chromium and several other heavy metals, and a number of aesthetic parameters such as odor and color. These parameters worked well in the development of controls for domestic municipal waste and were developed by and large at the Lawrence Experiment Station at the end of the 19th century.

Unfortunately, due both to the crudeness of these parameters and the relative insensitivity of the detection equipment of the day, many pollutants discharged by industrial facilities simply were not regulated under this scheme. Small amounts of very toxic chemicals, for example, were not included in the parameters and thus were not considered in developing the treatment technology needed to meet the water quality standards. In addition, there was never uniformity in water quality standard setting among the states. The FWPCA could not impose the Red Book on the states, and in most states the administrative agency was given rather broad latitude in setting the standards.

It was generally up to the discharger to devise a treatment scheme that resulted in its effluent not causing the water quality in the receiving water to fall below the established water quality standards.

§ 13:9 Water quality standards—Mixing zones

It was generally assumed that it was either unfair or infeasible to require the water quality standards to be met at the end of the discharge pipe. Traditional water pollution engineers felt that “end of the pipe” compliance was fundamentally at odds with an ambient standards scheme. Accordingly, the Red Book envisioned, and most of the states provided, that the water quality standards needed to be met only

[Section 13:7]

¹Mass. Gen. Laws. Ann. ch. 21, § 27 (law); Mass. Admin. Code tit. 314, § 4.00 (water quality standards regulation).

[Section 13:8]

¹Some states utilized separate standards for biological oxygen demand and chemical oxygen demand. The former related to materials, such as organic fertilizers, that stimulated algal growth, which in turn consumed oxygen, while the latter related to chemicals that reacted with other compounds in the water body and, in so doing, consumed oxygen.

at the end point of an established “mixing zone” downstream of a discharger’s outfall. Obviously, the size of the mixing zone allotted to a discharger affected the degree of pollutant reduction required of the facility. The size of the mixing zone was thus the subject of a great deal of bargaining between dischargers and the state agency.

Criticism of mixing zones, echoed by the epithet “dilution is not the solution to pollution,” was premised on the notion that aquatic organisms do not respect mixing zone boundaries, and that there should not be any pockets of severe pollution in any water body, such as occurs near the outfall where mixing zones are used. Moreover, since there is no scientific way to fix the boundaries of a mixing zone, its size and shape is inherently arbitrary, introducing an element of unfettered discretion in the regulatory process. Finally, many water bodies are thermally stratified in a very complex fashion, and the behavior of pollutants in such circumstances is impossible to predict with precision, even when employing sophisticated and costly mathematical or physical models. Monitoring for compliance in such circumstances is also exceedingly expensive and imprecise.

The use of mixing zones was prohibited where technology-based limitations were employed¹ by Congress in the 1972 amendments to the Act, though the concept was partially resurrected by Congress in a 1987 amendment to § 301(h).²

§ 13:10 Waste load allocation

The difficulties inherent in translating an ambient standard into effluent limitations applicable to individual dischargers are compounded where there is more than one discharger putting pollutants into one receiving water body. Obviously, the state agency could not allocate all of the available “use,” in the pollution sense, to a single user. It therefore had the task of allocating the waste load among competing users. In the simple case, where there were only two dischargers of essentially the same amounts of a pollutant who were equally able to reduce their effluent, waste load allocation could be accomplished.

There were, however, few simple cases. Often there were dozens of discharge points within a short stretch of river, the dischargers having differing technical and economic capabilities of pollutant reduction. And, of course, the situation would differ over time, with older dischargers leaving and new dischargers coming onto the receiving water. Some state agencies developed elaborate waste load allocation formulas, which they employed rigidly and inequitably and that were little more than hocus-pocus. A discharger could spend significant sums of money to meet the water quality standards, only to be faced with a request to reduce its load even more to accommodate a new industry. The political difficulties inherent in such a scheme are obvious. Given a choice between placing a sometimes intolerable additional burden on existing dischargers or saying “no” to a new industry and its local economic benefits, the state agencies would be pressured to go along with a third alternative: reclassifying the stream segment to downgrade it. In short, waste load allocation was shown again and again to be impossible.

§ 13:11 Industrial dischargers

Under the pre-1972 scheme, industrial dischargers were subject to the same system of water quality standards developed for and applied to municipal sewage

[Section 13:9]

¹See the discussion in § 13:50.

²EPA continued to allow the mixing zone concept to be employed in connection with optional water-quality-based effluent limitations.

discharges. The problems inherent in stream-impact regulation were magnified with the greater numbers of dischargers on a given stream and as new industries or expanded industrial operations added new amounts of pollutants to the receiving streams.

Questions of how much pollution was permissible within the classification were difficult to answer. Even more difficult was how to allocate the burden of additional pollutant reduction to accommodate increased loads. Pressure to reclassify streams downward became incessant in industrial areas. This pressure often took the form of threats by industries to leave the state unless they received favorable water pollution treatment.

Enforcement of the state standards was erratic and difficult. There was essentially no federal presence.¹ Many states did not have a discharge permit program, and many of those that had permit programs did not impose single-number end-of-pipe effluent limitations on dischargers. Proving a violation of the water pollution law thus often involved repeated upstream and downstream sampling of receiving water, and “live box” tests, in which indigenous fish were placed in cages below an outfall and beyond the mixing zone and observed for mortality and morbidity. Except in the case of visible pollutants, repeated violations were simply too expensive to prove.

§ 13:12 Inadequacies and proposals for reform—In general

Many of the perceived inadequacies of the traditional legal mechanism for water pollution regulation have been pointed out in the prior paragraphs.¹ The FWPCA Act Amendments of 1972, discussed in the following sections, mirrors the complaints about the state of state regulation in the subjects it addresses, and several of its provisions, particularly §§ 302 and 303, reflect the political compromises made to preserve pieces of the old system in the face of a demand for radical change.

The primary difficulties with the water quality standards approach were with the expense and enforcement. Industry groups complained, in addition, that the water quality standards approach produced unfairly disparate regulatory requirements on dischargers based on the degree of political clout wielded by environmentalists interested in a given stream.² The abatement conference enforcement scheme was generally viewed as cumbersome and ineffective.³

On a nationwide scale, moreover, there was evidence that industries were effectively practicing “pollution blackmail” against state legislatures and water pollution agencies and that some states, particularly in the Deep South, were posturing themselves as “pollution havens,” resulting in refusal by the older industrial states to act aggressively to clean up badly polluted streams. State water pollution agen-

[Section 13:11]

¹The 1965 Water Quality Improvement Act provided a mechanism for a state-federal enforcement “conference” among the Administration, the state, and the discharger. These meetings, while theoretically effective vis-à-vis municipalities, which could be threatened with withholding of federal grants, were essentially worthless as a means to leverage industrial dischargers into compliance.

[Section 13:12]

¹A concise reiteration of the politically significant complaints about the prior scheme can be found in S. Rep. No. 414, 92d Cong., 1st Sess. 1-10 (1972).

²Although there are a few notorious examples of such activity, the general pattern of stream classification was for the legislature to preserve the status quo rather than classify for the purpose of upgrading. Most streams bore initial classifications consistent with their present water quality, which reflected current uses. Reclassifications to more stringent levels were rare.

³See S. Rep. No. 414, 92d Cong., 1st Sess. 2 (1972) (report on S.2770, which ultimately became the Federal Water Pollution Control Act Amendments of 1972).

cies frequently used the mixing zone as a device for minimizing the degree of treatment required of a discharger to a water-quality-limited stream.

There were, moreover, a number of interstate streams without an effective method for addressing interstate pollution issues. Federal law provided a means of notification by a discharger's state to a state whose waters the discharge affected, but that device proved ineffective.⁴

Finally, municipal sewage treatment lagged since there was essentially no effective enforcement against municipal dischargers. Although there was a federal grant-in-aid program for publicly owned treatment works (POTW) construction, it was not large enough to provide a significant carrot for large-scale municipal facility construction, and the level of state funding varied widely.

Three major theories for reform had emerged by the late 1960s, each of which required a greater federal presence in water pollution control. These were (1) taxation of water pollution discharges that exceeded a permitted ceiling, similar to the scheme employed by the German government on the Rhine and Ruhr rivers;⁵ (2) development of a federal permit program under the Refuse Act;⁶ and (3) creation of an entirely new regulatory program that would employ technology-based standards, rather than water quality, on a nationwide scale.⁷

§ 13:13 Inadequacies and proposals for reform—The Refuse Act program

Although it was largely eclipsed by Congress's decision to create the technology-based program in the Act, further discussion is required of the Refuse Act. In 1970, the President ordered the Corps to develop a permit program under the Refuse Act,¹ which it was to administer jointly with the newly created U.S. Environmental Protection Agency, which had the authority to veto permits or impose standards based on water quality considerations relevant under the Act (i.e., state water quality standards). The Corps issued regulations in 1971² and began to accept applications for permits authorizing industrial discharges³ into traditionally navigable waters.⁴

The Refuse Act permit program was enjoined in 1971 for noncompliance with the

⁴Federal Water Pollution Control Act of 1965, Pub. L. No. 89-234, § 21(b), 79 Stat. 903. *See, e.g.*, *New Hampshire v. Atomic Energy Comm'n*, 406 F.2d 170 (1st Cir. 1968).

⁵*See* J.H. Dales, *Pollution, Property, and Prices* (1968); Friedman, *Free To Choose* (1980) (articulation of this theory). Such an approach was championed by Senator Proxmire, but rejected by the Congress in 1972. *See* 2 Environmental Policy Division, Congressional Research Service, *A Legislative History of The Water Pollution Control Act Amendments of 1972*, 93d Cong., 1st Sess. 1316-46 (Comm. Print 1973) (Senate Debate on S.2770, Nov. 2, 1971) [hereinafter cited as *Legislative History*].

⁶33 U.S.C.A. § 407. This statute prohibits the discharge of "refuse matter" other than "that flowing from streets and sewers and passing therefrom in a liquid state" into navigable waters or their tributaries, unless pursuant to a permit issued by the Corps. It was enacted as part of the Rivers and Harbors Act of 1899, but was enforced only against obstructions to navigation until it was held in *United States v. Republic Steel Corp.*, 362 U.S. 482 (1960), and *United States v. Standard Oil*, 384 U.S. 224 (1966), that it applied to any industrial waste.

⁷This approach was ultimately adopted in the 1972 CWA.

[Section 13:13]

¹Exec. Order No. 11574, 35 Fed. Reg. 19627 (1970).

²36 Fed. Reg. 6564 (1971) (codified at 33 C.F.R. Part 209).

³Discharges from municipal POTWs were exempt under the "streets and sewers" exemption, although liquid industrial waste flowing in sewers was held, in *Republic Steel*, to be covered. *See also* *United States v. Granite State Packing Co.*, 470 F.2d 303, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20074 (1st Cir. 1972).

⁴The jurisdictional reach of the Rivers and Harbors Act is to navigable waters and their tributaries, within the traditional test of navigability. They are waters that are subject to the ebb and flow of the tides, and/or are presently used, or have been used in the past, or may be susceptible for use to

National Environmental Policy Act of 1969 (NEPA)⁵ and was never thereafter implemented, although Refuse Act enforcement continued sporadically and, under the limited circumstances permitted under the Act, continues today.⁶ Since the statute provides only criminal penalties, which are not substantial in amount, and implied injunctive remedies, it has never played a major role in water pollution regulation.

Experience with the Refuse Act permit program to some extent influenced the course of development of the Act. For example, the eventual shared state-federal permit program established under § 402 of the 1972 Act was influenced by concerns that a straight Refuse Act permit program would involve too much federal presence,⁷ and the Refuse Act was viewed as having a fatal weakness in its nonapplicability to municipal dischargers.⁸

§ 13:14 Inadequacies and proposals for reform—The 1972 Federal Water Pollution Control Act amendments

The choices made by Congress in 1972 were embodied in Pub. L. No. 92-500, which became the Act, 33 U.S.C. § 1251. The Act's framework remains with us today, although the law was amended significantly in 1977 by a comprehensive bill

transport interstate or foreign commerce. *See* *United States v. Appalachian Elec. Power Co.*, 311 U.S. 377 (1940); *Economy Light & Power Co. v. United States*, 256 U.S. 113 (1921); *The Daniel Ball*, 77 U.S. (10 Wall.) 557 (1870); *Minnehaha Creek Watershed Dist. v. Hoffman*, 597 F.2d 617, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20334 (8th Cir. 1979); *United States v. Stoeco Homes*, 498 F.2d 597, 610, 4 Env'tl. L. Rep. (Env'tl. L. Inst.) 20390 (3d Cir. 1974), *cert. denied*, 420 U.S. 927 (1975); *Miami Valley Conservancy Dist. v. Alexander*, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20763 (S.D. Ohio 1981); *United States v. Cameron*, 466 F. Supp. 1099 (M.D. Fla. 1978); *United States v. Sunset Cove, Inc.*, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20370 (D. Or. 1973), *modified and remanded on other grounds*, 514 F.2d 1089, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20409 (9th Cir. 1975).

⁵*Kalur v. Resor*, 335 F. Supp. 1, 1 Env'tl. L. Rep. (Env'tl. L. Inst.) 20637 (D.D.C. 1971) (holding that Corps' regulations violated NEPA by failing to provide for preparation of environmental impact statements in connection with permitting activities).

⁶In *United States v. Pennsylvania Indus. Chem. Co.*, 411 U.S. 655, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20401 (1973), a case often cited for language to the effect that pollution is not a property right, the Court held that enforcement of § 13 is not dependent upon a permit program covering all discharges within the statute's reach and confirmed the availability of § 13 to address nonpoint sources selectively. The Refuse Act may be used to address discharges that are not covered by the Act's regulatory program, such as nonpoint source discharges, and discharges that occurred before the effective date of the 1972 amendments and which left a deposit requiring remediation.

A few Refuse Act cases survived the Federal Water Pollution Control Act amendments in the form of negotiated consent decrees that provided effluent limitations. The status of dischargers vis-à-vis the CWA is an interesting issue that was raised in a litigative context in a citizen suit filed in 1987. *Hudson River Fishermen's Ass'n v. County of Westchester*, No. 87-Civ. 1575 (GLG) (S.D.N.Y. 1987). The county had settled a Refuse Act prosecution in the early 1970s (*United States v. Michaelin*, No. 72-Civ. 1964 (CBM)), involving discharges of garbage and refuse, along with leachate seepage into the Hudson River at the county's landfill. In the consent decree, entered in 1975, the county agreed, *inter alia*, to cease expansion of the landfill and to install a leachate collection system. Twelve years later, the United States moved for contempt alleging various violations of the consent decree, and the fishermen commenced a citizen suit alleging that discharges of mixed stormwater and leachate from a stormwater collection system that did not exist at the time the Refuse Act suit was initiated, but which was constructed at least in part in connection with the settlement of the suit, violated the CWA since the stormwater collection system did not have an NPDES.

⁷2 Environmental Policy Division, Congressional Research Service, A Legislative History of The Water Pollution Control Act Amendments of 1972, 93d Cong., 1st Sess. 1339 (Comm. Print 1973) (Senate Debate on S.2770, Nov. 2, 1971) (Remarks of Sen. Humphrey).

⁸2 Environmental Policy Division, Congressional Research Service, A Legislative History of The Water Pollution Control Act Amendments of 1972, 93d Cong., 1st Sess. 1256 (Comm. Print 1973) (Senate Debate on S.2770, Nov. 2, 1971) (Remarks of Senator Muskie).

known as the Clean Water Act and again in 1987 by the Water Quality Act of 1987.¹

In enacting the CWA, Congress chose to abandon water quality standards as the primary approach to water pollution control and substitute uniform national end-of-the-pipe standards based on technological factors. The standards were to be enforced by a permit program, called the National Pollutant Discharge Elimination System, which would be enforced by the states if their programs met specified minimum requirements or, if not, by the Environmental Protection Agency. States were left to enforce water-quality-based requirements, but only as a more stringent elective overlay on the federal technology-based scheme.

Thus, the Act represented a clear choice among the alternatives in favor of significantly increased command and control of federal regulation of water pollution. The fledgling Refuse Act permit program was explicitly eliminated.² The broad and sweeping new regulatory program was limited, however, in one significant way—it addressed only surface water pollution. Although there was limited discussion of potential groundwater pollution during the debates preceding the enactment of Pub. L. No. 92-500,³ the statute that finally emerged primarily addressed pollution of surface waters.

II. FEDERALISM AND GOALS OF THE ACT

§ 13:15 In general

The Act marked a significant departure in a number of ways from prior federal involvement in water pollution control. Section 101 articulates a number of hortatory “goals” including the ultimate goal that the “discharge of pollutants into the navigable waters will be eliminated by 1985.”¹ The Act represents a fundamental “departure in Federal water pollution control strategy from a water quality standards control mechanism to a discharge control mechanism.”²

Although § 101(b) of the Act recites an intention to maintain state primacy in water pollution control, it in fact represents a significant shift toward federal domination of the activity. Although the states were left to manage the sewage treatment construction grants program, § 303 preserved state water quality standard schemes and § 402 provided for delegation of the federal permit program to the states, the overall thrust of the Act diminishes the state role significantly.

State water quality standards are subject to an increased degree of federal oversight and are relegated to a supporting role in the overall program, taking precedence over federal standards only where they are more stringent. States are not

[Section 13:14]

¹See Pub. L. No. 92-500, 86 Stat. 816 (1972), amended by Pub. L. No. 93-207, 87 Stat. 906, (1973); Pub. L. No. 93-243, 87 Stat. 1069 (1974); Pub. L. No. 93-592, 88 Stat. 1924 (1975); Pub. L. No. 94-238, 90 Stat. 250 (1976); Pub. L. No. 94-558, 90 Stat. 2639 (1976); Pub. L. No. 95-217, 91 Stat. 1566 (1977); Pub. L. No. 95-576, 92 Stat. 2467 (1978); Pub. L. No. 96-478, 94 Stat. 2303 (1980); Pub. L. No. 96-483, 94 Stat. 2360 (1980); Pub. L. No. 97-35, 95 Stat. 764 (1981); Pub. L. No. 97-117, 95 Stat. 1623 (1981); Pub. L. No. 97-164, 96 Stat. 49 (1982); Pub. L. No. 97-357, 96 Stat. 1712 (1982); Pub. L. No. 97-440, 96 Stat. 2289 (1983); affected by Pub. L. No. 97-216, 96 Stat. 180 (1982); Pub. L. No. 97-272, 96 Stat. 1160 (1982); Pub. L. No. 98-45, 97 Stat. 219 (1983); Pub. L. No. 98-371, 98 Stat. 1213 (1984); Pub. L. No. 98-396, 98 Stat. 1369 (1984); Pub. L. No. 99-88, 99 Stat. 293 (1985); Pub. L. No. 100-4, 101 Stat. 7 (1987).

²Section 511(b), 86 Stat. 893 (codified at 33 U.S.C.A. § 1371(b)).

³See, e.g., S. Rep. No. 414, 92d Cong., 1st Sess. 73 (1972).

[Section 13:15]

¹Needless to say, that particular goal was not achieved.

²S. Rep. No. 474, 92d Cong., 1st Sess. 11 (1971). The Act’s principal sponsor, and primary architect, was Senator Edmund Muskie, of Maine.

free to impose their own technology-based effluent limitations, unless they are more stringent than EPA's.³ Essentially, the Act provided a floor of federal standards premised on technological capability, reserving to the states the power to be stricter if they could afford to do so politically.

The Act also affected state and federal agency activities, primarily in the arid West, involving collection of water and the allocation of water to consumers. Some of these effects were foreseen by Congress, and some were incidental. They have been politically controversial.

Section 102(b)(1) prohibits the use of storage and release of water from federal water projects as a substitute for treatment of pollutants at the source. Section 102(b)(3) gave EPA the authority to determine how much water storage could be employed for water pollution control.⁴ Although impoundment discharges are not subject to direct regulation under the Act so long as there is no "addition" of pollutants,⁵ the indirect impact of the basic permit program and § 404, which creates a program for regulating discharges of dredged or fill material,⁶ raised sufficient concern in the West that in 1977 Senator Wallop sponsored an amendment that became § 101(g).⁷

Section 101(g) expresses the intention of Congress that the Act not "supersede or abrogate" or "otherwise impair" the rights of states to allocate water within their jurisdictions, and that the Act should not "supersede or abrogate" rights to quantities of water allocated by a state. The section was construed by the Tenth Circuit Court of Appeals in *Riverside Irrigation District v. Andrews*.⁸ There the court was faced with arguments that a water project in Colorado should not be required to secure a permit under § 404 of the Act because the permit process and requirements of the regulations would adversely affect the project. The court rejected these arguments and stated that to the extent § 101(g) was inconsistent with the specific substantive provisions of the statute, the latter would govern. The court stated that a "fair reading of the statute as a whole makes clear that, where both the state's interest in allocating water and the federal government's interest in protecting the environment are implicated, Congress intended an accommodation. Such accommodations are best reached in the individual permit process."⁹

What has not yet been determined by the courts is what the substance of such an "accommodation" would be if the parties to the permit process could not agree on the matter. The ultimate question—in the event of an irreconcilable conflict between preserving environmental values and building a water project, which must legally prevail—has not been answered.

³See *American Petroleum Inst. v. EPA*, 540 F.2d 1023, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20748 (10th Cir. 1976) (pointing out tension between the national goals contained in § 101(a) and the language of § 101(b)).

⁴See *Cape Henry Bird Club v. Laird*, 484 F.2d 453, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20786 (4th Cir. 1974) (discussing section generally).

⁵*Nat'l Wildlife Fed'n v. Gorsuch*, 693 F.2d 156, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20015 (D.C. Cir. 1982), *rev'g* 530 F. Supp. 1291, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20268 (D.D.C. 1982). But see *Catskill Mountains Chapter of Trout Unlimited v. City of New York*, 273 F.3d 481, 490 (2d Cir. 2001) (following *United States v. Mead*, 533 U.S. 218, 121 S. Ct. 2164, 150 L. Ed. 2d 292 (2001), and refusing to defer to EPA's informal dam discharge interpretation and finding a regulated discharges).

⁶See generally § 13:93.

⁷Pub. L. No. 95-217, § 5(a), 91 Stat. 1566 (1977).

⁸*Riverside Irrigation Dist. v. Andrews*, 758 F.2d 508, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20333 (10th Cir. 1985).

⁹The plaintiff, a local sponsor of the water project, probably initiated the litigation because downstream of the project was a habitat of the whooping crane, an endangered species, which the U.S. Fish and Wildlife Service had already opined would be adversely affected if the proposed dam were built.

III. PUBLIC PARTICIPATION

§ 13:16 In general

The Act significantly broadened the degree to which members of the public are provided opportunity to influence the decision-making of EPA and, to a somewhat lesser degree, states that have been delegated enforcement authority. The most significant is the citizen suit provision, discussed in a later section of this chapter.

§ 13:17 Public participation in EPA decision-making

Formal public participation can take place at two points in EPA's implementation of the Act. The Agency's general rulemaking activities, by which it develops, among other things, effluent guidelines and promulgates water quality standards, must be undertaken by means of informal rulemaking, in which public notice is provided and comments are solicited.¹ Section 509(b)'s grant of authority for judicial review of EPA rulemaking actions in the courts of appeals is broad and freely available to "any interested person."²

EPA's permit issuance actions under § 402, in states where the Agency issues permits, must include "opportunity for public hearing."³ The Seventh Circuit Court of Appeals in *United States Steel Corporation v. Train*⁴ held that requirement means an adjudicatory, trial-type hearing where requested.⁵ EPA has promulgated regulations⁶ that establish procedural prerequisites for adjudicatory hearings and provide that certain types of issues are not appropriate for adjudication. EPA's flexible approach to its NPDES adjudicatory hearings was upheld in *Seacoast Anti-Pollution League v. Costle*.⁷ Moreover, the Agency is not obligated to hold an adjudicatory hearing in the absence of a legitimate request for one.⁸

Citizen suits, to compel EPA to take nondiscretionary action or to enforce the

[Section 13:17]

¹Public participation in EPA's Title II activities is very limited, as it is under most federal grant-in-aid programs. However, since NEPA applies to EPA's wastewater treatment grants program, see CWA § 511(c), 33 U.S.C.A. § 1371(c), the public participation afforded by that statute makes up for any lack thereof under Title II. Public participation in decision-making under CWA § 311, 33 U.S.C.A. § 1321, which provides for the expenditure of funds for cleaning up oil spills, is virtually nonexistent.

²In practice, the courts have limited judicial review because issues not raised first before the agency are not litigable for the first time in the courts. In addition, the Supreme Court recently held that judicial review in the court of appeals is limited to EPA actions that are explicitly enumerated in Section 509(b). *National Ass'n of Mfrs. v. Department of Defense*, 138 S. Ct. 617, 199 L. Ed. 2d 501, 85 Env't. Rep. Cas. (BNA) 2155, 2018 A.M.C. 29 (2018).

³CWA § 402(a), 33 U.S.C.A. § 1342(a).

⁴*United States Steel Corp. v. Train*, 556 F.2d 822, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20419 (7th Cir. 1977).

⁵*See* *Marathon Oil Co. v. EPA*, 564 F.2d 1253 (9th Cir. 1977); *see also* *Seacoast Anti-Pollution League v. Costle*, 572 F.2d 872, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20207 (1st Cir. 1977), *cert. denied*, 439 U.S. 824 (1978). *Compare* *Seacoast Anti-Pollution League v. Costle*, 572 F.2d 872, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20207 (1st Cir. 1977) *with* *Buttrey v. United States*, 690 F.2d 1170, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20124 (5th Cir. 1982) (construing identical language in § 404 to require only informal hearings by the Corps, relying almost exclusively on a single statement in the legislative history by Senator Muskie) *and* *Dominion Energy Brayton Point, LLC v. Johnson*, 443 F.3d 12 (1st Cir. 2006) (relying on *Chevron*, U.S.A., Inc. v. Nat. Res. Def. Council, Inc., 467 U.S. 837, 104 S. Ct. 2778, 81 L. Ed. 2d 694, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20507 (1984), to interpret post-*Seacoast* EPA regulations and finding no nondiscretionary duty to convene an evidentiary hearing).

⁶40 C.F.R. Part 124.

⁷*Seacoast Anti-Pollution League v. Costle*, 572 F.2d 872, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20207 (1st Cir. 1977), *cert. denied*, 439 U.S. 824 (1978).

⁸*See, e.g.*, 40 C.F.R. § 124.19.

statute's regulatory requirements against private parties, are discussed in a separate section of this chapter. The citizen suit provision, § 505, allows members of the public to intervene in EPA enforcement actions.⁹

§ 13:18 Public participation in delegated state programs

States may be involved in three classes of regulatory activities under the Act. They may issue water quality standards and water-quality-based effluent limitations; they may be delegated the NPDES permit program and thus enforcement authority under the statute; and they are empowered under § 401 to “certify” that federally licensed activities and other federal activities are in compliance with their environmental laws. Each of these classes of activities provides opportunity for public participation, but the degree and nature of that participation is not as clearly specified as it is for EPA actions. Further, it has not always been clear that public participation in state proceedings was compelled in each case. EPA maintains separate regulations that set forth minimum public participation procedures for CWA-related activities.¹

The Agency's regulations implementing its supervisory authority under § 303 over state water quality standards require that states hold public hearings in connection with review of water quality standards “in accordance with state law, EPA's water quality management regulation² and [40 CFR Part 25].”³ Part 25 identifies procedures and goals for state agencies to pursue in their own public procedures. Essentially, the scope of public participation in water quality standard setting is defined by state law. EPA does not hold hearings on its approval of water quality standards, and it does not provide opportunity for prior notice and comment on its approvals.⁴

The Act provides significantly more direct guidance for public participation in state permit issuance proceedings. Section 402(b)(3) requires, as a condition of delegation of NPDES authority, that the delegate state ensure adequate public notice and provide opportunity for a public hearing before ruling on a permit application.⁵ EPA's state permit program regulations require that states provide for public hearings,⁶ although they do not require states to hold adjudicatory hearings.⁷ Echoing the Supreme Court's statement that the Act's “opportunity for public hearing” requirement is “rather amorphous,”⁸ it would appear that EPA's regulations al-

⁹The Department of Justice provides formal notice-and-comment opportunity with respect to all consent decrees proposed to be entered in CWA and other EPA litigation. *See* 28 C.F.R. § 50.7.

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¹40 C.F.R. Part 25; *see also* Alan Levin, EPA, Guidance for Implementation of 40 CFR Part 25 Public Participation Regulations in State Public Water System Supervision Program, http://www.epa.gov/safewater/wsg/wsg_16.pdf.

²40 C.F.R. § 130.3(b)(6) is specifically mentioned. That provision was repealed in 1985.

³40 C.F.R. § 131.20(b). The reference to the water quality management regulation is no longer apposite. EPA amended Part 130 on January 11, 1985, 50 Fed. Reg. 1779 (1985), and the amended regulation deletes the referenced provision.

⁴*See* 40 C.F.R. § 131.21(d).

⁵Identical language is found in FWPCA § 404(h), 33 U.S.C.A. § 1344(h), relating to delegation of the § 404 dredge and fill permit program.

⁶*See* 40 C.F.R. § 123.25(a)(28) to (30).

⁷The regulations only cross-reference the informal notice and hearing provisions of the EPA decision-making procedures regulations, 40 C.F.R. § 124.12(a), as mandatory for states.

⁸*Costle v. Pacific Legal Found.*, 445 U.S. 198, 218, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20225, 20230 (1980).

low states to avoid complete equivalency with the federal program.⁹

The question of how similar state and federal public participation provisions must be was raised and discussed, but not fully resolved, in *Citizens for a Better Environment (CBE) v. EPA*.¹⁰ The plaintiff challenged EPA's original state program regulations for their failure to provide mandatory guidance for public involvement in enforcement of state water pollution permits and requirements. CBE unsuccessfully sought a judgment that EPA must, in order to satisfy the requirements of §§ 101(e) and 402(a)(3) and the Act's general policies as reflected in the legislative history, mandate state-level citizen suit provisions substantially similar to § 505.¹¹ Although the Seventh Circuit struck down EPA's approval of the Illinois NPDES program because the court considered EPA's criteria for judging public participation in state enforcement to be inadequate,¹² the court did not go so far as to mandate equivalency.¹³

The issue was addressed again in *Natural Resources Defense Council, Inc. v. EPA*.¹⁴ The District of Columbia Circuit found that the Act does not require state-level citizen suits and that EPA's decision not to condition state program approval on their availability was a reasonable exercise of discretion. The court also addressed the issue of whether the present regulations are otherwise capable of producing meaningful public involvement in state permit decision-making. It found adequate the requirement that states either allow intervention as of right in enforcement proceedings or agree not to oppose intervention "by any citizen when permissive intervention may be authorized by statute, rule, or regulation."¹⁵

IV. TITLE II—GRANTS-IN-AID

§ 13:19 Sewage treatment Grant-In-Aid program—Historical background and general approach

Section 201(a) of the Act states that the purpose of Title II is "to require and to assist the development and implementation of waste treatment plans and management practices that will achieve the goals of" the law. The basic commanding authority is provided by § 201(g), which authorizes EPA "to make grants to any State, municipality, or intermunicipal or interstate agency for the construction of publicly

⁹*Cf.* *Buttrey v. United States*, 690 F.2d 1170, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20124 (5th Cir. 1982) ("it is very possible 'for a term to have different meanings even in the same statute'") (citing *Environmental Defense Fund, Inc. v. Costle*, 631 F.2d 922, 927, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20585, 20587 (D.C. Cir. 1980)). See *Akiak Native Community v. U.S. E.P.A.*, 625 F.3d 1162, 72 Env't. Rep. Cas. (BNA) 1181 (9th Cir. 2010) (finding that, while Alaska's proposed program does not include same judicial review opportunities as available for federally-issued permits, it provides for meaningful public participation in permitting process, as required under 40 C.F.R. § 123.30).

¹⁰*Citizens for a Better Env't (CBE) v. EPA*, 596 F.2d 720, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20092 (7th Cir. 1979), supplemented 13 Env 1094 (7th Cir. 1979).

¹¹See *Citizens for a Better Env't (CBE) v. EPA*, 596 F.2d 720, 725, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20092, 20094 n.8 (7th Cir. 1979), supplemented 13 Env 1094 (7th Cir. 1979).

¹²*Citizens for a Better Env't (CBE) v. EPA*, 13 Env 1094 (7th Cir. 1979) (denying rehearing of opinion on the merits).

¹³See *Citizens for a Better Env't (CBE) v. EPA*, 596 F.2d 720, 725 n.8, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20092, 20094 n.8 (7th Cir. 1979), supplemented 12 Env 1094 (7th Cir. 1979).

¹⁴*Nat. Res. Def. Council, Inc. v. EPA*, 859 F.2d 156, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20016 (D.C. Cir. 1988).

¹⁵40 C.F.R. § 123.27(d). In reaching this conclusion, the court relied heavily on EPA's representation at oral argument that the second option is not available in states that do not provide some means of intervention. To a lesser degree, the court also relied on the Agency's interpretation of the first option as requiring that the state's rules for intervention as of right be similar to those of the Federal Rules of Civil Procedure. *Nat. Res. Def. Council, Inc. v. EPA*, 859 F.2d 156, 177–78, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20016, 20025 (D.C. Cir. 1988).

owned treatment works.”¹

Congress effectively terminated the construction grants program as of 1990 as a significant component of the 1987 reauthorization package² and provided as a replacement startup funds for a revolving loan program for states to use between 1989 and 1994.³ The following text in this section and in §§ 13:20 to 13:25 addresses the construction grant program as it existed up to 1990.

Federal financial assistance for the construction of municipal sewers and sewage treatment works preceded the 1972 Act by many years. In fact, the primary function of the FWPCA prior to Pub. L. No. 92-500 was administration of federal moneys funneled through the state governments to municipalities.

The FWPCA established the framework for the construction grants process that continues to the present. Essentially, moneys are provided to the states from appropriation allotments made by Congress biennially on the basis of formulae that take into account statutory factors⁴ and the states’ “needs” that are determined by “needs surveys” taken by the administering federal agency.⁵

It is important to understand the three-step process by which federal grants for municipal collection and treatment facilities historically were awarded and the respective roles played by the municipality, its consulting engineers, the state water pollution agency, and EPA, as the successor to the old Act in administering the construction grants program.⁶ Although nothing in the original Federal Water Pol-

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¹CWA § 212(2), 33 U.S.C.A. § 1292(2), defines “treatment works” broadly to include sewers, pumping stations, stormwater management systems, land acquisition and management, and a number of other systems, essentially intending to cover any and all activities reasonably required in the management of liquid waste generated in a community. *See* *Bosco v. Beck*, 475 F. Supp. 1029, 1031 (D.N.J. 1979), *aff’d without opinion*, 614 F.2d 769 (3d Cir. 1979), *cert. denied*, 449 U.S. 822 (1980).

The CWA has almost uniformly provided a ceiling on the federal contribution of seventy-five percent of the construction costs. Amounts annually available for obligation were initially in the \$1 billion to \$2 billion range, increasing to a high of \$9 billion in 1978. The average available has been in the \$4 billion range, with dramatic decreases since 1982. There was substantial litigation between 1972 and 1975 over the question of whether the EPA could refuse to allot the full amount of sums appropriated by Congress for Title II, culminating in *Train v. City of New York*, 420 U.S. 35, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20162 (1975) and *Train v. Campaign Clean Water*, 420 U.S. 136, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20166 (1975), in which the Supreme Court determined that the Agency must make available all sums appropriated under § 207. In the Municipal Wastewater Treatment Construction Grant Amendments of 1981, Pub. L. No. 97-117, 95 Stat. 1623, Congress reduced the federal share for entirely new projects to fifty-five percent, grandfathering projects already in the three-step pipeline by October 1, 1984, at the seventy-five percent rate.

A 1978 amendment to § 201 authorized federal funding of small *privately* owned systems. Subsection (h) authorizes federal funding of small privately owned systems in areas that cannot be cost-effectively served by publicly owned systems.

²Pub. L. No. 100-4, § 202, 101 Stat. 15-16.

³FWPCA §§ 601 to 607, 33 U.S.C.A. §§ 1381 to 1387, added by Pub. L. No. 100-4, tit. VI, 101 Stat. 22-28 (1987). *See* 53 Fed. Reg. 27564 (1988).

⁴*See* FWPCA § 205(c), 33 U.S.C.A. § 1285(c).

⁵The allocation formulae, which are under current law derived from CWA § 205(a), 33 U.S.C.A. § 1285(a), or specific yearly appropriation acts, have been more or less the same for over thirty years.

⁶EPA administers the program in the construction grants unit of the water program, under the Assistant Administrator for Water, although primary day-to-day responsibility lies with the regional offices. Its policy has always been to delegate administration of the construction grants program to the states to the maximum extent possible. *See* 40 C.F.R. § 35.2000. Most state water pollution agencies (or water pollution units of the environmental protection agency) maintain a similar structure. EPA’s construction grant regulations, which control its current program, are found at 40 C.F.R. Part 35, subparts E and I. *See* 47 Fed. Reg. 20455 (1982); 49 Fed. Reg. 6234 (1984).

lution Control Act specifically referenced a discrete three-step development process,⁷ EPA engrafted such a scheme in its initial subpart E regulations shortly after the 1972 Act was enacted and it has subsequently remained a fixture of the program. Congress has, at least implicitly, engrafted it into the law.⁸

A municipality, except for those qualifying after February 4, 1987 for a “design/build” project,⁹ wishing to receive federal assistance is required to develop what is called a “facilities plan” as Step 1 of the three-step grant process. Ordinarily this means that it retains a consulting engineering firm to survey the municipality’s current and future¹⁰ sewage loads and develop preliminary approaches to siting and design of interceptor sewers¹¹ and to building (or, as the case may be, upgrading) a POTW. A Step 2 grant application involves seeking money for the design of the system chosen from among those outlined in the facilities plan, and again involves selection of an engineering consultant¹² whose task it will be to design the facility, prepare the plans, specifications, and cost estimates that will form the basis for awarding Step 3 construction funds.¹³

It was not uncommon for a municipality to undertake two or more separate facilities plans and never get to construction. In addition, it was typical for an entire major project to be broken up into discrete parts and proceed in piecemeal fashion, with some segments in construction while others were still at the facilities planning stage. Thus, it was theoretically possible that new sewers built with CWA funds could be completed and have to discharge untreated sewage because the end-of-pipe POTW was not yet built. In 1981, Congress amended § 201 to prohibit the award of Step 1 and Step 2 grants alone, essentially forcing municipalities and states to fund preliminary planning and engineering work with local and state funds and to seek reimbursement when Step 3 funds are applied for.¹⁴

Eligibility of individual projects for funds is determined each year by reference to

⁷EPA’s authority to review POTW projects is contained in § 203 of the FWPCA, 33 U.S.C.A. § 1283. Section 212(1) defined “construction” to include planning and design components. 33 U.S.C.A. § 1292(1).

⁸A 1981 amendment made specific reference to the three-step process. *See* CWA § 201(1), 33 U.S.C.A. § 1281(1). The reference was occasioned by criticism of the process, and the insertion of a requirement that EPA could no longer separately fund *only* step 1 or step 2 projects. *See* H.R. Rep. No. 270, 97th Cong., 1st. Sess. 4-5 (1981), *reprinted in* United States Code Congressional and Administrative News pp. 2629, 2632-33.

⁹Section 203(f), 33 U.S.C.A. § 1283(f) (added by Pub. L. No. 100-4, § 204, 101 Stat. 17 (1987)) reauthorized the use of a one-step “design/build” approach for POTW projects that had been inserted in 1981 initially on a very limited basis, increasing the eligibility to projects involving less than \$8 million in costs and employing aerated lagoon, trickling filter, stabilization pond, land application, sand filter, or subsurface disposal technology, subject to several other conditions listed in the legislation. The provision is intended to expedite construction of comparatively small, passive systems.

¹⁰The extent to which POTWs must, or may, be designed to accommodate future growth (“reserve capacity”) has been a matter of constant dispute among water pollution policy makers. This matter is discussed in § 13:19.

¹¹Interceptor sewers are the mains that collect sewage from the neighborhood pipes that are called “collector sewers.” From time to time collector sewers have and have not been eligible for federal funding under Title II.

¹²In practice, most municipalities develop long-term relationships with an engineering firms, which prepare the grant-related documents.

¹³In *City of New Haven v. Train*, 424 F. Supp. 648, 7 Env’tl. L. Rep. (Env’tl. L. Inst. 20110 (D. Conn. 1976)), the court explored the relationship between CWA § 303(e), 33 U.S.C.A. § 1313(e), which requires states to submit water quality management plans to EPA for approval, and EPA’s authority to review the plans for specific POTW projects. The court held that mere approval of a § 303(e) plan that incorporates a project does not eliminate EPA’s obligation to review the project for, *inter alia*, its cost-effectiveness under CWA § 203, 33 U.S.C.A. § 1283.

¹⁴CWA § 201(l), 33 U.S.C.A. § 1281(l).

a state priority list.¹⁵ As in the case of the three-step process, the priority list concept was a holdover from pre-1972 practice that came to EPA along with the staff of the old FWPCA when EPA was created.¹⁶ The 1972 Act did not specifically refer to the priority list concept. In 1977, Congress added § 216 to the Act, specifically leaving priority determination to the states, but setting categories within which priorities must be determined¹⁷ and requiring that at least twenty-five percent of the funds allocated to each state each year be obligated for categories of projects other than sewage treatment works.¹⁸ In 1981, partly to account for the negative impacts of reduced budgetary allocations for the program, Congress reversed field somewhat¹⁹ and eliminated collector sewers from priority consideration.²⁰ It also amended § 216 to express a policy that state priority lists reflect projects that are designed to achieve “optimum water quality management, consistent with the public health and water quality goals and requirements” of the Act.²¹ A 1987 amendment to § 203(a) requires a written agreement between EPA and a grant applicant prior to approval of plans, specifications, and estimates, which specifies what elements of the project are eligible for federal payments and provides that EPA is bound by its agreement.

The legislative history of the funding priorities under Title II reflects a tension, often present in federal “pork barrel” legislation, between pressure from the federal regulatory establishment to funnel moneys into activities perceived at the time to be in the overall public interest and pressure from the recipient interests for a structure that maximizes the usefulness of the “pork” to them. The seesaw treatment of collector sewers is illustrative. EPA has never favored spending federal funds for construction of new collector sewers, favoring instead the construction of new and upgraded treatment works and the elimination of combined sewers and groundwater infiltration into sanitary sewers. Local interests, on the other hand, have lobbied incessantly for inclusion of collector sewers in the construction grants program, primarily because new sewers are often tied to new real estate development, which produces positive tax benefits. Since 1972, Congress has at one time or another placed collector sewers in the program, taken them out, given them a mandatory

¹⁵EPA is not bound to accept a state’s priorities. *See Atlantic City Mun. Utils. Auth. v. Regional Adm’r*, 803 F.2d 96, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20106 (3d Cir. 1986) (overruling 616 F. Supp. 722, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20152 (D.N.J. 1985) on the question of jurisdiction, but agreeing that, on the merits, EPA properly refused to accept New Jersey’s priority ranking for ACMUA’s project, the nature of which was inconsistent with EPA’s grant policy).

¹⁶*See* 40 C.F.R. §§ 35.915, 35.2015.

¹⁷These categories are (A) secondary treatment, (B) more stringent treatment, (C) infiltration-inflow correction, (D) major sewer system rehabilitation, (E) new collector sewers and appurtenances, (F) new interceptors and appurtenances, and (G) correction of combined storm and sanitary sewer overflows.

¹⁸This requirement legislatively overruled a policy decision made by EPA in the mid-1970s that treatment capacity take precedence over sewer work, even if that meant exhausting all funds available for treatment facilities.

¹⁹*See generally* H.R. Rep. No. 408, 97th Cong. 1st Sess. (1981), *reprinted in* United States Code Congressional and Administrative News p 2629.

²⁰CWA § 201(g)(1), 33 U.S.C.A. § 1281(g)(1).

²¹The conferees rejected a more stringent Senate provision that would have *required* the state priority lists to list projects in order of precedence reflecting significant public health and water quality benefits. EPA’s implementing regulations, 40 C.F.R. § 35.2015(b), seem to reflect more the spirit of the rejected Senate language, stating that the state priority list “should give high priority to projects in priority water quality areas,” although the directive is far from mandatory. EPA favored the Senate language because of its desire to channel construction grant funds primarily to heavily polluted urban areas. *See* H.R. Rep. No. 270, 97th Cong., 1st Sess. 26 (1981), *reprinted in* United States Code Congressional and Administrative News pp. 2629, 2653-54.

piece of the pork pie, and taken it away again.²²

The statute reflects a number of other sometimes-conflicting policy demands both in its language and in its shifting priorities over time. For example, § 201(b) requires that waste treatment management plans and practices “provide for the application of the best practicable waste treatment technology before any discharge into receiving waters²³ . . . and shall provide for consideration of advanced waste treatment techniques.” The latter phrase raises an interesting question of the priorities, if any, to be accorded to AWT facilities. Many communities, particularly in rural, recreational areas, induced their legislatures in the 1970s to reclassify receiving streams to Class A, and applied for grants to fund AWT facilities for those streams. Competition between those communities and more heavily industrial communities seeking to upgrade primary facilities on heavily polluted streams became a political²⁴ and, at one point, a legal, issue²⁵ with EPA caught in the middle.

Sections 201(c) to (f) contain language exhorting EPA to encourage areawide wastewater management,²⁶ recycling and reuse of wastewater, environmentally responsible sludge disposal,²⁷ integrated sewage and industrial waste treatment facilities that are revenue-producing,²⁸ and wastewater management options that incorporate “open space” and recreational considerations.²⁹ As part of the 1977

²²Section 211, for example, authorizes grants to be made only to repair or replace existing collector sewers, or to build new collector sewers in communities “with sufficient existing or planned capacity adequately to treat such collected sewage.” 33 U.S.C.A. § 1291.

Moneys have, however, not always been allotted under the priority scheme, as discussed in the text, and Congress began to criticize what was viewed as rampant overbuilding of reserve capacity by the late 1970s. Section 10 of Pub. L. No. 97-117 limited federally funded reserve capacity of POTWs receiving initial Step 3 grants after October 1, 1984, to needs existing on the date of the award, and “in no event shall reserve capacity of a facility and its related interceptors . . . be in excess of existing needs on October 1, 1990.” Section 2(a) of Pub. L. No. 97-117 amended § 201(g)(1) of the Act, 33 U.S.C.A. § 1281(g)(1), to effectively eliminate funding of collector sewers after 1984.

²³This requirement relates to the § 201(g)(2)(A) requirement, made mandatory by CWA § 202(b)(2)(B), 33 U.S.C.A. § 1282(b)(2)(B), for POTWs after 1983, that alternative waste management techniques be employed to secure a level of pollutant removal that is better than that which can be obtained using secondary treatment. It should not be confused with the “best practicable treatment” requirement applicable to industrial direct dischargers by July 1, 1977. The reference to “before discharge” is aimed at preventing in-stream monitoring and taking advantage of dilution and the use of mixing zones, approaches in common use by the states prior to 1972 and rejected by the Act.

²⁴See H.R. Rep. No. 1255, 95th Cong., 2d Sess. 31 (1978); S. Rep. No. 1060, 95th Cong., 2d Sess. 38 (1978); H.R. Rep. No. 1569, 95th Cong., 2d Sess. 8 (1978). All reports complained about EPA’s failure to scrutinize the cost-effectiveness of AWT projects funded under Title II in the past.

²⁵The legal issue was somewhat tangential. EPA, at the behest of the House Appropriations Committee, undertook cost-effectiveness reviews of AWT grant applications after 1978. Several states challenged EPA’s actions. *People of the State of Illinois v. Costle* (D.D.C.) (unreported) was settled, with a consent decree essentially exempting a number of Illinois projects from cost-effectiveness review. California argued unsuccessfully in *California v. EPA*, 689 F.2d 217, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 21055 (D.C. Cir. 1982) that rigorous cost-effectiveness review violated limitations placed on EPA’s ability to reject funding of projects put on state priority lists to those that do not meet the enforceable requirements of the Act. The court reasoned that EPA’s action was adequately supported by the broad general policies of Title II and congressional intent engrafted onto budget acts.

²⁶CWA § 201(c), 33 U.S.C.A. § 1281(c). See also § 13:26.

²⁷CWA § 201(d), 33 U.S.C.A. § 1281(d). Section 405 of the Act and Subtitle C of the Resource Conservation and Recovery Act (RCRA) provide bases for substantive regulation of sludge disposal. POTW sludge in heavily industrial communities is a hazardous waste.

²⁸Related to this is the hotly debated issue of industrial cost recovery (ICR), discussed in more detail below.

²⁹CWA § 201(f), 33 U.S.C.A. § 1281(f). Other than funding a few spray irrigation systems associated with ski areas, EPA appears to have done little with this provision.

amendments to the Federal Water Pollution Control Act,³⁰ Congress inserted a specific requirement that municipalities seeking treatment works construction grants affirmatively demonstrate that they have fully studied “innovative and alternative” treatment techniques, such as land disposal and recycling, that minimize pollutant discharge and migration.³¹

§ 13:20 Sewage treatment Grant-In-Aid program—Relationship between the construction grants program and title III compliance

There are two major issues involving the relationship between the construction grants program and the substantive enforceable compliance obligations imposed upon municipalities by § 301(b) of the Act. One of these issues, whether compliance with the effluent reduction requirements is conditional upon the availability of federal grant funds, has both been litigated and the subject of congressional debate and action. The second, largely untested primarily because of the small amount of municipal enforcement undertaken by EPA, involves the legal significance of EPA (or delegated state) approval of plans for a facility that fails to achieve the statutorily mandated degree of effluent reduction.

In *State Water Control Board v. Train*,¹ the court rejected state-proffered arguments that compliance with the 1977 secondary treatment deadline should be contingent upon the availability of federal grant funds totaling 75 percent of the project cost, and deferred for a reasonable time following receipt of the funds.² Although EPA remained reluctant to move aggressively to enforce the Act’s deadlines against many municipalities, it did take enforcement action against a few major, chronic violators of the Act. The Agency consistently refused to tie consent decree compliance to the availability of grant funds.

Pressure on Congress to alleviate the compliance burden on municipalities in light of decreasing appropriations for Title II after 1982 resulted in further slippage of the secondary treatment compliance date to 1988.³ In 1981, Congress also inserted a curious provision into the law suggesting that “judicial notice” be taken of the 1981 amendments to Title II, “including reduced authorization levels,” and that the “parties to Federal consent decrees” containing compliance schedules for POTW construction “reexamine the provisions of such consent decrees and, where required by equity,” make “appropriate adjustments in such provisions.”⁴ This was a compromise between language proffered by municipal interests, who sought a clear legislative overruling of a state water control board, and EPA and the Justice Department, who wanted no action at all.

The second type of case seems to be more difficult. Let us say that a POTW built with federal funds fails to operate adequately to meet the effluent limitations in the

³⁰Pub. L. No. 95-217, 91 Stat. 1566 (codified at 33 U.S.C.A. §§ 1251 to 1376) (known as the Clean Water Act).

³¹CWA § 201(g)(5), 33 U.S.C.A. § 1281(g)(5). A further amendment, in 1981, increased the federal share for innovative and alternative technologies from 75 percent to 85 percent, and required each state to set aside between 4 percent and 7.5 percent of each year’s allotment for innovative and alternative treatment projects.

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¹*State Water Control Board v. Train*, 424 F. Supp. 146, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20243 (E.D. Va. 1976), *aff’d*, 559 F.2d 921, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20571 (4th Cir. 1977).

²The district court did opine that the absence of grant funds might give rise to an equitable defense in an enforcement action.

³CWA § 301(i), 33 U.S.C.A. § 1311(i), as amended by the Municipal Wastewater Construction Grant Amendments of 1981, Pub. L. No. 97-117, § 21(a), 95 Stat. 1623.

⁴Pub. L. No. 97-117, § 26, 95 Stat. 1623.

municipality's NPDES permit, and in response to an enforcement action, the municipality argues that EPA, which approved the plans and specifications for the plant, is estopped from demanding more from the municipality. Although EPA conditions its review on a disclaimer that its approval of the plans does not warrant that the facility will be adequate for Title III purposes, an equitable argument along these lines as a defense to an enforcement action is not without appeal. The one⁵ reported case involving this issue was decided in favor of EPA, however.⁶

§ 13:21 Sewage treatment Grant-In-Aid program—Limitations and conditions—Limitations

The primary determiners of eligibility for construction grants are the § 212 definitions of “construction” and “treatment works,”¹ and the priority system employed by EPA and the states. These entry-level criteria are augmented by a number of secondary eligibility criteria, most of which are set forth in §§ 201(g) and 204.

The § 201(g) conditions include a requirement, which has been a part of the law since 1972, that the sewer system of the applicant municipality not be subject to “excessive infiltration.” This limitation, which held up many projects during the 1970s while communities did infiltration and inflow studies of their sewer systems, is intended to ensure that a minimum of excess water enters the system increasing the capacity (size) of the treatment works required to handle the flow.² Section 201(g) also contains provisions requiring analysis of recycling and other alternatives to end-of-the-pipe-and-discharge treatment, reflecting the Act's overall effluent reduction goals as set forth in § 101.³

Section 204(a) imposes additional eligibility requirements. Applicant projects must have been identified in a § 208 areawide waste treatment management plan,⁴ be in conformity with the state's § 303(e) plan,⁵ be included on the state's priority

⁵The paucity of cases on this point may be explained by two factors: the relative paucity of municipal enforcement and EPA's tendency in such circumstances to simply award further grant funds to correct the problem, a practice that may be characterized as “throwing good money after bad.” The closest EPA ever came to seeking reimbursement from a municipality involved the City of Niagara Falls, which spent \$40 million in federal funds to build a POTW, one portion of which, because of foundation problems, literally collapsed the day it was turned on. Ultimately, the Agency conditioned a further grant on a promise by the city to investigate the matter and seek legal recourse against the responsible parties.

⁶*Garland v. Zurn Indus., Inc.*, 870 F.2d 320, 29 Env 1753 (5th Cir. 1989). That case involved a third-party action brought by the engineers who designed an innovative EPA-approved and funded (and ultimately inoperable) physical-chemical treatment plant. The engineers sought indemnification from EPA in the event they were found liable for the city's costs of defending against and settling a federal enforcement action for permit violations at the plant. The Fifth Circuit affirmed dismissal of the third-party suit on the grounds that EPA is protected under the Federal Tort Claims Act's “misrepresentation” exception, 28 U.S.C.A. § 2680(h), for any negligence in its analysis, testing, or approval of an unsuccessful wastewater treatment plant.

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¹CWA §§ 212(1), 212(2), 33 U.S.C.A. §§ 1292(1), 1292(2). As discussed above, these definitions are very broad.

²The primary causes of infiltration are leaky piping systems and roof gutter and other stormwater drain connections that should go either to storm sewers or into dry wells.

³CWA §§ 201(g)(2), 201(g)(5), 33 U.S.C.A. §§ 1281(g)(2), 1281(g)(5).

⁴FWPCA § 204(a)(1), 33 U.S.C.A. § 1284(a)(1).

⁵FWPCA § 204(a)(2), 33 U.S.C.A. § 1284(a)(2). Section 303(e) requires the states to maintain a “continuous planning process” that repeatedly updates information, strategies, and regulatory resources relative to POTW needs, total maximum daily pollutant loads on receiving waters, compliance schedules, sludge handling, and several other concerns.

list, provide for the means of payment of the nonfederal share⁶ and for operation when completed,⁷ and provide that the facility have sufficient capacity and reserves to satisfy present and projectable future demands.⁸

Finally, Congress has consistently refused to provide carte blanche approval for treatment of waste streams that combine stormwater and sanitary sewage and has prohibited the construction of new combined sewers.⁹

§ 13:22 Sewage treatment Grant-In-Aid program—Limitations and conditions—Conditions

All Title II grants contain mandatory conditions found primarily in § 204(a)(6)¹ and §§ 204(b) to (d).²

Sections 204(b)(1), (2), and (4) relate to the section's primary condition that POTW maintain a system of user charges sufficient to cover the operation and maintenance costs of the system.³ This obligation applies to regional POTW as well as those serving only one community, and the failure of one municipality within a

⁶In most states the nonfederal share is paid by a combination of direct state grants and local revenue bonds that are paid off by a combination of user fees, tax revenue appropriations, and state assistance funds. FWPCA § 204(a)(4), 33 U.S.C.A. § 1284(a)(4).

⁷FWPCA § 204(a)(4), 33 U.S.C.A. § 1284(a)(4). Most state water pollution agencies require formal POTW operator training and establish operation and maintenance standards for POTWs. Federal legal action arising out of inadequate operation and maintenance is not common, but it is spectacular when it occurs. For example, a federal judge placed the operation of treatment plants in Detroit under a receiver in *United States v. City of Detroit*, 720 F.2d 443, 14 Env'tl. L. Rep. (Env. Law Inst.) 20164 (6th Cir. 1983), and in *United States v. City of Providence*, 492 F. Supp. 602, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20857 (D.R.I. 1980), the government sought monetary sanctions against a municipality that so mismanaged a POTW that it literally filled up with sludge.

⁸CWA § 204(a)(5), 33 U.S.C.A. § 1284(a)(5), as amended by Pub. L. No. 97-117, § 10, 95 Stat. 1623, limits reserve capacity.

⁹Section 201(n), added in 1981, authorizes the expenditure of funds for treating existing combined sewer overflows under limited circumstances, after October 1, 1984.

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¹CWA § 204(a)(6), 33 U.S.C.A. § 1284(a)(6), as amended by Pub. L. No. 97-117, § 11, 95 Stat. 1623, prohibits the use of proprietary requirements that are not based on performance, subject to stated exceptions.

²In addition to the mandatory conditions discussed herein, EPA has also imposed conditions it perceives to be necessary to further the statute's water quality goals. *See* § 13:23.

³Until 1980, § 204(b)(1) also required that POTWs maintain a system for recovering grant funds used for *construction* costs applicable to the portion of POTW capacity dedicated to industrial users from those users. This provision, called the ICR provision, allowed the municipality to keep 50 percent of the funds recovered, and required the remaining 50 percent to be turned over to the United States treasury. A provision added in 1987, § 204(c), allows the imposition of lower user charges on low income residential users.

The theory behind ICR was to ensure relative economic parity between direct industrial dischargers, who are required to construct their own treatment works in compliance with Title III, and "indirect dischargers," whose effluent is discharged to municipal sewers, and who, but for ICR, would be subsidized to the extent of a portion of the federal grant for construction of the POTW (discounted by whatever capital expenditures would be required for compliance with § 307 pretreatment obligations). ICR was never popular with municipalities and industries. Municipalities claimed that EPA's paperwork was too burdensome, and industries argued that ICR imposed too heavy a relative financial burden. These complaints led to a moratorium on ICR imposed by Pub. L. No. 95-217, 91 Stat. 1566 (1977) and outright repeal of ICR by Pub. L. No. 96-483, 94 Stat. 2360 (1980).

The 1980 amendments inserted a new concept, the Industrial Cost Exclusion in place of ICR. Section 201(k) was inserted, which prohibited the use of any grant funds after October 1, 1980, to be used to treat the wastewater flow of any industrial user greater than 50,000 gallons per day sanitary waste equivalent at facilities not grandfathered by the provision. This compromise was eliminated by the 1981 amendments as of November 15, 1981, by Pub. L. No. 97-117, § 10(c), 95 Stat. 1623, having been deemed surplusage in light of the limitations imposed on reserve capacity. Section 204(c), added

regional POTW service area to charge user fees to sewer users was held a sufficient basis for withholding grant payments and a refusal to authorize new grants by EPA.⁴

The user charge requirement is that each recipient of waste treatment services pay its proportionate share of the operation and maintenance costs of the treatment system. The amounts charged are based on the volume and character of the waste introduced into the system.⁵ The purposes of the user charge requirement are to ensure financial self-sufficiency⁶ and to promote water conservation.⁷

Under very limited circumstances, preexisting *ad valorem* tax schemes can be substituted for a system of user charges.⁸ Although the user charge system is required to be proportional, EPA has wide latitude in accepting a municipality's formula for assessing charges.⁹

Section 204(d), added in 1981, represents Congress's attempt to mitigate the costs of POTW that fail to meet the applicable effluent limits contained in their NPDES permit. It requires grantees to maintain a contractual relationship with the construction engineer through start-up and for a one-year-shakedown period and certify compliance with the permit limits or correct any deficiency with other than federal funds.

There are a number of additional conditions either found elsewhere in the Act or imposed by other laws. Section 215 requires the use of U.S.-made materials. EPA's standard conditions require adherence to the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.¹⁰ The procedures required under this statute are applicable to all related elements of a Title II-funded project, whether or not they are funded in whole, in part, or not at all by EPA.¹¹ In addition, grants may not be made after the end of 1984 for facilities discharging into stream segments whose water quality standards have not been reviewed or revised since 1981.¹² Finally, EPA's general assistance regulations,¹³

in 1981, serves to release early grantees from the ICR requirements imposed under prior law.

⁴City of New Brunswick v. Borough of Milltown, 686 F.2d 120, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20803 (3d Cir. 1982). See also Middlesex County Utils. Auth. v. Borough of Sayerville, 690 F.2d 358, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 21097 (3d Cir. 1982) (holding that § 204(b) does not violate the Tenth Amendment to the U.S. Constitution).

⁵See S. Rep. No. 414, 92d Cong., 1st Sess. 28 (1972), reprinted in 2 Environmental Policy Division, Congressional Research Service, A Legislative History of The Water Pollution Control Act Amendments of 1972, 93d Cong., 1st Sess. 1446 (Comm. Print 1973) (Senate Debate on S.2770, Nov. 2, 1971).

⁶See S. Rep. No. 414, 92d Cong., 1st Sess. 28 (1972), reprinted in 2 Environmental Policy Division, Congressional Research Service, A Legislative History of The Water Pollution Control Act Amendments of 1972, 93d Cong., 1st Sess. 1446 (Comm. Print 1973) (Senate Debate on S.2770, Nov. 2, 1971).

⁷See S. Rep. No. 370, 95th Cong., 2d Sess. 27; City of New Brunswick, 686 F.2d at 133.

⁸Only those taxing schemes that allocate the cost burden in a manner similar to a user charge system will qualify. CWA § 204(b)(1), (b)(4), 33 U.S.C.A. § 1284(b)(1), (b)(4). This limitation was upheld against an equal protection challenge in Middlesex County Utils. Auth. v. Borough of Sayerville, 690 F.2d 358, 366, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 21097, 21101 (3d Cir. 1982).

⁹Hotel Employers Ass'n of San Francisco v. Gorsuch, 669 F.2d 1305, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20591 (9th Cir. 1982) (upholding against due process and equal protection claims, as well as a claim of disproportionality, EPA's approval of San Francisco's user charge system for its combined storm/sanitary sewer system, which allocated surface runoff treatment costs on a pro rata user basis; each user's percentage share of total runoff treatment cost was the same as the percentage share each user contributed to the total cost of treating only sanitary sewage). See generally 40 C.F.R. §§ 35.2122, 35.2140, 35.2130.

¹⁰42 U.S.C.A. §§ 4621. The applicability of this law was affirmed in City of Columbia, S.C. v. Costle, 710 F.2d 1009 (4th Cir. 1983), to Title II projects whether or not they displace any persons.

¹¹City of Columbia, S.C. v. Costle, 710 F.2d 1009, 1013 (4th Cir. 1983).

¹²40 C.F.R. § 35.2111.

contractor debarment and suspension regulations,¹⁴ and procurement regulations¹⁵ impose a labyrinth of regulatory requirements.

§ 13:23 Sewage treatment Grant-In-Aid program—Compliance with other environmental laws

EPA is itself subject to several restraints, discussed in this section, that act like conditions on Title II grant applicants.

Section 511(c) makes EPA's grant-related activities subject to the requirements of NEPA.¹ EPA's NEPA regulations exempt Step 1 grants from NEPA compliance, however,² and thus applicants for Step 2 and Step 3 (or integrated) grants must provide the Agency with the data with which to undertake an environmental assessment and, if the project is significant enough, an environmental impact statement.³

Of the other federal environmental laws, the Endangered Species Act⁴ and the Coastal Zone Management Act⁵ have figured in Title II-related litigation.

In *Pacific Legal Foundation v. Watt*,⁶ the Ninth Circuit dealt with a challenge to EPA's award of Step 1 and Step 2 grants for upgrading the Hyperion sewage treatment plant in Los Angeles. The primary purpose of the grant was to enable the city to cease discharging sludge into the Pacific Ocean. The plaintiff sought to enjoin the grant on, *inter alia*, the grounds that there had been inadequate § 7 consultation about the impact on habitat of the Encinito Blue Butterfly. The court held that Endangered Species Act consultation was "unwarranted" at the Step 1 stage, relying for authority on EPA's NEPA regulation, discussed above.

EPA, as a federal grant-awarding agency, is subject to the provisions of the Coastal Zone Management Act (CZMA) in connection with its activities involving projects located in an area covered by a coastal zone management plan.⁷ The principal CZMA regulatory requirement is that the project be "consistent with" the applicable plan,⁸ and EPA, or the state water pollution agency if grant authority has been delegated,

¹³40 C.F.R. Part 30.

¹⁴40 C.F.R. Part 32.

¹⁵40 C.F.R. Part 33. These regulations embody EPA's bidding and award regulations (the overarching principle is award to the "lowest responsible bidder"), incorporate a wide range of standard federal preferences (e.g., minority or woman owned businesses) and limitations (Davis-Bacon Act requirements, which are imposed under § 513 of the Act, Buy America Act requirements, etc.), and establish procedures for bid protests and challenges, the manner of payment, and the like.

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¹42 U.S.C.A. § 4321. This law is made applicable by § 511(c) of the Act, 33 U.S.C.A. § 1371(c). *See also* Maryland Watermen's Ass'n, Inc. v. Thomas, 1987 U.S. Dist. LEXIS 14992, 25 Env't Rep. Cas. (BNA) 1646 (D.D.C. Feb. 25, 1987) (reviewing a construction grant for NEPA compliance).

²40 C.F.R. § 6.50(b)(2).

³In *Pacific Legal Found. v. Quarles*, 440 F. Supp. 316, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20653 (C.D. Cal. 1977), *aff'd sub nom.* and in *Kilroy v. Quarles*, 614 F.2d 225, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20271 (9th Cir. 1979), NEPA was held not to apply to EPA's conditioning a grant on a system of user charges being put into place.

⁴16 U.S.C.A. § 1531.

⁵16 U.S.C.A. § 1451.

⁶*Pacific Legal Foundation v. Watt*, 703 F.2d 576, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20392 (9th Cir. 1983).

⁷Of course, POTWs are also subject to all applicable state and local regulatory laws. We have not addressed those requirements here, since they are not federal grant-related.

⁸There is a wide diversity in CZM plans approved by the Department of Commerce under the CZMA. Definition of areas falling within CZM jurisdiction differ from state to state, as do the scope, rigor, and procedures of regulation.

must make the consistency determination.⁹

In *Cape May Greene, Inc. v. Warren*,¹⁰ an application for an upgrade grant that would enable a POTW to serve a large new development located in a sensitive ecosystem within the coastal zone was denied by EPA's Region II on the grounds that it was inconsistent with the state's CZMA plan. The applicant had sought and received a variance from the plan's prohibitions from the local coastal management agency, which had certified consistency to EPA. EPA's denial of the grant was predicated on its opinion that the variance was unlawfully given. The court set aside EPA's decision, holding that it lacked authority to look behind the CZMA agency's action.¹¹

In *Shanty Town Associates Limited Partnership v. EPA*,¹² the Fourth Circuit considered a developer's challenge to EPA's authority under the Act to place conditions on a sewage collection system construction grant. The court affirmed the district court's dismissal of the action, holding that EPA's imposition of conditions to protect wetlands and tidal flood plain areas from the development that would otherwise follow on the heels of improved sewage facilities was not arbitrary¹³ and did not intrude on the authority of state and local governments to control nonpoint source pollution.¹⁴ The court also found that the conditional grant did not conflict with the CZMA or with the National Flood Insurance Act, because it did not directly regulate land use in the coastal flood plain and EPA properly obtained local officials' approval before making the grant.¹⁵

§ 13:24 Sewage treatment Grant-In-Aid program—Judicial review of Title II decisions

Grant-related decisions do not fall within the jurisdiction of the courts of appeal enumerated in § 509(b).¹ Most challenges to EPA's refusal to make a grant, or challenges to grants made by the Agency, have been brought in the federal district

⁹For an interesting perspective on the interrelationship between POTW construction and other environmental laws, see *Mumford Cove Ass'n v. Town of Groton*, 25 Env 1452 (D. Conn. 1987), in which a federal judge employed the All Writs Act, 28 U.S.C.A. § 1651, to enjoin the town conservation commission from exercising its jurisdiction under the Connecticut inland wetlands regulatory statute in such a way to prevent construction of a POTW outfall the court had earlier ordered to be built to relieve pollution of an estuary.

¹⁰*Cape May Greene, Inc. v. Warren*, 698 F.2d 179, 18 Env't. Rep. Cas. (BNA) 1553, 35 Fed. R. Serv. 2d 1337, 13 Env'tl. L. Rep. 20319 (3d Cir. 1983).

¹¹Prior to Congress's virtual elimination of grants for reserve capacity in the 1981 amendments, EPA occasionally attempted to limit the growth-inducing propensities of new POTW construction by administratively refusing to award funds for overbuilding. See, e.g., *Smoke Rise, Inc. v. Washington Suburban Sanitary Comm'n*, 400 F. Supp. 1369, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20389 (D.Md. 1974), *aff'd sub nom. Donohue Constr. Co. v. Montgomery County*, 567 F.2d 603 (4th Cir. 1977); *Chesapeake Bay Village, Inc. v. Costle*, 502 F. Supp. 213, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20355 (D.Md. 1980); *State of Maryland ex rel. Burch v. Costle*, 452 F. Supp. 1154 (D. Md. 1978).

¹²*Shanty Town Associates Ltd. Partnership v. E.P.A.*, 843 F.2d 782, 27 Env't. Rep. Cas. (BNA) 1540, 18 Env'tl. L. Rep. 21227 (4th Cir. 1988).

¹³*Shanty Town Assocs. Ltd. P'ship v. EPA*, 843 F.2d 782, 795, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21227 (4th Cir. 1988).

¹⁴*Shanty Town Assocs. Ltd. P'ship v. EPA*, 843 F.2d 782, 792, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21227 (4th Cir. 1988).

¹⁵*Shanty Town Assocs. Ltd. P'ship v. EPA*, 843 F.2d 782, 792–94, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21227 (4th Cir. 1988).

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¹*City of Sarasota v. EPA*, 813 F.2d 1106, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20647 (11th Cir. 1987) (affirming lack of appellate court jurisdiction to review grant decisions, while rejecting the city's inventive arguments attempting to avoid the inevitable).

courts as citizen suits brought under § 505 of the Act² or under § 10 of the Administrative Procedure Act.³ Contractors who disagree with EPA's withholding of funds because of problems with the work have not been uniformly successful in getting through the door to the courthouse because of standing questions.⁴

§ 13:25 Sewage treatment Grant-In-Aid program—Grant administration, protests, and audits

EPA's construction grant regulations, contained primarily in 40 C.F.R. Parts 30, 33, and 35, provide a comprehensive scheme for administration of POTW grants from the application stage to post-construction audits. The basic substantive eligibility and preaward criteria are found in Part 35, subpart E, which governs grants awarded prior to May 12, 1982, and in subpart I, which governs subsequent grants. Procurement and dispute resolution requirements for grants made prior to May 12, 1984, are contained in Part 35,¹ and those regulating subsequently awarded grants are found in Part 33.² Standard grant conditions are published at §§ 35.935 et seq. and 35.2200 et seq., and audit requirements are published as an appendix to Part 30.

The rather confusing pattern of grant regulations arises from EPA's consolidation and attempted streamlining of its various grant-in-aid regulations in 1982.³

EPA has aggressively sought to exercise the authority granted by § 201(g) of the Act to delegate to the states authority to review and evaluate grant applications; the ground rules for delegation are set forth at 40 C.F.R. Part 35, subpart J.⁴ The degree of state delegation is dependent upon the state's capabilities, and delegation

²See, e.g., *Cape May Greene, Inc. v. Warren*, 698 F.2d 179, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20319 (3d Cir. 1983); *Chesapeake Bay Village, Inc. v. Costle*, 502 F. Supp. 213, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20355 (D.Md. 1980) (holding that there is no cause of action for private plaintiffs under § 505, or implied under the *Cort v. Ash* doctrine against state or municipal grantees); cf. *Fairview Township v. EPA*, 773 F.2d 517, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20951 (3d Cir. 1985) (where EPA has not delegated grant administration to a state, it does not have a nondiscretionary duty to act on a grant application within a set period of time, thus there is no basis for a citizen suit by applicant municipality); *Atlantic City Mun. Utils. Auth. v. Regional Adm'r*, 803 F.2d 96, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20106 (3d Cir. 1986) (following *Fairview* on citizen suit issue and denying jurisdiction under the Administrative Procedure Act where claim is in essence one for money).

³5 U.S.C.A. § 702. See *Fairview Township v. EPA*, 773 F.2d 517, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20951 (3d Cir. 1985) (holding jurisdiction exists in district courts under the APA to hear suit brought by municipality alleging wrongful denial of a grant due to misapplication of guidelines).

⁴Compare *Dan Caputo Co. v. Russian River Sanitation Dist.*, 749 F.2d 571 (9th Cir. 1984) (contractor lacks standing under the Act and APA to challenge allocation of grant funds to other contractors to correct alleged deficiencies in work done by original contractor in contract dispute with POTW owner) and *Standard Eng'rs & Constructors, Inc. v. EPA*, 483 F. Supp. 1163 (D. Conn. 1980) (unsuccessful bidder lacks standing to raise challenge to the integrity of the bidding process) and *Sovereign Constr. Co. v. Philadelphia*, 582 F.2d 1276 (3d Cir. 1978) (disappointed bidder lacks standing) with *CCTW&M v. EPA*, 452 F. Supp. 69 (D.N.J. 1978) and *Union Carbide Corp. v. Train*, 73 F.R.D. 620 (S.D.N.Y. 1977); cf. *Michigan v. City of Allen Park*, 573 F. Supp. 1481, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20237 (E.D. Mich. 1980), *aff'd*, 667 F.2d 1028 (6th Cir. 1981).

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¹40 C.F.R. §§ 35.936-35.939.

²There are two versions of Part 33. The May 12, 1982 version governs grants awarded between that date and March 28, 1983. The March 28, 1983, version governs subsequently awarded grants. See 48 Fed. Reg. 12926 (1983) (explanation of the changes).

³See 47 Fed. Reg. 20476 (1982). EPA promulgated an elaborate implementation scheme, which allows for voluntary submittal by existing applicants to the new regulations in certain circumstances. See 48 Fed. Reg. 12926 (1983) (Implementation Note).

⁴Subpart J was added in 1983, replacing earlier similar regulations. See 48 Fed. Reg. 37818 (1983).

terms are set forth in a delegation agreement.⁵

States may be delegated authority to review and certify all construction grant documents required before and after the grant award and generally to manage the program, except for activities EPA cannot delegate. Those include actual decision-making on making payments and terminations, compliance with NEPA and other federal statutes, final resolution of grant audit exceptions, certain procurement determinations, and management of projects containing a heavy federal interest.⁶ The states' primary function, then, is to review grant-related documents and "certify" them to EPA as complying with all applicable grant program requirements.⁷

In addition to ensuring that grant applicants have complied with all of the preapplication requirements imposed by the Act, the construction grant regulations seek to ensure that the projects will be designed in accordance with good engineering practice, and will be constructed properly without excessive costs. Thus, EPA oversees the relationship between the municipal sponsor of the project and its contractors and subcontractors, and the bidding process involved in their procurement.⁸

Contractor and subcontractor protests are governed by an administrative appeal process contained in 40 C.F.R. §§ 33.1105-33.1145.⁹ Any dispute, whether by a dissatisfied bidder or arising out of contract administration, must be processed according to the procedures set forth in the regulation. The dispute resolution procedures require initial handling of the dispute by the grantee.¹⁰ If the dispute is not resolved by the grantee, appeal may be taken by any "party with a financial interest which is adversely affected" by the grant recipient's decision¹¹ to the "award official,"¹² who determines the matter by informal procedures (there is no right to a hearing).¹³ If the questions posed are purely legal questions, the matter will be resolved by that agency's lawyers.¹⁴ There is no right to a further administrative appeal.¹⁵

The current regulations specify the kinds of issues that are subject to protest

⁵See 40 C.F.R. § 35.3010.

⁶40 C.F.R. § 35.3015.

⁷EPA acts as an appeal body from state decisions. See 40 C.F.R. § 35.3030. There are two types of certification. *All* states are required to certify that a project is entitled to priority in accordance with the priority system. See 40 C.F.R. § 35.2042(a). Delegated states also certify compliance with the substantive and procedural grant conditions and regulations. 40 C.F.R. § 35.2042(b). Under the current regulations, the Regional Administrator must approve or disapprove a certification within forty-five days of submittal, or it is deemed approved. 40 C.F.R. § 35.2042(b)(2).

⁸See generally 40 C.F.R. § 35.3030, 40 C.F.R. §§ 35.936 to 35.938 (grants awarded prior to May 12, 1983); 40 C.F.R. §§ 33.001 to 33.1135 (subsequent grants) (covering procurement of engineering services and construction contracts, including such things as material specifications, bonding and insurance, mandatory contract forms and terms, public notice, solicitation and evaluation of bids, force account work, advertising, change orders, progress payments, retention from progress payments, and similar construction industry considerations).

EPA retains authority to oversee significant change orders and retains authority to terminate a contract for violation of the regulations or other cause.

⁹Pre-1982 grants were, and to an extent still are, governed by a different appeal mechanism contained in 40 C.F.R. § 35.939. The new procedure is somewhat less cumbersome than the old.

¹⁰40 C.F.R. § 33.1110. See also 40 C.F.R. § 35.939(b) to (d) (earlier grants).

¹¹40 C.F.R. § 33.1115.

¹²The "award official" is "[t]he EPA official with the authority to execute assistance agreements and to take other actions authorized by [the grant regulations] and by EPA orders." 40 C.F.R. § 30.200. For construction grants this is the Regional Administrator.

¹³A copy of the protest appeal is required to be served on the Regional Counsel. The regulations provide opportunity for a "conference." See 40 C.F.R. § 33.1125 (filing requirements); 40 C.F.R. § 33.1145 (review procedures).

¹⁴The earlier regulations provided for referral of legal questions to the Comptroller General. See 40 C.F.R. § 35.939(e).

appeals. The pre-1982 regulations took a different approach, listing subjects that are not subject to protest. The old regulations excluded matters of state or local law, most issues arising out of selection of a consulting engineer and arising under the letting of competitively bid lump-sum contracts, basic design decisions, and several other matters.¹⁶ The present regulations state that protest appeals may only raise (1) issues arising under the procurement provisions of Part 33, (2) alleged violations of state or local law or ordinances “where the award official determines that there is an overriding Federal requirement,” and (3) subcontractor appeals that are limited to the award of the subagreement (i.e., subcontractors may not appeal issues of interpretation or award of the prime contract).¹⁷

Cost control is regulated by means of the “allowable cost” approach contained in 40 C.F.R. § 30.705 and in Appendix A to 40 C.F.R. Part 35, subpart I.¹⁸ Essentially, EPA will pay only “allowable costs” as defined in the regulation, which reflects the statutes’ prohibitions¹⁹ as well as serving an enforcement purpose.²⁰ Since most projects are built with local funds, with EPA providing reimbursement up to the federal limit, project sponsors act at their financial peril if they incur costs that fall within the “unallowable” category²¹ or, in the absence of prior EPA authorization, within the “allowable if approved by EPA” category.²²

Assurance that projects are built according to expectations is primarily the responsibility of the grantee.²³ EPA inspects the facility prior to operation and requires preparation of a corrective action report at the grantee’s expense if the plant fails to meet its permit limits.²⁴ The standard grant conditions allow EPA to inspect construction, approve significant change orders,²⁵ and shut down the job if irregularities are noted.²⁶

EPA imposes a self-audit requirement on grant recipients,²⁷ but retains the power to do interim or end-of-project audits.²⁸ In addition, the Single Audit Act of 1984²⁹ establishes post-award audit requirements that are binding on all federal assistance recipients. OMB Circular A-128 is made a part of 40 C.F.R. Part 30 by attachment

¹⁵40 C.F.R. § 33.1145(g).

¹⁶See 40 C.F.R. § 35.939(j).

¹⁷40 C.F.R. § 33.1120.

¹⁸Pre-1982 grants were subject to a less elaborate allowable cost provision. 40 C.F.R. § 35.940.

¹⁹For example, Appendix A, subpart C defines the allowable costs related to the construction of privately owned treatment or pretreatment facilities in accordance with the requirements of § 201(h), and subpart D spells out the limits on real property acquisition.

²⁰Subpart E.2 contains several disallowances for materials or services purchased “in violation of” the grant regulations.

²¹40 C.F.R. §§ 35.940-35.942. For example, EPA does not pay the cost of site acquisition for sewer lines.

²²See 40 C.F.R. §§ 35.940-35.943 (pre-1982 grants); 40 C.F.R. Part 35, subpart I, Appendix A (generally for those expenditures that require prior EPA approval).

²³40 C.F.R. § 35.2214.

²⁴40 C.F.R. §§ 35.2216, 35.2218. There is an exception for innovative technologies.

²⁵See 40 C.F.R. § 35.2204 (non-minor project changes require a grant amendment).

²⁶See 40 C.F.R. § 30.900 (relating to stop work orders, payment withholding, suspension or termination of assistance, and annulment. Part 32 of the regulations deals with suspension and debarment).

²⁷See 40 C.F.R. § 30.510(g).

²⁸See 40 C.F.R. § 30.540.

²⁹Pub. L. No. 98-502, 98 Stat. 2327 (1984).

as Appendix E.³⁰ The audits supplement an elaborate system of recordkeeping and reporting requirements imposed by 40 C.F.R. § 30.505 and Appendix D of Part 30.

There is a significant degree of failure of POTW to meet their effluent limits consistently, and there have been a few cases of catastrophic failure. EPA has rarely used its granting authority as a lever to force municipal grant recipients to seek redress from negligent engineers or contractors, although it has the power to condition award of a grant in such a circumstance to exhaustion of the grantee's legal remedies against the responsible private entities.³¹ The Agency has never aggressively sought to recover federal funds negligently employed by subcontractors. Though there are common law theories supporting such actions, the degree of supervisory power EPA possesses over POTW construction imposes potentially formidable equitable barriers to such actions.

§ 13:26 Water quality management: Planning grants and nonpoint source regulation¹

The major focus of the Clean Water Act has been the implementation, through the NPDES permit program, of effluent limitations on industrial and municipal "point sources" of pollution. Pollution also results, however, from the addition of pollutants by "nonpoint" sources such as agricultural and urban runoff that are not regulated by NPDES permits.² Nonpoint source control, however, is not generally amenable to technological controls and is more closely related to land-use planning. As a consequence, the area of nonpoint regulation has been controversial and largely ignored until recently.

Federal efforts to control nonpoint sources have, in the past, largely been limited to funding of areawide management plans under § 208. In the Water Quality Act of 1987, Congress acknowledged the need for control of nonpoint sources and added, as a new national policy, the development of programs for the control of nonpoint sources of pollution "in an expeditious manner."³ The 1987 amendments added new provisions for the development of plans for the control of nonpoint sources. Federal efforts remain, however, essentially limited to funding of state and regional planning efforts.⁴

§ 13:27 Water quality management: Planning grants and nonpoint source regulation—Grants for water quality planning—Section 319 nonpoint source management programs

³⁰51 Fed. Reg. 6353 (1986).

³¹EPA considered such a condition in the case of the City of Niagara Falls, New York. See note 5 in § 13:20.

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¹By **Jeffrey Gaba**.

²The Final Draft of U.S. EPA, Office of Water Regulations and Standards Nonpoint Source Guidance (Aug. 1987) [hereinafter *Nonpoint Source Guidance*] defines nonpoint source (NPS) pollution as follows:

NPS pollution is caused by diffuse sources that are not regulated as point sources and normally is associated with agricultural, silvicultural and urban runoff, runoff from construction activities, etc. Such pollution results in human-made or human-induced alteration of the chemical, physical, biological, and radiological integrity of water. In practical terms, nonpoint source pollution does not result from a discharge at a specific, single location (such as a single pipe) but generally results from land runoff, precipitation, atmospheric deposition, or percolation. Pollution from nonpoint sources occurs when the rate at which pollutant materials entering waterbodies or ground water exceeds natural levels.

³CWA § 101(a)(7), 33 U.S.C.A. § 1251(a)(7).

⁴Section 402(p), 33 U.S.C.A. § 1342(p), does require NPDES permits for certain municipal and industrial stormwater discharges.

The Water Quality Act of 1987 added a new § 319 to the Clean Water Act that purports to address the problem of nonpoint source pollution. Section 319(a) requires states to prepare a report identifying stream segments that, without “additional action to control nonpoint sources of pollution,” cannot reasonably be expected to attain water quality standards or the goals and requirements of the Act. States are also required to identify categories of nonpoint sources that add significant pollution to these waters and a process for identifying the “best management practices and measures” to control these sources. In addition, states are required under § 319(b) to submit “management programs” that contain elements designed to show implementation of controls of nonpoint sources.¹

The nonpoint source report and management program must be submitted for review and approval by EPA.² Unlike the similar provisions in § 304(l) relating to control of toxic pollutants from point sources,³ EPA may not promulgate its own program for control of nonpoint source pollution if the state fails to act or acts inadequately. If a state fails to submit the required report, EPA may prepare the report itself and then notify Congress.⁴ If the state fails to adopt an adequate management program, EPA is authorized, with the approval of the state, to provide technical assistance to a local public agency or organization with authority to control nonpoint source pollution in an adequately large geographic area. If the local authority prepares an acceptable management plan they will then be eligible for subsequent receipt of federal funding for implementation of the program.⁵

The § 319 program, like the § 208 program that preceded it, relies largely on the “carrot” of federal funding.⁶ Section 319(h) authorizes the Administrator to provide grants for up to 60 percent of the cost of implementation of management programs. Additionally, the Administrator may award grants to states with approved reports and management plans, for the control of groundwater quality. These grants, however, are limited to 50 percent of total costs with an annual limitation of \$150,000. The amendments authorize appropriations of up to \$400 million over four

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¹Section 319(g), 33 U.S.C.A. § 1329(g), authorizes a state to petition the Administrator to convene an interstate management conference if waters subject to an approved management plan are not meeting their goals, in whole or part, due to nonpoint source pollution from another state. There is no substantive authority to compel agreement among states in these conferences, and the convening of any conference is expressly exempt from citizen suit provisions of § 505.

²CWA § 319(d), 33 U.S.C.A. § 1329(d). As of 2003, all states had developed the assessment reports required by § 319(a) and had adopted the management programs required by § 319(b). 68 Fed. Reg. 60653, 60655 (Oct. 23, 2003).

³See § 13:31; Gaba, *Federal Supervision of State Water Quality Standards Under the Clean Water Act*, 36 Vand. L. Rev. 1167, 1216–17 (1983). EPA published guidance entitled “Implementation of Requirements under § 304(l) of the Clean Water Act, as amended” in March 1988. EPA subsequently promulgated an “interpretative” rule that incorporated portions of § 304(l) into its existing NPDES and water quality regulations. 54 Fed. Reg. 246 (1989). On June 2, 1989, EPA promulgated final regulations defining a surface water toxics control program under § 304(l). 54 Fed. Reg. 23868 (1989).

⁴CWA § 319(d)(3), 33 U.S.C.A. § 1329(d)(3).

⁵CWA § 319(e), 33 U.S.C.A. § 1329(e).

⁶The Water Quality Act of 1987 establishes five primary funding sources related to nonpoint source control:

- (1) Section 205(j)(5) construction grant set-aside of up to one percent of each state’s construction grant allotment;
- (2) Section 319(h) grant authorizations for implementation of approved 319 management programs;
- (3) Section 319(i) grant authorizations for groundwater quality protection activities;
- (4) Section 201(g)(1) discretionary set-aside from construction grant funds; and
- (5) Section 603(c)(2) for loans from the newly established state revolving funds.

years for the program and Congress has consistently reauthorized § 319(h) funding at levels near or above \$200 million since 1999.

§ 13:28 Water quality management: Planning grants and nonpoint source regulation—Grants for water quality planning—Section 208 areawide management plans

Prior to the 1987 amendments, the primary vehicle established by the Act to address the nonpoint source pollution problem was the areawide waste treatment management planning provisions of § 208.¹ Pursuant to § 208, states are required to designate areas that, “as a result of urban-industrial concentrations and other factors, [have] substantial water quality control problems,” and designate a regional planning organization for such areas and to develop areawide management plans for control of pollution.² Plans are required to address a number of factors.³ With respect to point sources, these plans are to identify necessary waste treatment facilities, specify construction priorities, and develop a regulatory program for assuring that municipal waste treatment and industrial pretreatment requirements are implemented. The plans are also to identify and establish procedures and methods to control nonpoint source pollution problems from agriculture and silviculture, mining, and salt water intrusions into rivers, lakes, and estuaries from sources including groundwater extraction. The plans are also to address the process of control of disposal of wastes on land to protect ground and surface water quality.

These § 208 plans are subject to federal approval, and subsequent activities including NPDES and § 404 dredge and fill permitting are required to be consistent with the plans. The Act also supplied a major carrot for implementing the planning requirements. Section 208 authorized the issuance of planning grants to states for the costs of developing the areawide management plans.

The § 208 areawide planning process has not been generally considered a successful program. By 1979, only a limited number of water quality plans had been certified by the states and EPA, and EPA has stopped issuing grants for the implementation of the § 208 process.⁴ The reasons for the relative failure of the program are not hard to identify. First, administration and funding of the program got off to a slow start. EPA was sued both for failure to promulgate appropriate regulations implementing the § 208 program⁵ and for failure to disburse § 208 planning funds.⁶ Second, the § 208 process attempted to promote regional planning which, however

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¹CWA § 208, 33 U.S.C.A. § 1288. In 1977, § 208 was amended by adding a new § 208(j), which provides for “agricultural cost sharing.” This program, administered by the Department of Agriculture through the Soil Conservation Service, authorizes the grant of funds for owners and operators of “rural land” for the purpose of “installing and maintaining measures incorporating best management practices to control nonpoint source pollution for improved water quality.” Regulations for this “Rural Clean Water Program” are contained in 7 C.F.R. §§ 634.1-634.50.

²CWA § 208(a), 33 U.S.C.A. § 1288(a). In 1975, a court concluded that § 208 required states to undertake planning responsibility for areas which had not been designated as having significant pollution problems. *Nat. Res. Def. Council, Inc. v. Train*, 396 F. Supp. 1386, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20405 (D.D.C. 1975), *aff'd*, 564 F.2d 573, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20702 (D.C. Cir. 1977).

³CWA § 208(b), 33 U.S.C.A. 1288(b). Section 208 also requires designation of regional “management” agencies to implement the requirements of the plan. CWA § 208(c), 33 U.S.C.A. § 1288(c).

⁴40 C.F.R. §§ 35.250 to 35.360 (authorizes planning grants pursuant to §§ 106, 205(h), and 205(j)).

⁵*See Nat. Res. Def. Council, Inc. v. Train*, 396 F. Supp. 1386, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20405 (D.D.C. 1975), *aff'd*, 564 F.2d 573, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20702 (D.C. Cir. 1977).

⁶*Nat'l Ass'n of Regional Councils v. Costle*, 564 F.2d 583, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20737 (D.C. Cir. 1977).

logical it may be, did not fit within the traditional scheme of state and municipal political authority.⁷ Further, the primary emphasis at the federal level was on implementation of the effluent guidelines and NPDES permit provisions of the Act, and federal resources were not devoted to the program. Finally, and most importantly, nonpoint source pollution control is a difficult and controversial process. It involves land-use issues and control of agricultural processes, which are politically difficult to identify and implement.⁸

The total maximum daily loads (TMDL) process has created leverage for implementing and funding nonpoint source controls. In the TMDL process, point sources understand that they will continue to have more costly controls imposed on them if no one does anything about nonpoint sources. The nonpoint source controls are often more economical than more point source controls, so the point sources can often be convinced to fund nonpoint source control activities (by others) if they in turn get some assurance that more point source controls will not be imposed, at least in the short term.

§ 13:29 Water quality management: Planning grants and nonpoint source regulation—Grants for water quality planning—Water quality management planning

EPA has combined elements of the Clean Water Act to create a comprehensive water quality management program that requires states to develop and implement a state or areawide “Water Quality Management” (WQM) Plan.¹ These regulations implement not only § 208 but also the planning grant provisions of §§ 106 and 205, the requirements for a continuing planning process under § 303(e), and the water quality monitoring requirements of § 305. The WQM Plan consists of § 208 and § 303(e) plans and certified and approved updates to those plans.

EPA regulations require that states develop a water quality management plan that identifies point and nonpoint sources of pollution, considers alternative solutions, and recommends control approaches and programs. The plan elements include, among others: identification and priority ranking of water quality limited stream segments and development of TMDL for these segments, as required by § 303(d);² identification of necessary industrial and municipal treatment facilities and construction priorities, as required by § 208;³ description of regulatory and nonregulatory programs activities and Best Management Practices (BMPs) for control of nonpoint source pollution;⁴ identification of management agencies necessary to carry out the plan;⁵ and identification and development of programs for control of groundwater pollution to the extent required by § 208(b)(2)(K) of the Act.⁶

Additionally, water quality management planning includes submission of the biennial water quality report, as required by § 305(b), which describes and assesses

⁷See Wilkins, *The Implementation of Water Pollution Control Measures—Section 208 of the Water Pollution Control Act Amendments*, 15 Land & Water L. Rev. 479 (1980).

⁸See Jungman, *Areawide Planning Under the Federal Water Pollution Control Act Amendments of 1972: Intergovernmental and Land Use Implications*, 54 Tex. L. Rev. 1047 (1976).

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¹40 C.F.R. Part 130. See U.S. EPA, Office of Water, *State Clean Water Strategies: Meeting the Challenge of the Future* (Dec. 1987).

²40 C.F.R. § 130.6(c)(1).

³40 C.F.R. § 130.6(c)(3).

⁴40 C.F.R. § 130.6(c)(4).

⁵40 C.F.R. § 130.6(c)(5).

⁶40 C.F.R. § 130.6(c)(9).

the current status of water quality within the state⁷ and development of state water quality standards pursuant to § 303.⁸ The state is required to certify by letter to EPA that WQM Plan updates are consistent with all other parts of the plan.⁹ Construction grant and permit decisions must be made in accordance with certified and approved WQM Plans.¹⁰

Funding of water quality management activities is now provided through a combination of grant programs under the Clean Water Act. The Agency now authorizes funding for various water quality purposes under §§ 106 and 205.¹¹ EPA regulations identifying specific funding eligibility and grant administrative requirements for these funds are found in 40 C.F.R. Part 35, subpart A, *Financial Assistance for Continuing Environmental Programs*.

§ 13:30 Water quality management: Planning grants and nonpoint source regulation—Regulation of nonpoint sources

The Clean Water Act permit programs, both NPDES and § 404 dredge and fill permits, are triggered by the discharge of pollutants from a “point source.”¹ Nonpoint sources are not specifically regulated under the Act. Sections 208 and 319 of the Act, however, authorize imposition of regulatory programs to control nonpoint source pollution, and EPA regulations require states to implement BMPs for control of these nonpoint sources.²

EPA has provided only the most general definition of BMPs. The water quality management regulations define BMPs as methods, measures or practices selected by an agency to meet its nonpoint source control needs. BMPs include but are not limited to structural and non-structural controls and operation and maintenance procedures. BMPs can be applied before, during and after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters.³ Thus, § 208 and agency regulations authorize virtually any form of control technique under the rubric of best management practice. Nonpoint source BMPs are a largely unexplored area under the Clean Water Act.⁴

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⁷40 C.F.R. § 130.8.

⁸40 C.F.R. § 130.3.

⁹40 C.F.R. § 130.6(e).

¹⁰40 C.F.R. § 130.6(f).

¹¹40 C.F.R. §§ 35.250-35.360 (authorizes planning grants pursuant to §§ 106, 205(h), and 205(j)).

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¹CWA § 301(a), 33 U.S.C.A. 1311(a). *Cf.* United States v. Earth Sciences, Inc., 599 F.2d 368, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20542 (10th Cir. 1979) (discussion of mining companies activities as point source for purpose of NPDES permitting); Avoyelles Sportsmen's League, Inc. v. Marsh, 715 F.2d 897, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20942 (5th Cir. 1983) (discussion of land clearing activity as point source for purposes of § 404 dredge and fill permit).

²These “best management practices” implemented through § 208 are presumably to be distinguished from the best management practices for the control of toxic pollutants under § 304(e). These toxic BMPs may supplement industrial effluent limitations guidelines and control plant site runoff, spillage or leaks, sludge or waste disposal, and drainage from raw material storage.

³40 C.F.R. § 130.2(m).

⁴One commentator has noted that states might be able to use § 208 to regulate activity on federal lands. *See* Comment, Regulation of Nonpoint Sources of Water Pollution in Oregon Under § 208 of the Federal Water Pollution Control Act, 60 Or. L. Rev. 184, 189 n.29 (1981).

EPA regulations also put some limited teeth in the BMP requirements by limiting reduction in water quality standards if higher standards could be achieved by “cost effective and reasonable best management practices for nonpoint source control.” 40 C.F.R. § 131.10(h)(2).

§ 13:31 Jurisdictional scope

Section 301(a) of the Act establishes its jurisdictional limits. It states: “Except in compliance with this section and §§ 302, 306, 307, 318, 402 and 404 of this Act, the discharge of any pollutant by any person shall be unlawful.”

It is in the definitional provision, § 502, however, that the true jurisdictional scope and limitations are found. Section 502(12) defines “discharge of a pollutant” to mean “(A) any addition of any pollutant to navigable waters from any point source, and (B) any addition of any pollutant to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft.” The jurisdictional reach is further defined by the key definitions of “navigable waters,” “pollutant,” and “point source,” which are found at §§ 502(7), 502(6), and 502(14), respectively.¹

§ 13:32 Jurisdictional scope—Waters of the United States

The Act regulates “discharges” into “navigable waters,” defined as “waters of the United States.”¹ The legislative history of the term² shows that Congress “intended to repudiate limits that had been placed on federal regulation by earlier water pollution control statutes and to exercise its powers under the commerce clause to regulate at least some waters that would not be deemed ‘navigable’ under the classical understanding of that term.”³ Thus, courts have held that the Act applies to wetland areas that “form the border of or are in reasonable proximity to other waters of the United States,” even though there is no apparent surface connection,⁴ to non-navigable tributaries seasonally connected to traditionally navigable waters,⁵

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¹The term “addition” is not defined. It is the source of disputes over EPA’s net-gross regulations, discussed in § 13:62. It also spawned jurisdiction over the question of whether releases from impoundments must be regulated under the Act. See *Nat’l Wildlife Fed’n v. Gorsuch*, 693 F.2d 156, 13 Env’t L. Rep. (Env’t L. Inst.) 20015 (D.C. Cir. 1982). In *Rybachek v. EPA*, 904 F.2d 1276, 20 Env’t L. Rep. (Env’t L. Inst.) 20973 (9th Cir. 1990), the court quickly dispensed with a challenge to EPA’s determination that the discharge of sluiced paydirt into streams by placer miners constitutes the “addition” of pollutants. But see *Froebel v. Meyer*, 13 F. Supp. 2d 843 (E.D. Wis. 1998) (holding that redepositing of indigenous sediment caused by state agency’s removal of dam did not result in any “discharge of dredged material” that would require a permit from the Corps).

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¹CWA § 502(7); 33 U.S.C.A. § 1362(7).

²See S. Conf. Rep. No. 1236, 92d Cong. (1972).

³*United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121, 106 S. Ct. 455, 88 L. Ed. 2d 419, 23 Env’t Rep. Cas. (BNA) 1561, 16 Env’t L. Rep. 20086, 20089 (1985); *U. S. v. Ashland Oil & Transp. Co.*, 504 F.2d 1317, 7 Env’t Rep. Cas. (BNA) 1114, 4 Env’t L. Rep. 20784 (6th Cir. 1974). Under the classical test of “navigability,” waters had to be either subject to the ebb and flow of the tide or be “navigable in fact . . . when they form in their ordinary condition by themselves, or by uniting with other waters, a continued highway” in the chain of interstate or foreign commerce. The *Daniel Ball*, 77 U.S. 557, 19 L. Ed. 999, 2000 A.M.C. 2106, 1870 WL 12737 (1870). Though the *Daniel Ball* test was expanded in the 20th century by such cases as *United States v. Appalachian Elec. Power Co.*, 311 U.S. 377, 409, 61 S. Ct. 291, 85 L. Ed. 243, 1941 A.M.C. 1 (1940), to encompass historically non-navigable streams that could be made navigable “after reasonable improvement,” the classical formula still left tens of thousands of miles of tributaries beyond the reach of federal jurisdiction.

⁴*United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121, 106 S. Ct. 455, 88 L. Ed. 2d 419, 23 Env’t Rep. Cas. (BNA) 1561, 16 Env’t L. Rep. 20086 (1985). But see *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Eng’rs*, 531 U.S. 159, 121 S. Ct. 675, 148 L. Ed. 2d 576, 51 Env’t Rep. Cas. (BNA) 1833, 31 Env’t L. Rep. 20382 (2001) (holding that isolated waters that have no connection to waters of the United States other than by the migration of birds are not subject to the CWA).

⁵*United States v. Texas Pipe Line Co.*, 611 F.2d 345, 14 Env’t Rep. Cas. (BNA) 1120, 10 Env’t L.

to intermittent streams,⁶ and to ditches and irrigation canals.⁷

Moreover, Congress intended that the term “waters of the United States” be given the “broadest constitutional interpretation.”⁸ Although wholly intrastate water bodies have been held within the Act’s jurisdiction,⁹ there is undoubtedly a limit to federal jurisdiction imposed by the limits of the commerce power. However, just what that limit is has yet to be defined.¹⁰ For instance, one limitation imposed by the language of the Act itself, and its legislative history, is underground waters. The leading decision, acquiesced to by EPA, is *Exxon Corp. v. Train*,¹¹ which held that EPA lacks control over deep well injection where the wells are not connected to surface waters (the usual case), since Congress decided to leave groundwater regulation up to the states.¹²

In addition, EPA and the Corps do not include prior convert croplands within the scope of waters of the United States. In the 1985 Farm Bill included Highly Erodible Land Conservation and Wetland Conservation Compliance or “Swampbuster” provisions designed to reduce the conversion of wetlands for agricultural provisions.¹³ In other words, draining, filling, leveling, clearing stumps, or otherwise altering a

Rep. 20184, 52 A.L.R. Fed. 783 (10th Cir. 1979); *P. F. Z. Properties, Inc. v. Train*, 393 F. Supp. 1370, 7 Env’t Rep. Cas. (BNA) 1930 (D.D.C. 1975).

⁶*United States v. Moses*, 496 F.3d 984, 64 Env’t Rep. Cas. (BNA) 1993 (9th Cir. 2007) (holding that a seasonally intermittent stream constituted “waters of the United States”); *United States v. Phelps Dodge Corp.*, 391 F. Supp. 1181, 7 Env’t Rep. Cas. (BNA) 1823, 5 Env’t L. Rep. 20308 (D. Ariz. 1975); *Avoyelles Sportsmen’s League, Inc. v. Alexander*, 511 F. Supp. 278, 17 Env’t Rep. Cas. (BNA) 1375, 11 Env’t L. Rep. 20321 (W.D. La. 1981), *judgment aff’d in part, rev’d in part*, 715 F.2d 897, 19 Env’t Rep. Cas. (BNA) 1841, 13 Env’t L. Rep. 20942 (5th Cir. 1983). In *United States v. Akers*, 651 F. Supp. 320, 25 Env’t Rep. Cas. (BNA) 1609, 17 Env’t L. Rep. 20702 (E.D. Cal. 1987), the district court concluded that CWA jurisdiction extended to an area whose only source of water was manmade irrigation structures. To similar effect, see *Track 12, Inc. v. District Eng’r, U.S. Army Corps of Eng’rs, St. Paul, Minn.*, 618 F. Supp. 448, 24 Env’t Rep. Cas. (BNA) 1574, 16 Env’t L. Rep. 20163 (D. Minn. 1985), and *United States v. Ciampitti*, 583 F. Supp. 483, 20 Env’t Rep. Cas. (BNA) 1926 (D.N.J. 1984). Several courts have held that EPA has authority to regulate internal streams of wastewater produced by dischargers. See, e.g., *Texas Mun. Power Agency v. Administrator of U.S. E.P.A.*, 836 F.2d 1482, 27 Env’t Rep. Cas. (BNA) 1249, 18 Env’t L. Rep. 20538 (5th Cir. 1988).

⁷*Headwaters, Inc. v. Talent Irrigation Dist.*, 243 F.3d 526, 533, 52 Env’t Rep. Cas. (BNA) 1001, 31 Env’t L. Rep. 20535 (9th Cir. 2001) (holding that irrigation canals were “waters of the United States”); *United States v. Eidson*, 108 F.3d 1336, 1341-42, 44 Env’t Rep. Cas. (BNA) 1550, 27 Env’t L. Rep. 20853 (11th Cir. 1997) (holding that ditch connected to sewer drain and running into canal constituted “waters of the United States”).

⁸118 Cong. Rec. 33757 (1972) (remarks of Rep. Dingell on consideration of conference report).

⁹*United States v. Byrd*, 609 F.2d 1204, 9 Env’t L. Rep. (Env’t L. Inst.) 20757 (7th Cir. 1979).

¹⁰In *Hoffman Homes, Inc. v. EPA*, 999 F.2d 256, 23 Env’t L. Rep. (Env’t L. Inst.) 21139 (7th Cir. 1993), for example, the court held that, since millions of people throughout North America spend more than a billion dollars per year on hunting, trapping, and observing migratory birds, activities affecting any wetlands potentially used by such birds also affect interstate commerce.

¹¹*Exxon Corp. v. Train*, 554 F.2d 1310, 7 Env’t L. Rep. (Env’t L. Inst.) 20594 (5th Cir. 1977); *accord Village of Oconomowoc Lake v. Dayton Hudson Corp.*, 24 F.3d 962, 24 Env’t L. Rep. (Env’t L. Inst.) 21080 (7th Cir. 1994). *But see United States Steel Corp. v. Train*, 556 F.2d 822, 7 Env’t L. Rep. (Env’t L. Inst.) 20419 (7th Cir. 1977). For a discussion of recent district court decisions addressing whether the Act’s permitting provisions apply to discharges to groundwater, see *Umatilla Waterquality Protective Ass’n v. Smith Frozen Foods, Inc.*, 962 F. Supp. 1312, 27 Env’t L. Rep. (Env’t L. Inst.) 21411 (D. Or. 1997) (holding that the Act does not regulate groundwater that is hydrologically connected to surface water).

¹²Groundwater discharges are, however, regulated under the Safe Drinking Water Act and the Resource Conservation and Recovery Act. It should be noted that courts recently have found that the discharge of pollutants to navigable waters through groundwater is jurisdictional under the CWA. See Section 13:34.

¹³*Wetland Conservation Provisions (Swampbuster)*, USDA (Sept. 12, 2018 4:36pm) <https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/water/wetlands/?cid=stelprdb1043554>.

wetland will result in loss of eligibility for U.S. Department of Agriculture (USDA) program benefits. But, Prior Converted Cropland (PC) is exempt from the Swampbuster provisions. As a result, PC areas can be further drained, cropped, or filled without loss of eligibility for USDA program benefits and, in some areas, may be exempt from wetland regulations administered by the Corps under Section 404 of the CWA. But, if PC areas change to non-agricultural use, or are abandoned based on Corps and EPA criteria, then the PC areas may be regulated under the CWA.

In addition, conforming modifications were made to several regulations in which the definition of “waters of the United States” or of “navigable waters” is relevant.¹⁴ In 1985, the Supreme Court upheld the Corps’ authority over intrastate wetlands as “waters of the United States” under the Corps’ regulatory definition of wetlands.¹⁵ In 2001, however, the Court struck down the Corps’ “Migratory Bird Rule” pursuant to which the Corps regulated “isolated waters” as “waters of the United States.”¹⁶

Most recently, in *Rapanos v. United States*, the Supreme Court issued an opinion that may ultimately narrow the meaning of “waters of the United States.”¹⁷ In the plurality opinion, Justice Scalia took a narrow view of the phrase. Justice Kennedy, however, took a broader view in his concurring opinion.¹⁸ Circuit courts have since varied in their application of the *Rapanos* opinions.¹⁹

In light of the Supreme Court’s decisions in *SWANNC*, *Riverside Bayview*, and *Rapanos*, in June 2015, the EPA and the Corps issued a rulemaking (the “Clean Water Rule”) to clarify the definition of “waters of the United States” under the CWA.²⁰ Later that year, the United States Court of Appeals for the Sixth Circuit is-

¹⁴58 Fed. Reg. 45008, 45036-45038 (Aug. 25, 1993).

¹⁵*United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121, 134, 106 S. Ct. 455, 88 L. Ed. 2d 419, 23 Env’t Rep. Cas. (BNA) 1561, 16 Env’t L. Rep. 20086 (1985).

¹⁶*Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Eng’rs (SWANCC)*, 531 U.S. 159, 171, 174, 121 S. Ct. 675, 148 L. Ed. 2d 576, 51 Env’t Rep. Cas. (BNA) 1833, 31 Env’t L. Rep. 20382 (2001). In response to SWANCC, the Corps and EPA issued guidance to the field that “the Court’s holding was strictly limited to waters that are ‘nonnavigable, isolated, [and] intrastate.’” Memorandum from Gary S. Guzy, General Counsel, EPA, and Robert M. Anderson, Chief Counsel, the Corps, Regarding Supreme Court Ruling Concerning CWA Jurisdiction over Isolated Waters (Jan. 19, 2001).

¹⁷*Rapanos v. U.S.*, 547 U.S. 715, 126 S. Ct. 2208, 165 L. Ed. 2d 159, 62 Env’t Rep. Cas. (BNA) 1481, 36 Env’t L. Rep. 20116 (2006).

¹⁸See § 13:96 for additional details regarding the *Rapanos v. United States* opinion and its potential effects on the Corps’ wetlands jurisdiction. See also Memorandum from Benjamin Grumbles, EPA & John Woodley, Jr., Department of the Army, Clean Water Act Jurisdiction Following the U.S. Supreme Court’s Decision in *Rapanos v. United States* and *Carabell v. United States* (Dec. 2, 2008), http://www.epa.gov/owow/wetlands/pdf/CWA_jurisdiction_Following_Rapanos120208.pdf.

¹⁹*Compare United States v. Johnson*, 467 F.3d 56, 36 Env’t L. Rep. 20218, 162 O.G.R. 1289 (1st Cir. 2006) (the reasoning of either Scalia’s plurality opinion or Kennedy’s concurring opinion will apply to determine CWA jurisdiction); *United States v. Cundiff*, 555 F.3d 200, 68 Env’t Rep. Cas. (BNA) 1289 (6th Cir. 2009) (holding that federal jurisdiction was appropriate under either) *with United States v. Robison*, 505 F.3d 1208, 65 Env’t Rep. Cas. (BNA) 1385 (11th Cir. 2007) (the reasoning of Kennedy’s concurring opinion will apply to determine CWA jurisdiction).

²⁰Clean Water Rule: Definition of “Waters of the United States,” 80 Fed. Reg. 37054 (June 29, 2015) (to be codified at 33 C.F.R. Pt. 328, 40 C.F.R. Pts. 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401). The final rule defines “waters of the United States” as

(1) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters of which were subject to ebb and flow of the tide; (2) All interstate waters, including interstate wetlands; (3) the territorial seas; (4) All impoundments of waters otherwise identified as waters of the United States under this section; (5) All tributaries as defined in paragraph (c)(3) . . . (6) All waters adjacent to a water identified in (a)(1)-(5) of this section including wetlands, ponds, lakes, oxbows, impoundments and similar waters[.].

80 Fed. Reg. 37054, 37104-105.

sued a nationwide stay of the rule.²¹ After issuing the stay, the Sixth Circuit ruled that it had jurisdiction under the CWA to directly review challenges to the proposed Clean Water Rule.²² The United States Supreme Court reversed and remanded, holding that challenges to the Clean Water Rule must be brought in the federal district courts.²³

On February 28, 2017, President Trump signed the “Executive Order on Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the ‘Waters of the United States’ Rule.”²⁴ The executive order calls on the EPA and the Corps to review the Clean Water Rule and “publish for notice and comment a proposed rule rescinding or revising the rule. . . .” The executive order directs that the EPA and the Corps “shall consider interpreting the term ‘navigable waters’” in a manner “consistent with Justice Scalia’s opinion in *Rapanos*.” In response to the executive order, EPA and the Corps have taken a number of actions. On July 27, 2017, the EPA and the Corps proposed a rule to repeal the Clean Water Rule and replace it with the agencies’ regulations that were in place prior to the Clean Water Rule.²⁵ In addition, the agencies promulgated a final rule that delayed the applicability date of the Clean Water Rule until February 6, 2020.²⁶ The EPA and the Corps actively working on revising the definition of the “waters of the United States,” but, as of the date of this publication, have yet to issue a proposed rule.

§ 13:33 Jurisdictional scope—Point source

The Act regulates the discharge of pollutants from “point sources.”¹ A point source is defined by § 502(14) as “any discernable, confined and discrete conveyance, includ-

The definition also includes Prairie Potholes, Carolina and Delmarva Bays, Poscosins, Western Vernal Pools, and Texas Coastal Prairie Wetlands, where such waters are determined on a case-specific basis to have a significant nexus to a water identified in (1) through (3) above. *Id.* at 37105. Moreover, under the final rule “waters of the United States” means

[a]ll waters located within the 100-year floodplain of a water identified in (a)(1) through (3) of this section and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in paragraphs (a)(1) through (5) of this section where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs (a)(1) through (3) of this section.

Id.

The final rule clarifies that where waters are adjacent to any waters identified in section (a)(6) of the rule, then the case-specific, significant nexus analysis is not required. *Id.*

²¹In re E.P.A., 803 F.3d 804, 81 Env’t. Rep. Cas. (BNA) 1389, 2015 A.M.C. 2409 (6th Cir. 2015), order vacated, 713 Fed. Appx. 489 (6th Cir. 2018) (finding that the petitions demonstrated a substantial possibility of success on the merits).

²²In re U.S. Dept. of Defense, U.S. E.P.A. Final Rule: Clean Water Rule: Definition of Waters of U.S., 817 F.3d 261, 81 Env’t. Rep. Cas. (BNA) 2165 (6th Cir. 2016), cert. granted, 137 S. Ct. 811, 196 L. Ed. 2d 595 (2017) and rev’d and remanded, 138 S. Ct. 617, 199 L. Ed. 2d 501, 85 Env’t. Rep. Cas. (BNA) 2155, 2018 A.M.C. 29 (2018).

²³National Ass’n of Mfrs. v. Department of Defense, 138 S. Ct. 617, 199 L. Ed. 2d 501, 85 Env’t. Rep. Cas. (BNA) 2155, 2018 A.M.C. 29 (2018). Challenges to the Clean Water Rule are being litigated in district courts. [See e.g., North Dakota et al. v. EPA, No. 3:15-cv-59 (D. N.D. filed June 29, 2015).]

²⁴Exec. Order No. 12778, 82 Fed. Reg. 12497 (Feb. 28, 2017), <https://www.whitehouse.gov/presidential-actions/presidential-executive-order-restoring-rule-law-federalism-economic-growth-reviewing-waters-united-states-rule/>.

²⁵82 Fed. Reg. 34,899 (July 27, 2017). On July 12, 2018, the agencies published a supplemental notice of proposed rulemaking in order to further explain its proposal to repeal the Clean Water Rule and to solicit additional comment. 83 Fed. Reg. 32,227 (July 12, 2018).

²⁶83 Fed. Reg. 5,200 (Feb. 6, 2018). The agencies’ applicability date rule is being challenged in district courts. See e.g., South Carolina Coastal Conservation League et al. v. Pruitt et al., No. 2:18-cv-00330 (D. S.C. filed Feb. 6, 2018).

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¹Section 208 of the Act, discussed in § 13:26, addresses nonpoint sources.

ing but not limited to any pipe, ditch, channel, tunnel, conduit, well, fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft from which pollutants may be discharged.”² The term was expanded by a 1987 amendment to embrace specifically a “landfill leachate collection system.”³

Courts have generally interpreted “point source” expansively to include such things as shipboard guns,⁴ erosion-created ditches and gullies carrying leachate from a spoil pile,⁵ leakage from a waste lagoon,⁶ a bulldozer blade,⁷ net-pen sea farms,⁸ and discharges from industrial factories that are in addition to discharges from irrigated agriculture.⁹ EPA efforts to avoid regulation entirely by exempting classes of hard-to-regulate point sources have been rejected.¹⁰ For example, despite EPA arguments to the contrary, the Sixth Circuit has held that pesticide residue and excess pesticide are subject to regulation under the Act because the application of pesticide constitutes a point source.¹¹

Some courts have refused to take an expansive view, however. In *National Wildlife Federation v. Gorsuch*,¹² for example, the District of Columbia Circuit overruled a

²The Supreme Court has held that a point source is created even where pollutants originating elsewhere merely pass through the source because it is a conveyance and is, therefore, covered by the NPDES program. *South Fla. Water Mgmt. Dist. v. Miccosukee Tribe of Indians*, 541 U.S. 95, 124 S. Ct. 1537 (2004).

Manure-spreading vehicles, manure-storing fields, and ditches used to store or transfer waste from livestock operations are part of concentrated feeding operations and are, therefore, point sources. *Community Ass’n for Restoration of Env’t v. Henry Bosma Dairy*, 305 F.3d 943, 33 Env’tl. L. Rep. (Env’tl. L. Inst.) 20048 (9th Cir. 2002). An EPA final rule revises and updates the NPDES provisions that define which operations are concentrated animal feeding operations (CAFO) and establishes a mandatory duty for all CAFOs to apply for an NPDES permit and to develop and implement a nutrient management plan. *National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitation Guidelines and Standards for Concentrated Animal Feeding Operations*, 68 Fed. Reg. 7175 (Feb. 12, 2003) (40 C.F.R. Part 9, 122-23, 412). The EPA continues to defer certain NPDES permit requirements for CAFOs in order to propose new rules for CAFOs. *See* 72 Fed. Reg. 40245 (July 27, 2007).

³Pub. L. No. 100-4, § 507, 101 Stat. 78.

⁴*Romero-Barcelo v. Brown*, 643 F.2d 835, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20391 (1st Cir. 1981), *rev’d and remanded on other grounds sub nom. Weinberger v. Romero-Barcelo*, 456 U.S. 305, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20538 (1982).

⁵*Sierra Club v. Abston Constr. Co.*, 620 F.2d 41, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20552 (5th Cir. 1980).

⁶*United States v. Oxford Royal Mushroom Prods., Inc.*, 487 F. Supp. 852, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20549 (E.D. Pa. 1980).

⁷*Avoyelles Sportsmen’s League v. Alexander*, 473 F. Supp. 525, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20315 (W.D. La. 1979), *aff’d sub nom. Avoyelles Sportsmen’s League, Inc. v. Marsh*, 715 F.2d 897, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20942 (5th Cir. 1983).

⁸*U.S. Public Interest Research Group v. Atlantic Salmon of Maine, LLC.*, 215 F. Supp. 2d 239, 249-255 (D. Me. 2002).

⁹*Pacific Coast Federation of Fisherman’s Ass’ns v. Glaser*, No. CIV S-2:11-2980-KJM-CKD, 2013 WL 4230266, *13, 77 ERC 1945 (E.D. Cal. Sept. 16, 2013) (holding that the point source exemption “return flows from irrigated agriculture” does not extend to additional discharges unrelated to crop production).

¹⁰*See Nat. Res. Def. Council, Inc. v. Costle*, 568 F.2d 1369, 8 Env’tl. L. Rep. (Env’tl. L. Inst.) 20028 (D.C. Cir. 1977).

¹¹*Nat’l Cotton Council of America v. U.S. E.P.A.*, 553 F.3d 927, 940, 68 Env’t Rep. Cas. (BNA) 1129 (6th Cir. 2009).

¹²*Wildlife Fed’n v. Gorsuch*, 693 F.2d 156, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20015 (D.C. Cir. 1982), *rev’g* 530 F. Supp. 1291, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20268 (D.D.C. 1982). *But cf. S.D. Warren Co. v. Maine Bd. of Env’tl. Protection*, 547 U.S. 370, 36 Env’tl. L. Rep. (Env’tl. L. Inst.) 20089 (2006) (holding that discharges from dams are subject to regulation under the FWPCA, as discussed in § 13:34).

lower court decision that had held dams were point sources.¹³ Similarly, *United States v. Plaza Health Lab., Inc.*,¹⁴ although a criminal case, held that a human being was not a point source under the Act.¹⁵ Cows and other “inherently mobile” animals are also not point sources.¹⁶ The Ninth Circuit has held that “a system of ditches, culverts, and channels” collecting stormwater alongside logging roads is a point source¹⁷ and that, absent EPA guidance, the discharge of stormwater from utility poles is not a point source.¹⁸

§ 13:34 Jurisdictional scope—Discharge

The “discharge” of a pollutant requires the “addition” of that pollutant to water from a point source, vessel, or other floating craft.¹ EPA’s interpretive position has been that for an “addition” to occur a point source must introduce a pollutant into a water body from the “outside world.”² In *National Wildlife Federation v. Gorsuch*, the D.C. Court of Appeals found that EPA’s “outside world” interpretation of “addition” was not manifestly unreasonable.³ In *S.D. Warren Co. v. Maine Board of Environmental Protection*, however, the Supreme Court interpreted “discharge” to include water that is chemically, physically, biologically or radiologically altered when its flow is slowed by a dam and held that water flowing through a dam is subject to regulation under the Act.⁴

In *South Florida Management District v. Miccosukee Tribe of Indians*, a case

¹³The court relied primarily on legislative intent to limit the impact of the Act on water projects, as evidenced by § 101(g) of the Act, 33 U.S.C.A. § 1251(g), and deference to EPA’s administrative interpretation, which had, however, not been consistent. See Stever, *Deference to Administrative Agencies in Federal Environmental, Health and Safety Litigation—Thoughts on Varying Judicial Application of the Rule*, 6 W. New Eng. L. Rev. 35, 63 (1983).

¹⁴*United States v. Plaza Health Lab., Inc.*, 3 F.3d 643, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 21526 (2d Cir. 1993), *cert. denied sub nom.* *United States v. Villegas*, 62 U.S.L.W. 3861 (June 27, 1994) (No. 93-1572).

¹⁵After analyzing the Act, its legislative history, and caselaw concerning the definition of “point source,” the court concluded that because the Act was, at best, ambiguous as to the definition, the rule of lenity ultimately required the court to reverse the defendant’s conviction.

¹⁶See, e.g., *Oregon Nat. Desert Ass’n v. Dombeck*, 172 F.3d 1092, 1099 (9th Cir. 1998). A district court held that a cruise terminal is not a point source. *Puget Soundkeeper Alliance v. Cruise Terminals of America, LLC*, No. C14-0476JCC, 2015 WL 7431415, *7, 81 ERC 2144 (W.D. Wash. Nov. 20, 2015).

¹⁷*Northwest Environmental Defense Center v. Decker*, 728 F.3d 1085 (9th Cir. 2013).

¹⁸*Ecological Rights Foundation v. Pacific Gas and Elec. Co.*, 713 F.3d 502, 509-10, 76 Env’t Rep. Cas. (BNA) 1618, 83 A.L.R. Fed. 2d 611 (9th Cir. 2013).

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¹CWA § 502(12), 33 U.S.C.A. § 1362(12).

²See *U.S. ex rel. Tennessee Valley Authority v. Tennessee Water Quality Control Bd.*, 717 F.2d 992, 998, 19 Env’t Rep. Cas. (BNA) 1826, 14 Env’tl. L. Rep. 20598, 20601 (6th Cir. 1983); *Nat’l Wildlife Federation v. Gorsuch*, 693 F.2d 156, 175, 18 Env’t Rep. Cas. (BNA) 1105, 13 Env’tl. L. Rep. 20015 (D.C. Cir. 1982).

³*Nat’l Wildlife Federation v. Gorsuch*, 693 F.2d 156, 175, 18 Env’t Rep. Cas. (BNA) 1105, 13 Env’tl. L. Rep. 20015 (D.C. Cir. 1982).

⁴*S.D. Warren Co. v. Maine Board of Environmental Protection*, 547 U.S. 370, 36 Env’tl. L. Rep. (Env’tl. L. Inst.) 20089 (2006); see also *Catskill Mountains Chapter of Trout Unlimited, Inc. v. City of New York*, 451 F.3d 77, 36 Env’tl. L. Rep. (Env’tl. L. Inst.) 20111 (2d Cir. 2006) (finding that distinct body of water containing pollutants, which is transferred to another water body, constitutes an “addition” of pollutant thus triggering CWA permit requirement); *Catskill Mountains Chapter of Trout Unlimited, Inc. v. City of New York*, 273 F.3d 481 (2d Cir. 2001) (same); *Greenfield Mills, Inc. v. O’Bannon*, 189 F. Supp. 2d 893, 912 (N.D. Ind. 2002), *aff’d in part, rev’d in part and remanded by* 361 F.3d 934, 34 Env’tl. L. Rep. (Env’tl. L. Inst.) 20022 (7th Cir. 2004) (Despite granting defendants’ motion for summary judgment, the court found that “[p]laintiffs’ claim that sediment which is actively excavated and replaced into the same body of water constitutes a ‘discharge of a pollutant’ requiring a § 402 permit has some teeth.”).

involving the transfer of polluted water through a pump system into a less polluted body of water, the Supreme Court held that the “discharge of a pollutant” includes “point sources” through which pollutants merely pass.⁵ That is to say, point sources need not generate pollutants, they “need only convey pollutants into navigable waters to be subject to the Act.”⁶ EPA subsequently issued its “water transfers rule” clarifying that “water transfers are not subject to regulation under the [NPDES] permitting program.”⁷ The rule defines water transfers “as an activity that conveys or connects waters of the United States without subjecting the transferred water to intervening industrial, municipal, or commercial use.”⁸

The “addition” language in the definition is the source of EPA’s “net-gross” policy, which is discussed in § 13:62.

In addition to the statutorily exempt discharges, EPA has administratively exempted “indirect dischargers” from regulation except under the pretreatment program. “Indirect dischargers” are persons who discharge to a publicly owned treatment works.⁹ The Agency has also administratively excluded authorized discharges to private treatment works,¹⁰ discharges of dredged or fill material regulated under § 404 and certain marine discharges,¹¹ along with discharges directed pursuant to § 311 or pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act,¹² from the NPDES permit program.

Generally speaking, the CWA does not require NPDES permits for discharges to groundwater.¹³ However, courts are split over whether NPDES permits are required for discharges to groundwater that migrate to surface waters within the jurisdictional reach of the CWA. The Fifth and Seventh Circuits have held that no NPDES permitted is required for discharges to groundwater even where the discharge reaches surface waters.¹⁴ More recently, however, the Fourth and Ninth Circuits have reached the opposite conclusion; holding that, under the factual circumstances at issue in each case, the CWA regulates discharges to groundwater that eventually reach CWA jurisdictional waters.¹⁵ On February 20, 2018, EPA published a notice in the federal register asking for public comment on whether and to what extent the

⁵South Florida Water Management Dist. v. Miccosukee Tribe of Indians, 541 U.S. 95, 105, 124 S. Ct. 1537, 158 L. Ed. 2d 264, 58 Env’t Rep. Cas. (BNA) 1001, 34 Env’t. L. Rep. 20021 (2004).

⁶73 Fed. Reg. 33697, 33702 n.7 (June 13, 2008) (citation omitted).

⁷73 Fed. Reg. 33697 (June 13, 2008).

⁸73 Fed. Reg. 33697 (June 13, 2008).

⁹40 C.F.R. § 122.3.

¹⁰40 C.F.R. § 122.3(g).

¹¹40 C.F.R. § 122.3(b), 3(a).

¹²40 C.F.R. § 122.3(d).

¹³The 2015 Clean Water Rule explicitly excludes groundwater from the definition of “waters of the United States.” 80 Fed. Reg. 37,054, 37,055 (June 29, 2015). *See* Sierra Club v. Virginia Elec. and Power Co., 145 F. Supp. 3d 601 (E.D. Va. 2015), stay pending appeal denied, 2016 WL 5349081 (E.D. Va. 2016) (finding that a plaintiff presents a claim for relief under the CWA where there is a discharge of pollutants to surface waters through hydrologically connected groundwater); *Yadkin Riverkeeper, Inc. v. Duke Energy Carolinas, LLC*, 141 F. Supp. 3d 428 (M.D. N.C. 2015), motion to certify appeal denied, 2016 WL 6783918 (M.D. N.C. 2016) (finding that the CWA regulates the discharge of pollutants to navigable waters via groundwater); *see also* *Hawai’i Wildlife Fund v. County of Maui*, 2015 WL 1608430 (D. Haw. 2015) (holding that the Lahaina Wastewater Reclamation Facility required an NPDES permit because the treated wastewater has been detected in the nearshore waters of the Pacific Ocean).

¹⁴*Rice v. Harken Exploration Co.*, 250 F.3d 264, 52 Env’t. Rep. Cas. (BNA) 1321, 31 Env’t. L. Rep. 20599, 154 O.G.R. 180 (5th Cir. 2001); *Village of Oconomowoc Lake v. Dayton Hudson Corp.*, 24 F.3d 962, 38 Env’t. Rep. Cas. (BNA) 1760, 24 Env’t. L. Rep. 21080 (7th Cir. 1994).

¹⁵*Upstate Forever v. Kinder Morgan Energy Partners*, No. 17-1640 (4th Cir. April 12, 2018) (holding that release of gasoline from a ruptured pipeline that traveled 1000 feet via groundwater into a

EPA should regulate discharges via groundwater that have a hydrologic connection to surface waters regulated under the CWA, signalling that the EPA may commence rulemaking on this topic.¹⁶

§ 13:35 Jurisdictional scope—Pollutant

The Act contains a general definition of “pollutant” in § 502(6), and also defines “toxic pollutant” in § 502(13), the latter definition for the purpose of § 307.¹ “Pollutant” is defined as “dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials,² heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal and agricultural waste discharged into water.”³

Although the term is exceedingly broad,⁴ EPA has chosen to regulate pollutant discharges somewhat selectively. For many years, for example, the Agency did not address storm sewer discharges that did not contain sewage. That changed in 1987 when Congress passed the Water Quality of Act of 1987 regulating stormwater discharges.⁵ The Agency was also slow to develop separate effluent limitations for many toxic pollutants present in relatively small amounts in many industrial discharges.⁶

stream was an ongoing point source discharge); *Hawaii Wildlife Fund v. County Of Maui*, No. 15-17447 (9th Cir. Feb. 1, 2018) (holding that point source discharges to groundwater are subject to the CWA, where the ultimate discharge of pollutants to surface waters is “fairly traceable” to point sources). *See also* *Sierra Club v. Virginia Elec. and Power Co.*, 145 F. Supp. 3d 601 (E.D. Va. 2015), stay pending appeal denied, 2016 WL 5349081 (E.D. Va. 2016) (finding that a plaintiff presents a claim for relief under the CWA where there is a discharge of pollutants to surface waters through hydrologically connected groundwater); *Yadkin Riverkeeper, Inc. v. Duke Energy Carolinas, LLC*, 141 F. Supp. 3d 428 (M.D. N.C. 2015), motion to certify appeal denied, 2016 WL 6783918 (M.D. N.C. 2016) (finding that the CWA regulates the discharge of pollutants to navigable waters via groundwater).

¹⁶83 Fed. Reg. 7,126 (Feb. 20, 2018).

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¹The statute also has a definition of “pollution.” Section 502(19) defines this term as “the man-made or man-induced alteration of the chemical, physical, biological or radiological integrity of water.” 33 U.S.C.A. § 1362(19). This term was relied upon by the court in *FMC Corp. v. Train*, 539 F.2d 973, 6 Env’t L. Rep. (Env’t L. Inst.) 20382 (4th Cir. 1976) in upholding effluent limitations for “chemical oxygen demand” (cod), in the absence of a showing that this pollutant caused “harm.”

²EPA administratively excluded most radioactive waste materials from its regulatory program in view of overlapping jurisdiction of the Nuclear Regulatory Commission. This exclusion was upheld in *Train v. Colorado Pub. Interest Research Group*, 426 U.S. 1, 6 Env’t L. Rep. (Env’t L. Inst.) 20549 (1976).

³Specifically exempted are “sewage from vessels,” which is regulated separately under § 312 of the Act, 33 U.S.C.A. § 1322, and materials injected into wells to facilitate oil and gas production or oil and gas production water injected into wells where regulated by the state.

⁴Chlorine and alum added by the City of New York to water pumped from the Hudson River to make it potable have been held to be “pollutants” when backwashed into reservoirs. *Hudson River Fishermen’s Ass’n v. City of N.Y.*, 751 F. Supp. 1088 (S.D.N.Y. 1990), *aff’d without opinion*, 940 F.2d 649 (2d Cir. 1991).

⁵*See* Pub. L. No. 100-4, 101 Stat. 7 (1987); *see also* 40 C.F.R. § 122.26 (requiring permits for certain stormwater discharges). EPA implemented the stormwater discharge permit program in two phases. *Nat. Res. Def. Council v. U.S. E.P.A.*, 526 F.3d 591, 594–99, 66 Env’t Rep. Cas. (BNA) 1948 (9th Cir. 2008). EPA issued Phase I in 1990, which established requirements for construction activities on five acres or more of land. *Nat. Res. Def. Council v. U.S. E.P.A.*, 526 F.3d 591, 595, 66 Env’t Rep. Cas. (BNA) 1948 (9th Cir. 2008). In 1999, EPA issued Phase II, regulating construction activities disturbing one to five acres of land. *Id.* at 598. *See also generally infra* §§ 13:68, 13:69.

⁶*See* *Nat. Res. Def. Council, Inc. v. Train*, 519 F.2d 287, 5 Env’t L. Rep. (Env’t L. Inst.) 20578 (D.C. Cir. 1975), and subsequent developments culminating in *Citizens for a Better Env’t v. Gorsuch*, 718 F.2d 1117 (D.C. Cir. 1983) (upholding district court’s refusal to modify consent decree). *See also*

§ 13:36 The national pollutant discharge elimination program—Statutory scheme

The principal enforcement mechanism of the Act is the National Pollutant Discharge Elimination System (NPDES) permit program, established by § 402 of the Act.¹ Section 301(a) makes it unlawful to discharge a pollutant from a point source *without a permit*,² and § 402 lays the groundwork for the NPDES program. Although a number of other federal agencies, most notably FERC and the Nuclear Regulatory Commission, address water quality issues generally in their licensing activities, the Act contains the superior authority.³

NPDES permits can be developed by EPA, the Corps, states, or Indian tribes.⁴ State programs came on line starting in 1974, and the majority of states now administer NPDES programs.⁵ EPA separately issues federal NPDES permits to dischargers in states that have not sought and received NPDES authority pursuant to § 402(b). That provision sets forth the minimum substantive authority states must meet,⁶ along with the minimum enforcement authority they must have,⁷ and several special requirements relating to publicly owned treatment works.⁸

Most of the “first round” NPDES permits⁹ were issued by EPA and contained single-number effluent limitations for pollutant parameters affecting pollutants identified in the permit application as emanating from the source, and for which

generally infra §§ 13:77, 13:79-13:82.

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¹33 U.S.C.A. § 1342. *See generally* U.S. EPA, National Pollutant Discharge Elimination System, NPDES Permit Program Basics Frequently Asked Questions, http://cfpub.epa.gov/npdes/faqs.cfm?program_id=45.

²Discharges of dredged or fill material are permitted under § 404. Oil discharges are flatly prohibited by § 311. Marine sanitation devices (vessel wastes) are subject to special treatment under § 312.

³*See* Nat'l Wildlife Federation v. Consumers Power Co., 862 F.2d 580, 28 Env't Rep. Cas. (BNA) 1572, 19 Env'tl. L. Rep. 20235 (6th Cir. 1988); Monongahela Power Co. v. Marsh, 809 F.2d 41, 17 Env'tl. L. Rep. 20422 (D.C. Cir. 1987).

⁴*See* U.S. EPA, Regulatory Information, Rules and Regulations Implemented under the Safe Drinking Water Act, Rules and Regulations Implemented under the Clean Water Act, <http://water.epa.gov/lawsregs/rulesregs/>.

⁵*See* U.S. EPA, National Pollutant Discharge Elimination System (NPDES), State and Tribal Program Authorization Status, <http://cfpub.epa.gov/npdes/statestribes/astatus.cfm>. State NPDES permit programs are implemented through 40 C.F.R. § 1.

⁶States must have authority to issue permits that apply, and insure compliance with, any applicable requirements of §§ 301, 302, 306, 307, and 403; are for fixed terms not exceeding five years; . . . can be terminated or modified for cause for . . . violation of any condition of the permit, obtaining a permit by misrepresentation or failure to disclose fully all material facts, [and] change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge;” and which “control the disposal of pollutants into wells.”

⁷Their laws must be adequate to issue permits that “apply, and assure compliance with, all applicable requirements of § 308” and to provide inspection, monitoring and reporting requirements at least as stringent as those contained in § 308, provide for public notice and opportunity for public hearings prior to permit issuance, provide for notice of permit applications to EPA, provide notice and opportunity for input by other states whose waters may be affected, provide for denial in the case of certain impediments to the navigation rights of the public, and provide for injunctive relief and both civil and criminal penalties. EPA’s decision not to require state programs to provide for the federal maximum civil and criminal penalties has been upheld. *See* Nat. Res. Def. Council, Inc. v. EPA, 859 F.2d 156, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20016 (D.C. Cir. 1988).

⁸Essentially, these provisions seek to ensure that delegated state programs will address industrial contributors to publicly owned treatment works in a way that is consistent with § 307(b)’s pretreatment scheme.

⁹“First round” permits were issued to existing dischargers roughly for the period from 1972 to 1977.

EPA had the technical knowledge to fashion effluent limitations.¹⁰ Most of the effluent limits for industrial dischargers¹¹ were based upon “best professional judgment” effluent criteria rather than generally applicable effluent guidelines, which were not promulgated for most source categories until well after the first round permits had been issued.¹² The first round permits also contained compliance schedules by which the source was to install pollution control equipment sufficient to achieve the effluent limitations contained in the permits.¹³

State programs started to come on line in 1974, and the number of approved state programs steadily increased throughout the 1970s. Currently, more than three-quarters of states administer approved NPDES programs.

There are individual and general NPDES permits under § 402.¹⁴ Each individual permit is tailored to an individual discharger’s particular operations.¹⁵ General permits, on the other hand, are designed to cover a class or category of discharger operations. Examples of general permits include the Vessels General Permit, the Multi-Sector General Permit, and the Construction General Permit.¹⁶

§ 13:37 The national pollutant discharge elimination program—State certification—Section 401

Section 401(a) requires every “applicant for a federal license or permit to conduct any activity . . . which may result in any discharge to navigable waters” to present the federal licensing entity a certification from the state wherein the discharge originates¹ that the discharge will comply with the applicable provisions of the Act.² Failure or refusal of a state to act on a request for certification within a “reasonable

¹⁰Exotic toxic pollutants were largely unaddressed in the first round permits.

¹¹Permits issued to POTWs contained effluent limitations sufficient to meet EPA’s formulation of secondary treatment.

¹²Of course, some permits contained water-quality-based effluent limitations, since the Act preserved the old water quality standards approach as a more stringent alternative to technology-based effluent limits.

¹³Current and historical information on EPA’s issuance and use of technology based limitations and best professional judgment standards is available through EPA’s website. *See* U.S. EPA, Water Quality Standards History, Statutory History, available at <http://water.epa.gov/scitech/swguidance/standards/history.cfm>; U.S. EPA, National Pollutant Discharge Elimination System (NPDES), Water Quality and Technology-Based Permitting, available at http://cfpub.epa.gov/npdes/generalissues/watertechnology.cfm?program_id=45; U.S. EPA, Water: Industry Effluent Guidelines, Frequent Questions, available at http://water.epa.gov/scitech/wastetech/guide/questions_index.cfm. For more information on effluent standard and limitations, *see infra* §§ 13:48-13:83.

¹⁴*See* U.S. EPA, Regulatory Information, Rules and Regulations Implemented under the Safe Drinking Water Act, Rules and Regulations Implemented under the Clean Water Act, <http://water.epa.gov/lawsregs/rulesregs/>.

¹⁵*See* <http://water.epa.gov/lawsregs/rulesregs/>; *see also* U.S. EPA, National Pollutant Discharge Elimination System (NPDES), Accessing Individual NPDES Permits and Fact Sheet through Envirofacts, <http://cfpub.epa.gov/npdes/permitissuance/permitscanning.cfm>.

¹⁶*See* U.S. EPA, Regulatory Information, Rules and Regulations Implemented under the Safe Drinking Water Act, Rules and Regulations Implemented under the Clean Water Act, <http://water.epa.gov/lawsregs/rulesregs/>. *See also* U.S. EPA, National Pollutant Discharge Elimination System (NPDES), Vessel Discharges, http://cfpub.epa.gov/npdes/home.cfm?program_id=350 (last visited June 22, 2014); U.S. EPA, National Pollutant Discharge Elimination System (NPDES), EPA’s Multi-Sector General Permit (MSGP), <http://cfpub.epa.gov/npdes/stormwater/msgp.cfm>; U.S. EPA, National Pollutant Discharge Elimination System (NPDES), EPA Construction General Permit, <http://cfpub.epa.gov/npdes/stormwater/cgp.cfm#final2008cgp>; U.S. EPA, National Pollutant Discharge Elimination System (NPDES), NPDES General Permit Inventory, <http://cfpub.epa.gov/npdes/permitissuance/genpermits.cfm>.

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¹If an interstate water pollution control entity has jurisdiction, then certification must come from it.

time (which shall not exceed one year)” is deemed a waiver of certification.³ Section 401 applies to *all* federal licenses and permits, including EPA-issued NPDES permits.⁴ States are required to provide for public notice and “to the extent it deems appropriate,” for public hearings.⁵

Section 401(d) provides that a certification, which becomes a condition of the federal permit, may set forth “any effluent limitations and other limitations, and monitoring requirements necessary to assure” that the applicant’s discharge will comply with applicable requirements of the Act “and with any other appropriate requirement under State law.” The Supreme Court has interpreted this language to mean that, “pursuant to § 401, States may condition certification upon any limitations necessary to ensure compliance with state water quality standards,” including “broad, narrative criteria based on, for example, ‘aesthetics.’”⁶

How to challenge a state certification or denial of certification was the subject of litigation during the first round of NPDES permit issuance. The primary issue raised in connection with § 401 was whether state actions were challengeable in federal court. Though some courts have held that § 401 certifications are matters of state law, subject to judicial review, if at all, in state court,⁷ other federal courts have reviewed challenges to CWA permits based on the CWA’s state certification requirement.⁸

§ 13:38 The national pollutant discharge elimination program— Standards, criteria, and conditions

EPA’s substantive NPDES permit program regulations are published at 40 C.F.R.

²33 U.S.C. § 1341(a)(1). In the Ninth Circuit, cattle grazing is not subject to the certification requirement of § 401 of the Clean Water Act. *See Oregon Nat. Desert Ass’n v. Dombeck*, 172 F.3d 1092 (9th Cir. 1998).

³*New York State Department of Environmental Conservation v. Federal Energy Regulatory Commission*, 884 F.3d 450, 85 Env’t. Rep. Cas. (BNA) 2703 (2d Cir. 2018) (held that § 401 creates a bright-line one-year limit on the state’s right to certify compliance with the CWA). Federal agencies can proscribe a “reasonable time” for certification that is less than the statutory outerlimit of one year. *See* 33 C.F.R. § 325.2(b)(1)(ii) (Corps regulations governing 401 certification, which states that “[a] waiver may be explicit, or will be deemed to occur if the certifying agency fails or refuses to act on a request for certification within sixty days after receipt of such a request unless the district engineer determines a shorter or longer period is reasonable for the state to act.”).

⁴Each federal agency, including EPA, provides procedures for meeting the certification obligation as a component of its procedural regulations. EPA’s regulations are published at 40 C.F.R. Part 121.

⁵The Seventh Circuit Court of Appeals held in *Consolidation Coal Co. v. EPA*, 537 F.2d 1236 (7th Cir. 1976) that an adjudicatory hearing was required before the insertion of a material condition in an NPDES permit by a state, and that if the state did not provide for such a hearing, the federal permit issuer would have to do so. The Supreme Court’s subsequent holding in *Costle v. Pacific Legal Found.*, 445 U.S. 198, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20225 (1980), modifies the force of this decision to *opportunity* for an adjudicatory hearing.

⁶PUD No. 1 of *Jefferson County v. Washington Dept. of Ecology*, 511 U.S. 700, 713–14, 716, 114 S. Ct. 1900, 128 L. Ed. 2d 716, 38 Env’t Rep. Cas. (BNA) 1593, 152 Pub. Util. Rep. 4th (PUR) 190, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20945 (1994).

⁷*See Sun Enterprises, Ltd. v. Train*, 532 F.2d 280, 8 Env’t Rep. Cas. (BNA) 1891, 6 Env’tl. L. Rep. 20331 (2d Cir. 1976); *Mobil Oil Corp. v. Kelley*, 426 F. Supp. 230, 9 Env’t Rep. Cas. (BNA) 1545 (S.D. Ala. 1976); *Town of Sutton v. Water Supply and Pollution Control Commission*, 116 N.H. 154, 355 A.2d 867, 8 Env’t Rep. Cas. (BNA) 2085 (1976). *But see* *Power Authority of State of N. Y. v. Department of Environmental Conservation of State of N. Y.*, 379 F. Supp. 243 (N.D. N.Y. 1974).

⁸*See, e.g., Airport Communities Coal. v. Graves*, 280 F. Supp. 2d 1207 (W.D. Wash. 2003) (holding that the Corps was not obligated to include state conditions to a permit issued more than one year after a request for the State’s certification).

Part 122, which governs general program requirements,¹ permit application and special program requirements,² standard permit conditions,³ and regulations dealing with permit transfer, modification, revocation and reissuance, and termination.⁴ Most of the Part 122 requirements are equally applicable to state- or EPA-issued permits.⁵

§ 13:39 The national pollutant discharge elimination program—Standards, criteria, and conditions—Exclusions

EPA's NPDES regulations exclude a number of potential sources of water pollution from the requirement that a permit be secured. Some of the excluded sources simply reflect statutory exemptions, such as those for irrigation return flows,¹ dredge or fill material,² discharges into POTW or privately owned treatment works which have permits,³ and discharges from nonpoint sources of pollution.⁴ However, the Ninth Circuit, in *Northwest Environmental Advocates v. EPA*,⁵ affirmed the Northern District Court of California's vacation of 40 C.F.R. § 122.3(a), which previously exempted vessel discharges from NPDES permitting. In response, EPA developed a permitting program to cover discharges from certain vessels.⁶

A final exclusion, 40 C.F.R. § 122.3(d), relates to discharges authorized by government officials pursuant to oil or hazardous substance cleanup activities undertaken pursuant to § 311 of the Act (for oil) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

§ 13:40 The national pollutant discharge elimination program—Standards, criteria, and conditions—Permit duration

NPDES permits are for five years, after which a new permit must be secured or the discharge must cease. Expired EPA-issued permits continue in force, however,

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¹These are found in subpart A, which includes definitions, exclusions, prohibitions, effect of a permit, continuation of existing permits, and confidentiality. 40 C.F.R. §§ 122.1-122.7.

²These are found in subpart B, which includes permit application requirements, who must be the signatory, and special regulations covering concentrated animal feedlots, aquaculture, separate storm sewers, silvicultural activities, general permits and provisions relating to new sources and new dischargers. 40 C.F.R. §§ 122.21-122.29.

³Contained in subpart C. 40 C.F.R. §§ 122.41-122.50.

⁴Contained in subpart D. 40 C.F.R. §§ 122.61-122.64.

⁵*Northwest Environmental Advocates v. U.S. E.P.A.*, 537 F.3d 1006 (9th Cir. 2008). The NPDES regulations were largely upheld in the face of a broad-based challenge in *Nat'l Res. Def. Council, Inc. v. EPA*, 859 F.2d 156, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20016 (D.C. Cir. 1988). However, the court struck down provisions allowing the Agency to consider non-water-quality conditions when issuing pollutant discharge permits, as opposed to when preparing general new source standards. The court also held that EPA acted arbitrarily in refusing to recognize the upset defense for violations of water-quality-related standards solely because the defense would be difficult for dischargers to establish.

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¹40 C.F.R. § 122.3(f).

²40 C.F.R. § 122.3(b).

³40 C.F.R. § 122.3(c), (g).

⁴40 C.F.R. § 122.3(e). Not exempt are discharges from concentrated animal feeding operations, aquatic animal feeding operations, aquacultural operations, and certain silvicultural operations.

⁵*Northwest Env'tl. Advocates v. EPA*, 537 F.3d 1006, 38 Env'tl. L. Rep. (Env'tl. L. Inst.) 20183 (9th Cir. 2008).

⁶*See, e.g.*, U.S. EPA, National Pollutant Discharge Elimination System (NPDES), Vessel Discharges Overview, http://cfpub.epa.gov/npdes/home.cfm?program_id=350.

by virtue of 5 U.S.C.A. § 558(c) until a new permit is issued, provided the applicant has submitted a complete application for a new permit at least 180 days before the expiration date¹ and failure to issue the new permit is not due to the fault of the applicant.² Continuation of state-issued permits or continuation of EPA-issued permits in states that secured NPDES authority between the date of issuance and the date of expiration is governed by state law.³

Where a permit has expired yet remained in force and the permittee is in violation of one or more of its terms, EPA may enforce the terms of the expired permit, deny a new permit for cause, issue a new permit with enforcement conditions, or terminate the permit as provided in the applicable regulations.⁴

**§ 13:41 The national pollutant discharge elimination program—
Standards, criteria, and conditions—Application requirements**

The contents of NPDES permit applications for various types of regulated dischargers are governed by 40 C.F.R. § 122.21 and Appendix D thereto. Initially, EPA did not require extensive effluent testing as a part of the application process. Beginning in 1980, however, the Agency began requiring renewal permit applicants to test for a wide range of toxic constituents that had previously not been specifically addressed in the NPDES program. Section 122.21(g) requires a manufacturing, mining, commercial, or silvicultural discharger to state in the application whether it “knows or has reason to believe” that its discharge contains any of the constituents listed in various sections of Appendix D either in any concentration, or above specified concentrations, depending upon the nature of the constituent.¹ If the applicant identifies one of the Appendix D constituents, the regulations require that it provide quantitative information in its possession, or develop quantitative data, about the constituent; in other words, that it test the effluent for the presence of the substance.² A renewal permit applicant must submit effluent data on toxic pollutants at the same time it submits its renewal application—180 days before the permit expiration date—and not some months afterward, as had been the practice under prior regulations.³

NPDES permit applications are required to be signed by individuals who fall within specified categories of authority set forth in 40 C.F.R. § 122.22. For corporations, for example, the signatory must be a “responsible corporate officer,” defined to be limited to corporate officers in charge of a “principal business function” or a manager of a major manufacturing unit.⁴ The signing person is required to certify under oath that the document is correct and is exposed to significant civil and criminal penalties in the event the document is incomplete or contains false or mislead-

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¹40 C.F.R. §§ 122.6(a), 122.21(c). Section 122.6(a) was upheld in *Nat. Res. Def. Council, Inc. v. EPA*, 859 F.2d 156, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20016 (D.C. Cir. 1988).

²40 C.F.R. § 122.6(a)(2).

³40 C.F.R. § 122.6(d). The regulation provides that if state law does not provide for continuation of expired permits, the facility is deemed to be operating without a permit for federal law purposes between the expiration date and the date a new state permit is effective.

⁴40 C.F.R. § 122.6(c).

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¹The threshold for reporting was hotly contested during EPA's rulemaking.

²40 C.F.R. § 122.21(g)(8) exempts certain “small businesses” from the expensive testing requirement for toxics.

³40 C.F.R. §§ 122.21, 123.62 (withdrawing authority of NPDES program directors to grant case-by-case extensions).

⁴For the specific requisites, see 40 C.F.R. § 122.22(a).

ing material.⁵

**§ 13:42 The national pollutant discharge elimination program—
Standards, criteria, and conditions—General permits**

EPA has chosen not to require individual NPDES permits for certain kinds of activities that arguably require a permit under the statute, but instead has “by rule” generally permitted such activities, although the Act does not clearly authorize such permits. 40 C.F.R. § 122.28 specifies the types of activities covered by general permits.¹ For one type of point source, offshore oil and gas facilities, EPA has issued federal-only general permits.² Stormwater discharges are subject to general permitting either by EPA or the states.³ The regulations contain provisions for requiring individual permits in special cases for specific sources that might otherwise be generally permitted.⁴

**§ 13:43 The national pollutant discharge elimination program—
Standards, criteria, and conditions—Permit terms**

Certain standard conditions, set out in 40 C.F.R. § 122.41, are inserted in all NPDES permits, whether issued by EPA or a state agency. Some of these conditions are enforcement-related and others impose substantive standards or procedural requirements.¹ The standard conditions are not waivable or modifiable.

Although all of the general conditions are potentially significant to dischargers, several deserve specific discussion. 40 C.F.R. §§ 122.41(j) and 122.41(l)(4) require

⁵The certification language is set forth at 40 C.F.R. § 122.22(d). See CWA § 309(c)(2), 33 U.S.C.A. § 1319(c)(2), for penalties.

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¹These are primarily stormwater discharges, which are specifically referenced in the regulation. The Agency will, however, consider other types of sources for general permit treatment if they involve the same or similar types of operations, discharge the same types of wastes, require the same types of effluent limitations or operating conditions, require the same or similar monitoring, and are more appropriately controlled by a general permit than individual source-by-source permits. *See* 40 C.F.R. § 122.28(a)(2)(ii).

²States are prohibited from taking delegated authority to regulate these sources.

³Stormwater discharges have been controversial. The subject is treated in a separate section below.

⁴*See* 40 C.F.R. § 122.28(b)(2). An individual permit may be sought by petition filed by an “interested person” with respect to a specific discharge. The grounds for requiring an individual permit include (1) that the discharge is a significant contributor of pollution in terms of its quantity and characteristics; (2) the discharger is not in compliance with the general permit conditions; (3) there has been a change in the availability of abatement technology; (4) effluent guidelines covering the source category have been promulgated; (5) a water quality management plan covering the sources has been approved; or (6) the source ceases to qualify for general permitting under the criteria for eligibility, which are set forth at 40 C.F.R. § 122.28(a). *See* 40 C.F.R. § 122.28(b)(2)(i). There are special rules for EPA-issued general permits and for offshore oil facilities. *See* 40 C.F.R. §§ 122.28(b)(ii), 122.28(c).

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¹The subjects of the standard conditions are (1) duty to comply; (2) duty to reapply; (3) need to halt or reduce activity not a defense to an enforcement action; (4) duty to mitigate harm in the event of a violation; (5) duty of proper operation and maintenance; (6) a statement of the revocation, reissuance, modification and revocation powers; (7) a statement that the permit does not create a property right; (8) a duty to provide information; (9) authorization for inspection and entry; (10) monitoring and recordkeeping requirements, prescribing the signatory; (11) reporting requirements, for such occurrences as process changes, anticipated noncompliance, transfer of ownership, mandatory discharge monitoring reporting, and actual incidents of noncompliance; (12) limitations on bypassing treatment facilities; and (13) rules relating to “upsets” of the treatment process.

discharge monitoring reports (DMRs) to be made.² The requirement of self-monitoring is significant since citizen enforcement actions can be mounted and proven based on these documents and thus are inexpensive for the plaintiffs. Proof based on a permittee's own DMR is, in addition, strong, since the DMRs are arguably an admission. Challenge to the truthfulness of one's DMRs may open one to charges that other provisions of the regulations were violated.

The "upset"³ and "bypass"⁴ provisions are also worthy of special mention. EPA chose, for reasons of administrative convenience, to treat the problem of unavoidable exceedances of the effluent limitations as permit-related enforcement matters rather than build upset and bypass provisions into all of the substantive effluent guidelines.⁵ The upshot of EPA's treatment of these two types of anticipated exceedances of the effluent limitations is to place the burden of proof that any given exceedance was an unavoidable upset or bypass on the permittee as an affirmative defense to an enforcement action rather than recognize them as an inherent, authorized part of a treatment scheme.

Section 122.41(n)(3) specifies the terms upon which an upset may be raised as a defense to an enforcement action alleging a permit violation. The cause of what is truly an upset must be identified, the facility must have been properly operated at the time, requisite reports filed, and required remedial measures taken.⁶

Bypasses are prohibited under § 122.41(m) unless required to prevent "loss of life, personal injury or severe property damage," where there are no "feasible alternatives," as defined, and the permittee has submitted notice as required by the regulation.⁷

Permits also may contain additional general terms, established by the permit writer to incorporate state law-based requirements,⁸ and there are special conditions relating to toxic constituents in the effluent of manufacturing, commercial, mining, and silvicultural dischargers and special notice requirements for POTW that relate to the volume and character of waste streams contributed by indirect dischargers.⁹

The core of an NPDES permit is, of course, the effluent limitations contained in it that apply to each outfall¹⁰ of a source. These are generally single numbers expressed in the terms of the applicable guidelines. Since permits are in part enforcement devices, they may also contain compliance schedules and other enforcement-related

²DMRs are governed, as to the methodology for monitoring, by 40 C.F.R. Part 136.

³An "upset" involves a failure of waste treatment equipment to operate at the level required by the EPA regulations, for reasons beyond the operator's control.

⁴"Bypass" refers to the necessity, from time to time, to route wastes around all portions of a treatment system so that operators can perform maintenance on it.

⁵EPA's choice on this issue was narrowly upheld in *American Petroleum Inst. v. EPA*, 661 F.2d 340, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20076 (5th Cir. 1981) (effluent limitations, oil and gas extraction).

⁶The Agency's decision not to extend the upset defense to instances of noncompliance with water-quality-based limitations, as opposed to technology-based limitations, solely because the defense would be difficult for dischargers to establish was found to be arbitrary and capricious in *Nat. Res. Def. Council, Inc. v. EPA*, 859 F.2d 156, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20016 (D.C. Cir. 1988).

⁷EPA's definition of "severe property damage" was criticized by the Ninth Circuit in *Marathon Oil Co. v. EPA*, 564 F.2d 1253 (9th Cir. 1977), as vague. That criticism was rejected by the Fifth Circuit in *American Petroleum Inst. v. EPA*, 661 F.2d 340, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20076 (5th Cir. 1981), on its understanding that EPA's definition would include as severe property damage "the shutting in of a [petroleum extraction] well."

⁸See 40 C.F.R. § 122.43.

⁹See 40 C.F.R. §§ 122.42(a), 122.42(b), 122.43.

¹⁰The term "outfall" is generally applied to discrete point sources.

terms.¹¹ 40 C.F.R. §§ 122.44 to 122.50 contain the ground rules and methodologies relevant to effluent limitations in permits.¹²

**§ 13:44 The national pollutant discharge elimination program—
Procedures—In general**

NPDES permits, whether issued by EPA or a state, must be preceded by public notice and “opportunity for a public hearing.”¹ Controversy developed over the nature of the “public hearing” obligation, and appellate courts decided that NPDES-related hearings must be adjudicatory (quasi-trials) in nature.² Prior to May 2000, EPA’s decision-making procedures (40 C.F.R. Part 124) had provided for full evidentiary hearings in connection with all NPDES decision-making except for “initial licensing” decisions, for which a “non-advisory panel” (NAP) hearing is provided. In May 2000, EPA eliminated the full evidentiary hearing (40 C.F.R. Part 124, subpart E) and the NAP hearing (40 C.F.R. Part 124, subpart F) procedures. Instead, thirty days after a decision is made on an NPDES permit, any person who has filed comments on the draft permit or participated in a public hearing may petition the EPA Environmental Appeals Board to review any condition of the permit decision. Persons affected by an NPDES general permit cannot file a petition or otherwise challenge the conditions of the general permit in further EPA proceedings; rather, they can either challenge the permit in court or apply for an individual permit and then petition the Board to review the permit. The Board may also decide on its own initiative to review any condition related to an NPDES permit.³

**§ 13:45 The national pollutant discharge elimination program—
Procedures—EPA-issued permits**

EPA’s NPDES permitting procedures are contained in Part 124 of its regulations, although Part 125, which articulates additional public participation policies and procedures, affects NPDES permit administration to a degree.¹ The Agency’s permit-issuing procedures are fairly decentralized, most authority having been delegated to the ten regional offices. The procedural regulations are reasonably straightforward and do not require extensive discussion.

¹¹The sampling requirements can be waived for guideline-listed pollutants if the discharger can certify that the pollutant is not present in the discharge or is present only at background levels with no increase due to activities of the discharger. *See* 65 Fed. Reg. 30886, 30893-30894 (May 15, 2000).

¹²*See also* 40 C.F.R. Part 125, which contains criteria and standards for BPJ effluent limitations (subpart A), aquaculture projects (subpart B), CWA § 301(k) innovative technology compliance date extensions (subpart C), Fundamentally Different Factors Variances (subpart D), economic variances from BAT under § 301(c) of the Act (subpart E), water-quality-related CWA § 301(g) variances (subpart F), CWA § 301(h) variances (subpart G), heat variances under CWA §§ 316(a) and 316(b) (subparts H and I), compliance date extensions under CWA § 301(i) (subpart J), “best management practices” (subpart K), sewage sludge disposal (subpart L), and ocean dumping (subpart M).

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¹*See* CWA § 402(b), 33 U.S.C.A. § 1342(b).

²*See, e.g.,* *United States Steel Corp. v. Train*, 556 F.2d 822, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20419 (7th Cir. 1977); *Seacoast Anti-Pollution League v. Costle*, 572 F.2d 872, 8 Env’tl. L. Rep. (Env’tl. L. Inst.) 20207 (1st Cir. 1978); *Marathon Oil Co. v. EPA*, 564 F.2d 1253 (9th Cir. 1977).

³65 Fed. Reg. 30886, 30911 (May 15, 2000), codified at 40 C.F.R. § 124.19(a), (b).

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¹Part 124 subpart A contains general procedural requirements applicable to permits in a number of EPA programs—essentially the paper flow requirements; subpart D contains specific procedural requirements for NPDES permits, which are either in addition to or different from subpart A requirements; subparts E and F set the procedural requirements for evidentiary and NAP hearings, respectively.

The obligation imposed by § 124.13 is important both to applicants and to those who seek to challenge the terms of a proposed permit. It imposes an affirmative obligation on participants to “raise all reasonably ascertainable issues and submit all reasonably available arguments” during the comment period. Failure to do so will probably be sufficient to bar a participant from raising the issue on judicial review of EPA’s decision.

EPA-issued permits for new sources are required by § 511 of the Act to comply with NEPA. EPA’s NPDES regulations accommodate this additional requirement.²

**§ 13:46 The national pollutant discharge elimination program—
Procedures—State-issued permits**

State NPDES permits are issued on the standard NPDES permit form produced by EPA, which contains the standard NPDES conditions. Most of the “paper” permit processing requirements of part 124 that are applicable to EPA-issued permits are also applicable to permits issued by states pursuant to delegated NPDES authority, by virtue of the provisions of 40 C.F.R. Part 123.25.¹ EPA does not, however, require states to provide for evidentiary or NAP hearings, and state NPDES procedures vary widely.²

Section 402(d) of the Act empowers EPA to veto state-issued permits. The statute requires EPA to state the basis for its objection to the issuance of the permit and the effluent limitations or conditions EPA would require.³ Once EPA vetoes a permit and the state fails to issue a new, acceptable permit, EPA acquires jurisdiction to issue a new permit and to alter provisions that were not the subject of its veto.⁴ EPA’s procedures for reviewing state permits are published at 40 C.F.R. Part 123, subpart C. They provide notification requirements, carve out types of sources for which notice is not required, and establish hearing procedures relative to EPA objections. An EPA veto is subject to judicial review in the appropriate court of appeals;⁵ failure or refusal to veto is not a reviewable action. The Agency’s veto authority was upheld in *Natural Resources Defense Council, Inc. v. EPA*.⁶

**§ 13:47 The national pollutant discharge elimination program—
Procedures—Transfer, modification, revocation and reissuance,
and termination**

²See 40 C.F.R. § 124.61, § 6.805.

[Section 13:46]

¹Part 123 sets the regulatory standards for state assumption of NPDES authority.

²EPA’s refusal to require states to provide opportunity for evidentiary hearings is based on its correct interpretation of the federal caselaw as requiring evidentiary hearings for federally issued permits because of the particular gloss placed on the phrase “opportunity for public hearing” by the federal Administrative Procedure Act, and caselaw interpreting it, which is not applicable to states.

³Sections 402(e) and (f) authorize EPA to exclude categories of point sources from § 402(d) treatment, thereby avoiding receipt of notice of and waiving its right to veto and modify classes of permits.

⁴See *Champion Int’l Corp. v. EPA*, 648 F. Supp. 1390, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20486 (W.D.N.C. 1986), *vacated and remanded*, 850 F.2d 182, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 21372 (4th Cir. 1988) (EPA properly assumed permitting authority, but district court was not entitled to review substance of EPA’s objections to state permit until EPA decided whether to issue permit). The substantive issue in this litigation, whether EPA properly imposed numerical criteria on a narrative water quality standard, was addressed by § 308(d) of the Water Quality Act of 1987, Pub. L. No. 100-4, 101 Stat. 39, by means of an amendment to CWA § 303(c)(2), 33 U.S.C.A. § 1313(c)(2).

⁵See, e.g., *Crown Simpson Pulp Co. v. Costle*, 445 U.S. 193, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20230 (1980).

⁶*Nat. Res. Def. Council, Inc. v. EPA*, 859 F.2d 156, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20016 (D.C. Cir 1988).

NPDES permits ordinarily may be transferred to reflect a change in ownership of the discharger upon notification to the permit writer and a written agreement between the transferor and transferee containing a specific date for transfer of permit responsibility, coverage, and liability between them.¹ EPA (and the states) retain the right, however, to modify or revoke and reissue the permit in the event of a transfer of ownership or other responsibility.²

In general, permits may be revoked and reissued in modified form if the facility or permitted activity is materially altered, when testing or other information reveals the presence of regulatable amounts of toxic constituents, under certain circumstances of changed regulations,³ to modify a compliance schedule for good cause, to accommodate a variance granted under any of the Act's variance provisions,⁴ to incorporate a § 307(a) toxic effluent standard, to insert limitations required by a "reopener" clause in the permit,⁵ to insert "net" effluent limits or to remove them, to insert a pretreatment-related compliance schedule, to insert limits occasioned by the impact of the discharge on another state's waters when that state was not notified during the permitting process, to insert a new "notification level" regarding anticipated pollutant discharges, to modify a compliance schedule to reflect an innovative technology waiver, to insert terms arising out of settlement of the consolidated permits litigation,⁶ to replace BPJ effluent limitations with effluent guideline-based limitations that are more stringent,⁷ to correct technical errors, or to accommodate treatment system failures.⁸

For years, EPA was plagued with what to do when an existing permit contained BPJ or water-quality-based effluent limitations that were more stringent than subsequently issued national guidelines or revised water-quality-based effluent standards would require. The problem involved the notion of when a renewed, reissued, or modified permit could "backslide" the level of treatment to take account of new, less stringent requirements.

Congress addressed the issue by adding § 402(o) to the CWA in 1987. This provision sets out the circumstances under which backsliding can occur. Those circumstances, set forth in a listing in § 402(o)(2), include: (1) where alterations to the facility made subsequent to permit issuance justify less stringent limits; (2) where new factual information has come to light that would have caused the original permit to have been less stringent had it been known at the time of issuance; (3) to correct "technical mistakes or mistaken interpretations of law;"⁹ (4) due to events over which the permittee has no control and for which there is no reasonable available remedy; (5) where the permittee has received one of the § 301 or § 316 waivers or modifications; (6) where properly installed and maintained and operated treat-

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¹40 C.F.R. § 122.61(b).

²40 C.F.R. §§ 122.61(a), 122.61(b)(3).

³The reader must carefully examine 40 C.F.R. § 122.62(a)(3).

⁴CWA §§ 301(c), 301(g), 301(h), 301(i), 301(k), 316(a), 33 U.S.C.A. §§ 1311(c), 1311(g), 1311(h), 1311(i), 1311(k), 1326(a), or for "fundamentally different factors."

⁵"Reopeners" may be inserted to accommodate toxic effluent limitations, 40 C.F.R. § 122.41(b), or pretreatment conditions. 40 C.F.R. § 403.10(d).

⁶*See, e.g., Nat. Res. Def. Council, Inc. v. EPA*, No. 80-1607 and consolidated cases (D.C. Cir. filed 1980), *see Nat. Res. Def. Council, Inc. v. EPA*, 673 F.2d 392 (D.C. Cir. 1980).

⁷Only where there are disproportionately different operating and maintenance costs between the facility and those assumed for the class of facilities in developing the effluent guideline.

⁸*See generally* 40 C.F.R. § 122.62(a).

⁹This is not available for backsliding more stringent water-quality-based limitations.

ment facilities have not achieved the effluent limits;¹⁰ and (7) for water-quality-based limits only, to reflect the changes produced by a revised waste load allocation formula for the receiving water.¹¹

Modification or revocation and reissuance may be imposed upon a permittee as an alternative to termination for cause or in the event of a transfer of the permit.¹²

Termination is an enforcement device. A permit may be terminated for noncompliance with its terms, for the permittee's failure to state all relevant facts or to misrepresent relevant facts in connection with its application, in the event EPA determines that the permitted activity endangers human health or the environment, or where a changed condition requires reduction or elimination of the discharge.¹³

In May 2000, EPA streamlined the termination procedures in cases where the permittee has permanently terminated its entire discharge or had redirected its discharge into a POTW. In these cases, the EPA Director may terminate a permit by giving notice to the permittee and without following 40 C.F.R. Part 124 procedures. These expedited termination procedures would not be available if the permittee is subject to a state and/or federal enforcement action or if the pollutants were disposed of in wells or by land application of effluent.¹⁴

§ 13:48 Effluent standards and limitations—Technology-based discharge limitations

Section 301(a) of the Act prohibits the discharge of pollutants from a point source into waters of the United States without a permit issued pursuant to the Act.¹ Section 301(b) established a two-step process for the imposition of increasingly stringent technology-based effluent limitations² into NPDES permits issued to existing polluters³ as the national “floor” level of pollutant removal⁴ for industrial and, in

¹⁰Though the backslide may only be to the point that the treatment system *can* achieve.

¹¹The statute contains several other qualifiers and limitations. Certain of EPA's more controversial backsliding regulations were challenged and upheld in *Nat'l Res. Def. Council, Inc. v. EPA*, 859 F.2d 156, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20016 (D.C. Cir. 1988) (backsliding by holders of permits containing limits based on “best professional judgment”).

¹²40 C.F.R. § 122.62(b). Termination for cause is governed by 40 C.F.R. § 122.64.

¹³See 40 C.F.R. § 122.64(a).

¹⁴65 Fed. Reg. 30886, 30894 to 30895 (May 15, 2000).

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¹The § 301(a) prohibition, 33 U.S.C.A. § 1311(a), was held to be applicable only to point sources made subject to effluent standards or limitations promulgated by EPA (hence, not fully self-executing). *Stream Pollution Control Bd. of State of Ind. v. U.S. Steel Corp.*, 512 F.2d 1036, 7 Env't Rep. Cas. (BNA) 1791, 5 Env'tl. L. Rep. 20261 (7th Cir. 1975), *abrogated on other grounds* by *U. S. Steel Corp. v. Train*, 556 F.2d 822, 10 Env't Rep. Cas. (BNA) 1001, 7 Env'tl. L. Rep. 20419 (7th Cir. 1977). *But see* *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 102 S. Ct. 1798, 72 L. Ed. 2d 91, 17 Env't Rep. Cas. (BNA) 1217, 12 Env'tl. L. Rep. 20538 (1982) (discussing scope of remedial discretion in federal court in fashioning injunction in a citizen suit brought to stop discharge of pollutants not theretofore regulated by EPA).

²The Ninth Circuit in *Our Children's Earth Foundation v. EPA*, 527 F.3d 842, 38 Env'tl. L. Rep. (Env'tl. L. Inst.) 20125 (9th Cir. 2008), panel rehearing overruling 506 F.3d 781, 37 Env'tl. L. Rep. (Env'tl. L. Inst.) 20269 (9th Cir. 2007), held that EPA's review of technology-based effluent criteria is discretionary, rather than mandatory, because the statute is ambiguous as to the requirements for review.

³Separate requirements were established for “new sources” of pollution. These are discussed in § 13:64.

⁴As discussed in § 13:77, states are free to impose more stringent effluent limitations that are premised on water quality considerations. *See American Iron & Steel Inst. v. EPA*, 526 F.2d 1027, 6

the original Act, for POTW dischargers.⁵ The deadline for achievement of the initial level of pollutant removal was 1977. The 1972 Act set 1983 as the deadline for achievement of the more stringent second tier pollutant removal, but that deadline was moved back to 1984, and in some cases to 1987, by the 1977 Clean Water Act.⁶

§ 13:49 Effluent standards and limitations—Technology-based discharge limitations—Publicly owned treatment works

As was discussed in the introductory material, the technology for removing pollutants from sewage was essentially developed in the nineteenth century. Congress's choice of the preferred pollutant removal technology for POTW is embodied in the language of § 301(b)(2)(B) of the Act. Under the original 1972 statutory scheme, "secondary treatment," as defined by EPA using factors contained in § 304(d)(1), was to be the level of treatment achieved by 1977. By 1983, a more advanced level of treatment, "best practicable waste treatment technology," developed under § 201(g), was to have been achieved.¹

The second level of treatment was eliminated in the 1981 amendments to the Act,² essentially leaving the imposition of a treatment level more stringent than secondary treatment to the states, by water quality limited effluent limitations or some other means.

EPA's effluent limitations reflecting its choice for secondary treatment are set forth at 40 C.F.R. § 133.102.³ In general there are two basic technologies used to achieve secondary effluent levels—biological treatment⁴ and physical/chemical treatment.⁵ All secondary treatment facilities produce sludge as a by-product, and all are required to chlorinate their effluent at the point of discharge.

Sludge has been a persistent problem for secondary POTW. It must be disposed of.⁶ There are several methods for sludge disposal—drying and incineration, composting, landfilling, or land application for beneficial use. Section 405 of the Act empowers EPA to regulate the disposal of sewage sludge, and sludge that is sufficiently contaminated with toxic or hazardous constituents may be subject to regulation under the Resource Conservation and Recovery Act (RCRA).⁷

Envtl. L. Rep. (Envtl. L. Inst.) 20068 (3d Cir. 1975).

⁵The 1972 CWA envisioned an initial requirement of secondary treatment for POTWs, to be achieved by 1977, with a higher level of treatment achieved by 1983. The Clean Water Act of 1977, and Pub. L. No. 97-117, 95 Stat. 1623 (1981), for all practical intents and purposes, froze POTW treatment levels at secondary treatment, except for water-quality-limited dischargers.

⁶See § 13:55.

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¹CWA § 301(b)(2)(B) (version in force in 1972).

²Pub. L. No. 97-117, §§ 2-23, 95 Stat. 1623-32 (1981).

³The pollutants addressed in secondary treatment are BODs (the five-day measure of the pollutant parameter biochemical oxygen demand), SS (suspended solids), and pH, although there are some variations in sampling for these parameters such as the substitution of chemical oxygen demand (COD) or total organic carbon for BOD in some circumstances and the use of carbonaceous BOD (CBODs) in some circumstances. See *generally* 40 C.F.R. §§ 133.104, 133.105.

⁴Examples are oxidation ponds, lagoons, and trickling filters. See CWA § 304(d)(4), 33 U.S.C.A. § 1314(d)(4).

⁵Physical/chemical facilities employ a variety of means to remove pollutants, including settlement, aeration, flocculation, bacterial digestion, and other engineered means.

⁶See, e.g., *U.S. v. District of Columbia*, 654 F.2d 802, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20595 (D.C. Cir. 1981).

⁷EPA issued regulations in 1989 establishing state sludge management program requirements and procedures for non-NPDES state programs, 40 C.F.R. Part 501, and revised the NPDES permit

§ 13:50 Effluent standards and limitations—Technology-based discharge limitations—Publicly owned treatment works—Marine discharge waivers

In response to complaints, primarily from municipalities on the Pacific coast who argued that it was not cost effective or environmentally required to require POTW discharging directly into deep ocean waters to meet secondary standards, Congress added § 301(h) to the statute in 1977. Although the primary push for a marine discharge waiver came from the West Coast, § 301(h) as enacted contained no geographical limitation other than the limitation to discharges to marine waters.¹

EPA's initial implementing regulations barred municipalities that had already installed secondary plants from taking advantage of § 301(h). They also prohibited a § 301(h) waiver that would allow the discharge of wastewater that had received less than primary treatment. Both of these restrictions were struck down by the D.C. Circuit in *Natural Resources Defense Council, Inc. v. EPA*.² In 1987, Congress reinstated the second restriction with an amendment to the statute, § 301(h)(9)(2). No waiver is permitted to allow the treatment capacity to dip below primary treatment "after initial mixing."³

The most significant aspect of § 301(h) is its limitation to discharges of sewage from a POTW into "marine waters." The "marine waters" term is defined narrowly by the statute to mean "deep waters of the territorial sea or the waters of the contiguous zone, or . . . saline estuarine waters where there is strong tidal movement and other hydrological and geological characteristics" that EPA determines are adequate to meet the protective criteria of § 301(h)(2)⁴ and the policy statement of § 101(a)(2).

EPA defined a number of the subsidiary terms within the statutory definition. The most significant of these is the Agency's definition in 40 C.F.R. § 125.58(q) of the term "saline estuarine waters" to effectively exclude upper estuaries from § 301(h) eligibility.⁵ The Agency's definitional conservatism was buttressed by Congress in 1987 when it added a new last sentence to § 301(h) that essentially codifies EPA's restriction on § 301(h) permits for stressed saline estuarine waters and other stressed waters (regardless of the reasons for the stress), and prohibits or makes it difficult for EPA to issue permits for discharges into marine waters that

requirements and procedures, 40 C.F.R. Parts 122, 123, and 124, to incorporate sludge permitting and state program requirements. See 54 Fed. Reg. 18716 (May 2, 1989).

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¹See, e.g., *Nat. Res. Def. Council, Inc. v. EPA*, 656 F.2d 768, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20487 (D.C. Cir. 1981).

²*Nat. Res. Def. Council, Inc. v. EPA*, 656 F.2d 768, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20487 (D.C. Cir. 1981). The challenge was brought not by NRDC but by the Pacific Legal Foundation and the City of Skagway, Alaska. Congress subsequently codified the NRDC court's ruling regarding secondary treatment and legislatively overruled a third holding that had struck down EPA's refusal to consider sludge discharges as a proper topic for § 301(h). See Pub. L. No. 97-717, 95 Stat. 1623 (1981).

³The conference report contains an admonition that EPA not apply the mixing zone concept expansively. See H.R. Rep. No. 1004, 99th Cong., 2d Sess. 119 (1986).

⁴Section 301(h)(2), using language borrowed from § 316(a), requires protection of water supplies, maintenance of water quality standards, and "protection and propagation of a balanced, indigenous, population of shellfish, fish and wildlife."

⁵"Saline estuarine waters" means those semi-enclosed coastal waters which have a free connection to the territorial sea, undergo net seaward exchange with ocean waters, and have salinities comparable to those of the ocean. Generally, these waters are near the mouth of estuaries and have cross-sectional annual mean salinities greater than twenty-five (25) parts per thousand. 40 C.F.R. § 125.58(v).

are not well flushed or contain excessive sludge blankets.⁶

There are, in addition to the basic water-quality-related criterion discussed above, a number of other statutory prerequisites an applicant must meet before qualifying for a § 301(h) waiver. They are (1) that there be in existence an applicable water quality standard specific to the pollutants for which the waiver is requested;⁷ (2) that the applicant must have established a system for monitoring the impact of the discharge on a “representative sample of aquatic biota, to the extent practicable;”⁸ (3) that the modified discharge will not result in any additional requirements to be imposed on any other discharger or on nonpoint sources;⁹ (4) that all applicable pretreatment requirements for sources introducing waste into the facility will be enforced;¹⁰ (5) that the applicant has established “to the extent practicable” a “schedule of activities designed to eliminate the entrance of toxic pollutants from nonindustrial sources” into the POTW;¹¹ (6) that there not be new or “substantially increased” discharges from the facility once the permit is issued;¹² (7) that the effects of other discharges be considered¹³ and, for municipalities with populations larger than 50,000, that they have an approved pretreatment program in place (or at least one that otherwise ensures the removal of toxics introduced by industrial dischargers to at least the same extent as secondary treatment).

In a number of respects, EPA has attempted to soften the financial burden of a § 301(h) demonstration for small municipalities.¹⁴ The principal relief afforded to small municipalities is less rigorous monitoring requirements, and some relief from the toxics control program.¹⁵

Congress limited the availability of § 301(h), in an amendment adopted in 1982, to municipalities that applied not later than December 29, 1982.¹⁶ The application door was reopened for a brief period following the effective date of the Water Qual-

⁶There is also a specific prohibition against issuance of a § 301(h) permit to New York City.

⁷CWA § 301(h)(1), 33 U.S.C.A. § 1311(h)(1). See 40 C.F.R. § 125.58(cc) for EPA’s regulatory definition of “water quality standards.” Implementing regulations are published at 40 C.F.R. § 125.68.

⁸CWA § 301(h)(3), 33 U.S.C.A. § 1311(h)(3). EPA’s regulation, 40 C.F.R. § 125.63, requires the establishment of an elaborate biological and water quality monitoring scheme and requires the applicant to provide useful baseline data with which to compare subsequent monitored data. Except for monitoring sediments for accumulations of toxics, EPA’s regulation permits monitoring for water quality impacts outside of a “Zone of Initial Dilution” (ZID), defined as the equivalent of the mixing zone allowed in connection with enforcement of state water quality standards. The ZID concept permits some water column effects within the ZID but prohibits “extreme adverse biological impacts” within the ZID. See 40 C.F.R. § 125.62(c)(3).

The monitoring requirements are specific and detailed and must be carefully considered by applicants and opponents.

⁹EPA’s regulation, 40 C.F.R. § 125.63, requires the applicant to secure a determination from the state agency responsible for wasteload allocations to this effect.

¹⁰CWA § 301(h)(5), 33 U.S.C.A. § 1311(h)(5).

¹¹CWA § 301(h)(6), 33 U.S.C.A. § 1311(h)(6). EPA significantly fleshed out this requirement in 40 C.F.R. § 125.64, requiring, at least for large POTW, extensive chemical analyses, source identification, and source control activities.

¹²CWA § 301(h)(7), 33 U.S.C.A. § 1311(h)(8). See also 40 C.F.R. § 125.65. This condition affects facilities with combined storm and sanitary sewers and also requires a mass balance to be undertaken of pollutant inflows.

¹³CWA § 301(h)(3), 33 U.S.C.A. § 1311(h)(3) (1987).

¹⁴EPA defines small applicants as municipalities with populations of less than 50,000 or average dry weather flows of less than five million gallons per day (5mgd), measured as of the end of the five year permit term. See 40 C.F.R. § 125.58(c).

¹⁵See, e.g., 40 C.F.R. §§ 125.62(b)(2), 125.64(a)(2).

¹⁶See CWA § 301(j)(1)(A), 33 U.S.C.A. § 1311(j)(1)(A).

ity Act of 1987.¹⁷

§ 13:51 Effluent standards and limitations—Technology-based discharge limitations—Publicly owned treatment works—Funding-limited compliance extensions

Section 301(i) of the Act provides for a limited compliance date extension for POTW and point sources discharging to them where EPA has failed to make construction grant moneys available to the municipality in time to complete construction of facilities needed to comply with the permit terms. There are a number of additional limitations set forth in the statute, as codified, and in the session law, Pub. L. No. 97-717, which amended the provision in 1981.¹

§ 13:52 Effluent standards and limitations—Technology-based discharge limitations—Existing industrial sources—General approach and BPT—Effluent guidelines

EPA's initial task in implementing the Act was to develop the initial effluent limitations and issue the first round of permits that would make the first phase of effluent reduction enforceable. Section 301(b)(1)(A) required the achievement, not later than July 1, 1977, of effluent limitations for non-POTW that required the application of the "best practicable control technology currently available," as defined under § 304(b) of the Act. Congress did not spell out as clearly as it might have the relationship between §§ 301, 304, and 402. EPA chose to construe that relationship in a way that expedited permit issuance and minimized administrative workload.

The Agency's approach to the first round permit issuance was to develop nationally applicable effluent limitations affecting categories of industries identified in national effluent guidelines produced under § 304,¹ which would result in single-number effluent limitations that would be inserted into NPDES permits by the permit writers.² Permits written before the promulgation of the national limitations contained individually negotiated or imposed effluent limitations based upon the "best professional judgment" (BPJ) of the permit writer.³ Certain parameters in the BPJ permits were sometimes more stringent than those ultimately required by the national effluent limitations for the permittee's source category. Whether these permits could be reopened and the less stringent limitations inserted was a matter of constant debate between EPA and discharger lobbies.⁴

Best practicable technology (BPT) effluent limitations were required to be in

¹⁷CWA § 301(j)(1)(A), 33 U.S.C.A. § 1311(j)(1)(A), as amended by Pub. L. No. 100-4, § 303(f), 101 Stat. 34 (1987).

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¹Section 21 of Pub. L. No. 97-717, 95 Stat. 1623 (1981) effectively limited the outside date for compliance to 1983 for many potential applicants.

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¹EPA published the nationally uniform effluent limitations and § 304 effluent guidelines simultaneously. This approach was upheld in *E.I. Dupont de Nemours & Co. v. Train*, 430 U.S. 112, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20191 (1977), *aff'd in part* 528 F.2d 1136 (4th Cir. 1975).

²The single-number effluent limitation approach was also upheld in *DuPont v. Train*, subject to the availability of a variance for industries whose processes did not fit the categories looked at by EPA in determining the national numbers. Industry litigants argued unsuccessfully that the statute required EPA to set a range of numbers that would be individually tailored to each permit by the permit writer. The judicially created "fundamentally different factors" variance was the subject of subsequent litigation and is discussed in § 13:54.

³CWA § 402, 33 U.S.C.A. § 1342; *Nat. Res. Def. Council, Inc. v. U.S. E.P.A.*, 859 F.2d 156, 183 (1988).

⁴*See, e.g.*, 39 Fed. Reg. 9612 to 9616 (1974).

conformity with § 304(b)(1)(A) and (b)(1)(B). The important requirements of this scheme are (1) effluent limitations should be uniform among industrial categories and classes;⁵ (2) the degree of effluent reduction is not dependent upon water quality;⁶ and (3) the cost of application of any given technology in relation to its effluent reduction benefits is a factor to be considered, but a limited cost-effectiveness analysis is sufficient, and a formal cost-benefit analysis is not required.⁷

In practical terms, the BPT requirement involved selection of a treatment technology for each class of industry⁸ that represented the average of the best technology in use at the time the guidelines were effective.⁹ EPA's categorical effluent limitations provoked a fair amount of litigation over the question of when technology was "available,"¹⁰ and whether EPA could include in-plant process modifications in the BPT calculus or was limited to end-of-the-pipe add-on technology.¹¹ Although § 101(a)(1) contained a "no discharge of pollutants" goal statement, EPA was unsuccessful in the few attempts it made at imposing total recycling as a BPT limit.¹²

The statute requires separate effluent limitations for each regulated pollutant. EPA initially established effluent limitations for a small number of compounds,

⁵See *E.I. du Pont De Nemours & Co. v. Train*, 541 F.2d 1018, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20371 (4th Cir. 1976), *aff'd in part*, 430 U.S. 112 (1977).

⁶See *Weyerhaeuser v. Costle*, 590 F.2d 1011, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20284 (D.C. Cir. 1978); *Appalachian Power Co. v. EPA*, 671 F.2d 801, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20278 (4th Cir. 1982).

⁷See *CPC Int'l v. Train*, 540 F.2d 1329, 6 Env'tl. L. Rep. 20728 (8th Cir. 1976); *American Petroleum Inst. v. EPA*, 540 F.2d 1023, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20748 (10th Cir. 1976); *see also* *Appalachian Power Co. v. Train*, 545 F.2d 1351, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20732 (4th Cir. 1976); *American Iron & Steel Inst. v. EPA*, 526 F.2d 1027, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20068 (3d Cir. 1975). *Cf.* *American Paper Inst. v. Train*, 543 F.2d 328, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20729 (D.C. Cir. 1976). In *Chemical Mfrs. Assn. v. EPA*, 870 F.2d 177, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20989 (5th Cir. 1989), the court held EPA may determine that a technology is not BPT on the basis of the cost-effectiveness analysis only when the costs are "wholly disproportionate" to the potential effluent reduction benefits. *Accord* *Rybachek v. EPA*, 904 F.2d 1276, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20973 (9th Cir. 1990) (settling ponds for placer mining).

⁸Industry subcategories were determined by reference to process similarities, effluent similarities, and similarities in the age of the plants of that type. Thus, for example, the overall pulp and paper industry contained several subcategories, the primary ones being kraft mills and sulfite process mills.

⁹See CWA § 304(b)(B), 33 U.S.C.A. § 1314(b)(1)(B); *see also* *American Petroleum Inst. v. EPA*, 540 F.2d 1023, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20748 (10th Cir. 1976); *Hooker Chems. & Plastics Corp. v. Train*, 537 F.2d 620, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20467 (2d Cir. 1976); *American Meat Inst. v. EPA*, 526 F.2d 442, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20029 (7th Cir. 1975).

¹⁰Foreign plants were held a sufficient basis for determining the availability of a treatment technology in *American Frozen Food Inst. v. Train*, 539 F.2d 107, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20485 (D.C. Cir. 1976). Transfer of technology from one industrial category to another as a basis for a BPT limitation was upheld in *California & Hawaiian Sugar Co. v. EPA*, 533 F.2d 280, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20383 (2d Cir. 1977). Technology not currently in use might be required if the record clearly demonstrated its availability by the compliance date. *See* *American Meat Inst. v. EPA*, 526 F.2d 442, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20029 (D.C. Cir. 1976); *Tanners' Council v. Train*, 540 F.2d 1188, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20379 (4th Cir. 1976). An effluent limitation was set aside because the record did not demonstrate that it could be achieved using normal industry practice, in *FMC Corp. v. Train*, 539 F.2d 973, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20382 (4th Cir. 1976).

¹¹The courts addressing the issue squarely have all held that EPA was not limited to end-pipe technology, and those conclusions are consistent with legislative history on the House of Representatives' side. *See generally* H.R. Rep. No. 911, 92d Cong., 2d Sess. (1972); *American Petroleum Inst. v. EPA*, 540 F.2d 1023, 1033, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20748 (10th Cir. 1976); *American Paper Inst. v. Train*, 543 F.2d 328, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20729 (D.C. Cir. 1976); *E.I. du Pont De Nemours & Co. v. Train*, 541 F.2d 1018, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20371 (4th Cir. 1976), *aff'd in part*, 430 U.S. 112 (1977).

¹²See *Hooker Chems. & Plastics Corp. v. Train*, 537 F.2d 620, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20467 (2d Cir. 1976).

largely ignoring several hundred complex organic compounds that are discharged in small quantities by a minority of industrial plants. EPA promulgated BPT limitations for BOD₅,¹³ total suspended solids,¹⁴ pH, various metals,¹⁵ arsenic, cyanides, COD, phenols, heat,¹⁶ oil and grease, and some organic compounds.¹⁷

A 1987 amendment to § 301(b) implicitly authorized the establishment of more stringent BPT for subcategories addressed after 1982 by providing a compliance extension for sources subject to such requirements.

§ 13:53 Effluent standards and limitations—Technology-based discharge limitations—Existing industrial sources—Variances from BPT effluent limitations guidelines

Congress intended that BPT effluent limitations serve as the floor, or minimum level of pollution control, applicable to existing industrial dischargers.¹ Consistent with this intention there are no statutory variances from BPT limitations. Neither the § 301(c) economic variance² nor the § 301(g) water quality variance³ are available to alter otherwise applicable BPT limitations.

Although there are no explicit statutory variances from BPT, EPA has developed an administrative variance, the “fundamentally different factors” (FDF) variance, that is applicable to most technology-based limits under the Clean Water Act.⁴ The FDF variance is intended to ensure that individual dischargers are subject to effluent limitations that are based on the statutory factors specified in the Act.⁵ The Agency has stated:

When EPA establishes national limits under these sections of the Act, EPA considers a great deal of information regarding the appropriate statutory factors from various dischargers in an industrial category. In some cases, however, data on a particular

¹³See *Weyerhaeuser v. Costle*, 590 F.2d 1011, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20284 (D.C. Cir. 1978) (consideration of a challenge to a BOD₅ limitation).

¹⁴See *Nat'l Crushed Stone Ass'n, Inc. v. EPA*, 601 F.2d 111, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20535 (4th Cir. 1979), *rev'd on other grounds*, 449 U.S. 64, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20924 (1980).

¹⁵These include mercury, zinc, chromium, iron, aluminum, copper, and nickel.

¹⁶A special variance was provided for discharges of heat in § 316. This provision is discussed below.

¹⁷See *BASF Wyandotte v. Costle*, 598 F.2d 637, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20609 (1st Cir. 1979), *remanded regulations upheld*, 614 F.2d 21, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20150 (1st Cir. 1980) (reviewing effluent limitations for pesticide manufacturing subcategory).

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¹Although subsequent BAT and BCT effluent limitations may be more stringent, neither may be less stringent than BPT.

²CWA § 301(c), 33 U.S.C.A. § 1311(c). *EPA v. Nat'l Crushed Stone Ass'n*, 449 U.S. 64, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20924 (1980).

³CWA § 301(g), 33 U.S.C.A. § 1311(g).

⁴Through the FDF variance individual dischargers may be able to justify alternate BPT, BAT, BCT, and categorical pretreatment requirements. 40 C.F.R. subpart D specifies criteria for approval of FDF variances from effluent limitations developed under §§ 301 and 304 of the Act. The FDF variance is not, however, available from New Source Performance Standards developed pursuant to § 306 of the Act. The Supreme Court upheld the separate treatment of NSPS in *E.I. du Pont De Nemours & Co. v. Train*, 430 U.S. 112, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20191 (1977). The FDF variance procedures for steam electric power plants have been promulgated separately. See 40 C.F.R. § 423.12. The FDF variance provisions for the categorical pretreatment requirements are promulgated at 40 C.F.R. § 403.13.

⁵One court described the FDF variance as authorizing “individual operators to argue, that, given the overall impact of an effluent limitation on their operations, they are faced with *stricter* requirements than the Act authorizes EPA to place on the industry as a whole.” *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1035, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20284, 20293 (D.C. Cir. 1978) (emphasis in original).

discharger may not be considered. It may therefore be necessary, on a case-by-case basis, to vary the nationally prescribed limits for a particular discharger if the relevant statutory factors relating to that discharger are shown to be fundamentally different from those previously considered by EPA.⁶ It is EPA's position that the FDF variance does not excuse compliance from technology-based limitations but merely provides for an individual definition of those requirements.⁷ Consistent with the view that the FDF is merely a site-specific application of statutory factors, the FDF variance may be used to make national limitations either more or less stringent.⁸

The FDF variance acts as a "safety valve" that helps EPA justify the normal application of uniform national effluent limitations.⁹ Indeed, in *E.I. DuPont de Nemours v. Train*,¹⁰ the Supreme Court indicated that the FDF variance might be a necessary component of BPT effluent limitations guidelines.¹¹ The Court subsequently determined that § 301(l), which prohibits the modification of any standard applicable to toxic pollutants, did not prohibit the use of the FDF variance to alter effluent limitations on toxic pollutants in categorical pretreatment standards and presumably all technology-based limitations.¹²

EPA regulations for approving FDF variances from effluent limitations guidelines are found at 40 C.F.R. Part 125, subpart D.¹³ These regulations authorize the approval of alternate effluent limitations for an individual source if, among other things, that source can demonstrate that "factors relating to the control of the discharge are fundamentally different than those considered by EPA in establishing the national limits." The regulations specify a number of factors that may be used to justify an FDF variance. These factors include the nature and quality of pollutants contained in the raw waste load, the volume of the discharger's wastewater, non-water-quality environmental impacts, energy requirements in complying with standards, engineering and process differences in applying control technology and cost of compliance with required control technology.

A "fundamental difference" with respect to these factors may justify a FDF variance if the discharger can demonstrate that they result in (1) a "removal cost wholly out of proportion to the removal cost considered during development of the national limits"; or (2) "a non-water quality environmental impact (including energy requirements) fundamentally more adverse than the impact considered during development of the national limits."

There are several situations where an FDF variance will *not* be granted. First, EPA is explicit that a discharger's inability to afford pollution control technology is not a basis for an FDF variance. An FDF variance is appropriate only if the "cost of compliance" is fundamentally different than that which EPA considered when

⁶44 Fed. Reg. 32893 (1979).

⁷44 Fed. Reg. 32893 (1979).

⁸Compare 40 C.F.R. § 125.31(b) with 40 C.F.R. § 125.31(c).

⁹The court in *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1035, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20284, 20293 (D.C. Cir. 1978), described the FDF variance as a "pin hole" escape valve.

¹⁰*E.I. DuPont de Nemours & Co. v. Train*, 430 U.S. 112, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20191 (1977).

¹¹The Court, discussing EPA's authority to adopt national effluent limitations guidelines, concluded that "the statute authorizes the 1977 [BPT] as well as the 1983 [BAT] limitations to be set by regulation as long as some allowance is made for variations in individual plants, as EPA has done by including a variance clause [the FDF variance] in its 1977 limitations." *E.I. DuPont De Nemours & Co. v. Train*, 430 U.S. 112, 128, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20191, 20194 (1977).

¹²*Chemical Mfrs. Ass'n v. Nat. Res. Def. Council, Inc.*, 470 U.S. 116, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20230 (1985). See Gaba, Regulation of Toxic Pollutants under the Clean Water Act: NPDES Toxics Control Strategies, 50 J. Air L. & Comm. 761, 775-78 (1985).

¹³Similar provisions dealing with FDF variances from categorical pretreatment requirements are contained in 40 C.F.R. § 403.13.

developing the national limitation. For example, if EPA, when promulgating a national BPT limitation, concluded that facilities within the subcategory could meet the limitation for ten dollars per pound, an individual facility might be eligible for an FDF variance if it could demonstrate that due to differences with respect to the enumerated factors it would cost the facility one hundred dollars per pound to achieve the limitations. Mere inability to afford the ten dollars per pound would not be a basis for granting an FDF variance.¹⁴

Second, an FDF variance will not be granted based on claims of the impact of the discharge on local receiving water quality.¹⁵ For example, a variance would not be granted based on a claim that a discharge will have no effect on water quality because of unique local factors.¹⁶ Since the effect on local water quality is not a factor to be considered in establishing national effluent limitations, it is not a basis for altering these limitations based on FDF variances.¹⁷

Third, a claim that EPA inappropriately applied the statutory factors when developing the national limitations would not appropriately be raised through an FDF variance.¹⁸ This basic challenge to the effluent limitations would be brought under the judicial review provisions of § 509(b)(1)(F). Finally, EPA has provided that inability to achieve effluent limitations within the time allowed by the Act is not a ground for an FDF variance.¹⁹

A request for an FDF variance is considered as part of the permit issuance process. EPA has promulgated procedures for review of an application for an FDF variance²⁰ and appeal from the Agency's decision.²¹ Separate procedures are applicable for FDF variances from categorical pretreatment requirements.²² Where a state is the permit issuer, EPA may review and veto any FDF variance. EPA's rejection of a state-issued FDF variance has been considered "denial" of a permit by EPA reviewable in the U.S. courts of appeals pursuant to § 509(b)(1)(F).²³

§ 13:54 Effluent standards and limitations—Technology-based discharge limitations—Existing industrial sources—Extension of 1977 deadline

Many dischargers failed to meet the effluent limitations in their NPDES permits before the July 1, 1977 deadline arrived. Some dischargers had decided to tie into

¹⁴The Supreme Court noted in *Nat'l Crushed Stone v. EPA* that "to allow a variance based on the maximum technology affordable by the point source, even if that technology fails to meet BPT effluent limitations, would undercut the purpose and function of BPT limitations." *Nat'l Crushed Stone Ass'n v. EPA*, 449 U.S. 64, 78, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20924, 20927 (1980). The ability to afford compliance may, however, be the basis for receiving a § 301(c) economic variance. See § 13:61.

¹⁵40 C.F.R. § 125.31(e)(4).

¹⁶In some cases a § 301(g) water quality variance might be granted based on demonstration of the effect of a discharge on local receiving water quality. See § 13:61.

¹⁷See *Appalachian Power Co. v. EPA*, 671 F.2d 801, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20278 (4th Cir. 1982).

¹⁸40 C.F.R. § 125.31(e)(2).

¹⁹40 C.F.R. § 125.31(e)(1).

²⁰40 C.F.R. §§ 122.21(m)(1)(i), 124.62 to 124.63.

²¹40 C.F.R. § 124.64.

²²See 40 C.F.R. § 403.13.

²³*Crown Simpson Pulp Co. v. Costle*, 445 U.S. 193, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20230 (1980). But see *Northwest Environmental Advocates v. U.S. E.P.A.*, 537 F.3d 1006, 1016-18 (9th Cir. 2008) (district court had jurisdiction of EPA's denial of review of plaintiff's petition to repeal ultra vires regulation). One court held that the ninety-day period in which to seek judicial review runs from the date of receipt of notice of EPA's denial of the variance request. See *Georgia Pacific Corp. v. EPA*, 671 F.2d 1235, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20415 (9th Cir. 1982).

POTW, which had not been completed by the deadline, some built treatment facilities that failed to live up to their design, some encountered construction delays, some simply did not begin compliance actions on time, and a few made no attempt whatever to comply with the limitations, including compliance schedules, in their permits.

There was sufficient “justifiable” noncompliance that whether or not the 1977 deadline could be “extended”—by administrative action, such as by means of a permit amendment or administrative compliance order, or in a judicially approved consent decree—became a significant issue. The majority of courts addressing the administrative relief issue concluded that when Congress said “not later than July 1, 1977,” in § 301(a), it meant just that, and neither EPA nor a state permit writer had the power to extend the compliance deadline.¹ Congress addressed the issue of 1977 deadline compliance in the 1977 amendments and expressly provided relief only for dischargers who had committed to tie into a POTW prior to July 1, 1977, and who could not do so by the deadline because the POTW was “unable to accept such discharge without construction,” which is delayed due to federal funding priority decisions.²

Whether a court, by its own order or by approving a consent decree in an enforcement action, could authorize an extension raised interesting questions of statutory interpretation. One court, the Sixth Circuit in *Republic Steel Corporation v. Costle*,³ believed that Congress had closed the door on judicial relief by not providing for it in the 1977 amendments when the issue was clearly before it. That conclusion is suspect in view of the Supreme Court’s later broad affirmation of judicial authority to provide equitable relief in CWA enforcement cases in *Weinberger v. Romero-Barcelo*.⁴

The argument against deadline extensions by consent decree involves slightly different considerations. Essentially, the argument goes that if Congress intended to prevent EPA from granting extensions by permit or other administrative order, it would be a perversion to allow that result to be achieved simply by the filing of a complaint and negotiation of a compliance order that is memorialized in an agreement signed by a judge. On the other hand, it is an arguable waste of resources to require the government to litigate every deadline case, with the inevitable result being some kind of a judicially imposed deadline extension, stretched out even further

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¹See *Bethlehem Steel Corp. v. Train*, 544 F.2d 657, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20019 (3d Cir. 1976); *State Water Control Bd. v. Train*, 559 F.2d 921, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20571 (4th Cir. 1977) (POTWs); cf. *Republic Steel Corp. v. Train*, 557 F.2d 91, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20509 (6th Cir. 1977), remanded in light of 1977 amendments, 434 U.S. 1030 (1978) (deadline cannot be applied to entities who did not receive permit until after December 31, 1974, permit issuance deadline of CWA § 402(h)); see also *United States Steel Corp. v. Train*, 556 F.2d 822, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20419 (7th Cir. 1977). *Contra* *Monongahela Power Co. v. EPA*, 586 F.2d 318, 8 Env’tl. L. Rep. (Env’tl. L. Inst.) 20884 (4th Cir. 1978).

²CWA §§ 301(i), 301(j), 33 U.S.C.A. §§ 1311(i), 1311(j). In *Republic Steel Corp. v. Costle*, 581 F.2d 1228, 8 Env’tl. L. Rep. (Env’tl. L. Inst.) 20686 (6th Cir. 1978), the court read this legislative history as evidencing a firm intention that other dischargers could be afforded no relief, even by the courts. The prerequisites for this extension are explicit. Congress addressed this provision again in 1981, both extending and limiting the availability of the POTW discharger extension.

³*Republic Steel Corporation v. Costle*, 581 F.2d 1228, 8 Env’tl. L. Rep. (Env’tl. L. Inst.) 20686 (6th Cir. 1978).

⁴*Weinberger v. Romero-Barcelo*, 456 U.S. 305, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20538 (1982). Although the specific issue before the Court was whether a person found to be discharging a pollutant without a permit, in clear violation of § 301(a)’s prohibition, must cease the discharge immediately or can be placed under a compliance schedule for securing a permit, the Court’s reasoning would appear to legitimize a post-1977 compliance schedule for achieving BPT effluent limitations.

by the time it takes to litigate the case. The question was never put before the courts.

A 1987 amendment to § 301 allowed slippage of the compliance date for BPT to three years after effluent guidelines are promulgated, but not later than March 31, 1989, for pollutants or industry subcategories for which EPA had not issued effluent guidelines in time for earlier compliance.

§ 13:55 Effluent standards and limitations—Technology-based discharge limitations—BCT and BAT: The final level of control¹

The Act as adopted in Pub. L. No. 92-500 contained two levels of technology-based control: best practicable control technology, discussed in the previous section, and best available control technology (BAT). BAT was to be achieved by July 1, 1983, and required for all regulated dischargers application of “the best available technology economically achievable for each category or class, which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants.”²

Congress radically altered this scheme as part of its overhaul of the law in 1977.³ The principal motivation for change was the perceived need to address the problem of toxic pollutants more aggressively.⁴ It was decided that the primary function of BAT should be to provide the technological analog to § 307’s health-based toxic effluent limitations, along the lines of the approach EPA took in settling *Natural Resources Defense Council, Inc. v. Train*.⁵ Thus, BAT, which initially had been envisioned as a general technology-based criterion, was transformed into a new strategic tool, the primary purpose of which was to address toxic effluents.

At the same time, industrial dischargers who produced only sewage and other “conventional” effluents argued for parity with their counterparts who discharged into municipal sewage systems and urged successfully that BPT had achieved a greater degree of effluent reduction than previously anticipated. Consequently, they should be spared the expense of significantly increased burdens of effluent reduction.⁶

Thus, after the 1977 amendments, § 301(b) addressed four classes of pollutants differently, establishing levels of technology to be applied by July 1, 1984, and in some cases, July 1, 1987. These are (1) Conventional Pollutants (compliance by July 1, 1984); (2) Toxic Pollutants (compliance by July 1, 1984, for industries and pollutants covered by consent decree in *Natural Resources Defense Council, Inc. v. Train*,⁷ and three years following establishment of standards or limitations for others); (3)

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¹By **Donald W. Stever** and **Jeffrey Gaba**; updated by **Ronald Raider** and **Vance Hughes**.

²CWA § 301(b)(2)(A), 33 U.S.C.A. § 1311(b)(2)(A) (version in force in 1972).

³Pub. L. No. 95-217, 91 Stat. 1566 (1977).

⁴See 3 Environmental Policy Division, Congressional Research Service, A Legislative History of the Clean Water Act of 1977, 95th Cong., 2d Sess. 326–28 (Comm. Print 1978) (House Debate on Conference Report) [hereinafter cited as 1977 Legislative History].

⁵Nat. Res. Def. Council, Inc. v. Train, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20588 (D.D.C. 1976), *remanded in part on other grounds sub nom.* Nat. Res. Def. Council, Inc. v. Costle, 561 F.2d 904, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20547 (D.C. Cir. 1978), *reaff’d sub nom.* Nat. Res. Def. Council, Inc. v. Gorsuch, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20570 (D.D.C. 1982), *aff’d sub nom.* Citizens for a Better Env’t v. Gorsuch, 718 F.2d 1117, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20975 (D.C. Cir. 1983). The terms of this decree and its significance to the toxic pollutant control program are discussed in § 13:59.

⁶See 3 Environmental Policy Division, Congressional Research Service, A Legislative History of the Clean Water Act of 1977, 95th Cong., 2d Sess. 330–31 (Comm. Print 1978) (House Debate on Conference Report).

⁷See § 13:59.

Unconventional Pollutants (compliance by July 1, 1984, or three years after standards or limitations are established, but not later than July 1, 1987); and (4) Heat. It is also apparent that whatever intentions existed in 1972 to utilize BAT as the vehicle to achieve zero discharge, that state of affairs was diluted by the 1977 amendments.

The compliance deadlines for certain industries were extended further in 1987 by amendments to § 301 contained in the Water Quality Act of 1987.⁸ The compliance deadline for BAT, BCT, and Best Professional Judgment (BPJ)-based effluent limitations was extended to within three years of promulgation of the relevant guidelines (or in the case of BPJ, the date the limitations are promulgated), but in all events not later than March 31, 1989.⁹ Limited further slippage was contemplated by Congress, as indicated by the Conference Report concession that in the event effluent limitations were not promulgated to enable dischargers to meet the 1989 deadline, EPA could issue either BPJ or guideline-based permits along with administrative orders and compliance schedules.¹⁰

§ 13:56 Effluent standards and limitations—Technology-based discharge limitations—BCT and BAT: The final level of control—Conventional pollutants

Section 301(b)(2)(E) requires that point sources discharging “conventional” pollutants identified pursuant to § 304(a)(4) must have achieved effluent reduction within three years after promulgation of BCT effluent guidelines for the discharger’s source subcategory, or no later than March 31, 1989.¹ A modest deadline extension is available for dischargers who install an innovative production process or control technique that qualifies for favorable treatment under § 301(k).² Reductions must meet the degree required by application of the “best conventional pollutant control technology,” determined by EPA pursuant to § 304(b)(4) of the statute, as reconsidered every five years.³

Conventional pollutants are those that have traditionally been regulated in discharges from municipal POTW—BOD, suspended solids, fecal coliform, pH,⁴ and oil and grease.⁵

The effluent limitations established for conventional pollutants for regulated

⁸Pub. L. No. 100-4, 101 Stat. 7 (1987).

⁹The 1989 date was coupled with an amendment to § 301(f), which required EPA to issue its long-promised effluent guidelines for organic chemicals, synthetic fibers, plastics, and pesticide point source categories by the end of 1987. Pub. L. No. 100-4, § 301(f), 101 Stat. 30 (1987). EPA finally issued its effluent guidelines, including categorical pretreatment requirements, for the organic chemicals, plastics, and synthetic fibers category on November 5, 1987. 52 Fed. Reg. 42522 (1987) (codified at 40 C.F.R. Parts 414 and 416). The guidelines were upheld for the most part in *Chem. Mfrs. Ass’n v. EPA*, 870 F.2d 177, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20989 (5th Cir. 1989).

¹⁰H.R. Rep. No. 1004, 99th Cong., 2d Sess. 115 (1986).

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¹The original deadline, July 1, 1984, was extended by the Water Quality Act of 1987, Pub. L. No. 100-4, § 301, 101 Stat. 29, in the face of EPA’s failure to issue defensible BCT guidelines in time to secure compliance with the 1984 deadline for very many discharge categories.

²Section 301(k) was made applicable to conventional pollutant discharges by the Water Quality Act of 1987. Pub. L. No. 100-4, § 305(b), 101 Stat. 35.

³3 Environmental Policy Division, Congressional Research Service, *A Legislative History of the Clean Water Act of 1977*, 95th Cong., 2d Sess. 459 (Comm. Print 1978) (House Debate on Conference Report).

⁴CWA § 304(a)(4), 33 U.S.C.A. § 1314(a)(4).

⁵Added by EPA under the discretionary authority provided under CWA § 304(a)(4), 33 U.S.C.A. § 1314(a)(4). See 40 C.F.R. § 401.16.

classes or categories of point sources are required by § 304(b)(4) to reflect the “reasonableness of the relationship between the costs of attaining a reduction in effluents and the effluent reduction benefits derived”⁶ (the “industry cost-effectiveness test”⁷), the same general factors including age, process, etc., applicable to BPT,⁸ and a significant, somewhat confusing, “cost test” intended to roughly equate BCT technology to that required of POTW after 1977.

The “cost test” in § 304(b)(4)(B) requires consideration of “the comparison of the cost and level of reduction of such pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources.” The conference report on Pub. L. No. 95-217 stated that this could produce “somewhat more than best practicable technology or could be somewhat less than best available technology for nonconventional pollutants” and indeed could either require “no more than that which would result from best practicable technology but also could result in effluent reductions equal to that required in application of best available technology.”⁹

Congress’s explanation of the provision understandably did little to assist EPA in determining precisely what the cost relationship between BCT and post-secondary POTW limits should be. The floor manager for the House articulated the relationship somewhat differently. He stated that “[e]ssentially, we are talking about removing additional ‘cheap pounds’ of conventional pollutants . . . BCT . . . anticipates and accepts the possibility of an increase in stringency beyond BPT, but not resulting in increased costs beyond the ‘knee of the curve,’ the take off point where incremental costs begin to exceed incremental benefits.”¹⁰

EPA initially interpreted the statute as providing a single “reasonableness test,” in which the industrial cost-effectiveness factor and the POTW cost comparison would be employed as a single test, and it promulgated its initial BCT guidelines on that basis. Those guidelines were struck down by the Fourth Circuit in *American Paper Institute v. EPA*,¹¹ with the court concluding that EPA was required to undertake an initial industry cost-effectiveness analysis along with the POTW cost comparison test and consider the standard in light of both.¹²

EPA implemented the POTW cost comparison test by comparing the cost of

⁶See *American Paper Inst. v. EPA*, 660 F.2d 954, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20865 (4th Cir. 1981).

⁷The language is identical to that used for BPT and should be construed in the same way.

⁸These factors include the age of equipment and facilities involved, the process employed, engineering considerations, process changes, non-water-quality environmental impacts, and energy requirements.

⁹H.R. Rep. No. 830, 95th Cong., 1st Sess. 85 (1977) (Conference Report).

¹⁰3 Environmental Policy Division, Congressional Research Service, A Legislative History of the Clean Water Act of 1977, 95th Cong., 2d Sess. 330 (Comm. Print 1978) (House Debate on Conference Report). In *Chemical Mfrs. Ass’n v. EPA*, 870 F.2d 177, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20989 (5th Cir. 1989), industry plaintiffs unsuccessfully invoked the “knee of the curve” test in claiming that EPA must apply the BCT cost test when revising BPT standards. The court held that the promulgation of the BCT requirements did not override EPA’s authority to prepare BPT standards—in this case, standards for conventional pollutants from the organic chemicals, plastics, and synthetic fibers category.

¹¹*American Paper Institute v. EPA*, 660 F.2d 954, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20865 (4th Cir. 1981).

¹²In a strongly worded partial dissent, Judge Phillips disagreed with the majority’s reading of § 304(b)(4)(B). In his view, the statute commanded EPA to take as its lodestar the imposition of no further requirements (beyond those justified by BPT) than can be justified by demonstrating a reasonable relationship between the costs incurred and the benefits to be achieved through compliance, looking always to the end goal of total elimination of pollutant discharges by 1985. In testing reasonableness of the cost/benefit relationship, EPA must compare—because it affords a convenient and trustworthy cost/benefit relationship for comparison—the experience in effluent level reductions had by publicly owned treatment works. *American Paper Institute v. U.S. E.P.A.*, 660 F.2d 954, 966, 16 Env’t Rep. Cas. (BNA)

industrial effluent removal beyond BPT to the incremental cost of moving a POTW from secondary treatment to advanced secondary treatment (AST),¹³ an approach found acceptable by the Fourth Circuit in *American Paper*.

EPA subsequently withdrew most of its initial BCT guidelines and repromulgated them along with a revised BCT methodology in 1986.¹⁴ Under the 1986 methodology, the Agency refined its POTW cost comparison test somewhat¹⁵ and created a new Industry Cost-Effectiveness Test.¹⁶

Congress provided a “fundamentally different factors” variance for BCT (also applicable to BAT) in § 301(n).¹⁷

§ 13:57 Effluent standards and limitations—Technology-based discharge limitations—BCT and BAT: The final level of control—BAT for nonconventional pollutants

Pollutants that are not conventional pollutants, as defined in § 304(a)(4) or added to the conventional pollutant list by EPA, are not heat, and that are not toxic pollutants, as defined by § 502(13), are “nonconventional pollutants.”¹ Examples include ammonia, chlorides, nitrates, iron, and color. EPA’s determination to classify settleable solids as nonconventional pollutants, and thus to issue BAT-level controls for them, was upheld in *Rybachek v. EPA*.²

Point source categories discharging nonconventional pollutants are required to employ the best available control technology economically achievable³ within three years of the adoption of BAT limitations for the subcategory, or by July 1, 1987, at the latest.⁴ Individual sources discharging nonconventional pollutants are provided the opportunity to obtain a source-specific “waiver” of the BAT requirement by

1252, 11 Env’tl. L. Rep. 20865, 20870 (4th Cir. 1981).

¹³See generally 43 Fed. Reg. 37572 (1983). AST, as employed in EPA’s construction grants program, involves a treatment facility that can produce effluent of a higher quality than secondary, still using secondary treatment technology. Translated into single-number effluent limits, AST facilities must meet limits from 10 to 29 mg/l for BOD and TSS, as compared to 30/30 for secondary.

¹⁴51 Fed. Reg. 24974 (1986). This rulemaking had a rather tortured history, with several false starts and midcourse alterations. See 47 Fed. Reg. 49176 (1982); 48 Fed. Reg. 24742 (1983); 48 Fed. Reg. 44091; 49 Fed. Reg. 37046 (1984). EPA’s general methodology is not published in the Code of Federal Regulations.

¹⁵To pass the POTW test, the cost per pound of conventional pollutant removed by industrial dischargers in upgrading from BPT to the candidate BCT must have been less than the cost per pound of conventional pollutant removed in upgrading a POTW from secondary treatment to advanced secondary. The Agency makes certain cost assumptions per pound that vary depending on the long- or short-term nature of the performance data. See 51 Fed. Reg. 24976 (1986).

¹⁶For each industry subcategory, EPA computes a ratio of two incremental costs: the cost per pound removed by the BCT candidate technology relative to BPT and the cost per pound removed by BPT relative to no treatment (i.e., comparing the raw wasteload with pollutant load after application of BPT). The ratio of the first of these costs divided by the second is evaluated to determine cost-effectiveness, and is related to the POTW cost-comparison test. See 52 Fed. Reg. 24976 (1987); 51 Fed. Reg. 45094 (1986) (BCT limitations for pharmaceutical manufacturing subcategory) for assumptions and further explication, and application of the methodology.

¹⁷See § 13:57 (discussion in the footnotes).

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¹CWA § 301(b)(2)(F), 33 U.S.C.A. § 1311(b)(2)(F).

²*Rybachek v. EPA*, 904 F.2d 1276, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20973 (9th Cir. 1990).

³BAT, including the § 304 factors that are involved, are discussed in detail in the section dealing with toxic pollutants.

⁴The statutory language on the deadlines provides within three years, “or not later than July 1, 1984, whichever is later, but in no case later than July 1, 1987,” no doubt in recognition of EPA’s chronic inability to promulgate regulations swiftly.

§ 301(g), which is patterned after the § 316(a) waiver available to heat dischargers in the 1972 Act.

In order to qualify for a § 301(g) waiver, a discharger must demonstrate to EPA, “with the concurrence of the State,” that the source is in compliance with the applicable BPT or more stringent water-quality-based effluent limitations and satisfy two other water-quality-related criteria. The additional criteria are that the discharge as modified will not result in the imposition of additional requirements “on any other point or nonpoint source” and that it will not interfere with the maintenance of water quality, will “assure” protection of water supplies and aquatic life,⁵ and will not result in the discharge of pollutants in “quantities which may reasonably be anticipated to pose an unacceptable risk to human health or the environment because of bioaccumulation, persistency in the environment, acute toxicity, chronic toxicity (including carcinogenicity, mutagenicity or teratogenicity), or synergistic propensities.”

In order to prevent double variances, § 301(g)(2) requires sources also interested in a § 301(c) variance to apply for both at the same time.⁶

Since its addition to the law, § 301(g) has been under attack by environmental organizations, and it was never popular with EPA’s professional staff. The Agency had not issued general § 301(g) regulations by late 1985, when it announced that it had decided to terminate its rulemaking activities under the provision.⁷ Thus, decisions on variance requests involved case-by-case decision-making on the basis of EPA’s informal guidance.

Congress amended § 301(g) in 1987 to limit the availability of § 301(g) variances to chlorine, iron, ammonia, color, and total phenols, in the absence of specific EPA rulemaking to add additional pollutants to the eligibility list.⁸ Apparently concerned about the prospect that the rigidity of the resulting scheme for nonqualifying pollutants would meet with a hostile judicial reaction,⁹ Congress added a “fundamentally different factors” variance provision in § 301(n) (applicable to BCT as well as BAT). The FDF variance essentially mirrors the variance standards developed by EPA for BPT.¹⁰

§ 13:58 Effluent standards and limitations—Technology-based discharge limitations—BCT and BAT: The final level of control—Heat

⁵CWA § 301(g)(2), 33 U.S.C.A. § 1311(g)(2). The statutory language relating to aquatic life is similar, but not identical, to § 316(a). It states that the modification must “assure . . . the protection and propagation of a balanced population of shellfish, fish and wildlife, and allow recreational activities, in and on the water.” This provision is arguably somewhat less protective than § 316(a), which requires protection of a balanced “indigenous” aquatic population.

⁶CWA § 301(c), 33 U.S.C.A. § 1311(c), variances are discussed in § 13:61.

⁷See 50 Fed. Reg. 44673 (1985). Elimination of § 301(g) was high on the list of legislative priorities for the 97th Congress’s reauthorization of the law.

⁸The statutory listing criteria place the burden of proof on listing proponents and are designed to prevent the addition of pollutants that are toxic to the list.

⁹Remarks of Philip Cummings, Majority Counsel, Senate Committee on Public Works and the Environment, Subcommittee on the Environment, July 1987.

¹⁰The criteria are that: (1) the facility be fundamentally different from the ones used in developing the applicable guidelines, other than by the cost of employing implementing technology; (2) the information relied upon either was provided to EPA during its § 304 standard-setting rulemaking, or the applicant did not have a reasonable opportunity to provide it at that time; (3) the treatment level proposed as an alternative is no less stringent than justified to account for the fundamental differences; and (4) the alternative will not produce “markedly more adverse non-water quality environmental impacts than those associated with the national limitations.”

Point source discharges of heat (“thermal pollution”)¹ are regulated under the Act’s technology-based schema, but must be dealt with separately in light of § 316 of the Act and EPA’s approach to regulating the primary point source category of relevance, steam electric power plants. Indeed, the entire history of thermal pollution regulation in the United States may be likened to a tug-of-war between EPA and the electric utility industry.

EPA initially promulgated steam electric point source effluent guidelines for heat based on its application of the § 304(b) technology criteria, which prohibited the discharge of heat except from cooling pond or cooling lake outlets or cooling tower blowdown.² The guideline was invalidated by the Fourth Circuit in *Appalachian Power Company v. Train*,³ on the ground that the Agency’s cost effectiveness analysis failed to provide an adequate comparison of the cost of achieving the level of effluent reduction mandated and the “ecological benefits to be derived therefrom.”⁴

EPA has not subsequently repromulgated BAT regulations for heat and thus, where pressed to establish BAT for a given source, would set BAT on the basis of *ad hoc* “best professional judgment,” in similar fashion to its approach to the initial round of NPDES permits issued in the early 1970s before the promulgation of many BPT guidelines.⁵ EPA has not, however, issued many permits containing BAT limits because of the availability of a special variance for heat contained in § 316 of the Act. Virtually all dischargers whose thermal component is sufficient to require a separate effluent limitation apply for § 316 variances on the theory that whatever level EPA set a best professional judgement BAT limit would be more stringent than any § 316-derived limit.⁶

Section 316 requires consideration of both the environmental effects of the discharge of heat⁷ and the technological design of the cooling water intake structure.⁸ In order to qualify for the variance the applicant must demonstrate, following an adjudicatory hearing,⁹ that the effluent limitations that would be imposed under § 301 are more stringent than necessary and the alternate effluent limitations

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¹Heat can have an adverse effect on aquatic organisms in a number of ways. It changes the dissolved oxygen regime, for example, and at the same time alters the metabolic rate of many organisms. Fish can be killed by thermal shock, or if they become acclimated to living in a warm plume, by cold shock if the source shuts down. In its extreme, heat discharges can contribute to long-term species substitution in confined ecosystems such as lakes.

²39 Fed. Reg. 36186 (1974) (adopting effluent guidelines including 40 C.F.R. § 423.13(1), subsequently repealed, as discussed below). *See also* 40 Fed. Reg. 7095, 15690 (1975).

³*Appalachian Power Company v. Train*, 545 F.2d 1351 (4th Cir. 1976).

⁴*Appalachian Power Company v. Train*, 545 F.2d 1351 (4th Cir. 1976). The court’s reasoning hinged on its focus on the requirement of § 301(b)(2)(A) that BAT limits “result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants” as requiring specific consideration of receiving water benefits in setting BAT. EPA’s analysis had focused only on effluent reduction benefits. The court’s analysis seems clearly contrary to both the letter of the statute and the legislative history.

⁵EPA’s guidelines for BPJ permit limits are found at 40 C.F.R. § 125.3.

⁶*See In Re Public Serv. Co. of N.H.*, 10 Env 1257 (1977) (Decision of Administrator).

There are situations in which this assumption, which lies behind EPA’s own reasoning for not rushing to repromulgate thermal BAT guidelines, would not hold true, particularly if the Agency were to aggressively apply § 316(b), discussed in this section, which relates to intake structures. One can conceive of receiving waters containing relatively heat-sensitive aquatic organisms that are not water-quality-limited under state law, and thus which would compel a stringent § 316-derived limit.

⁷CWA § 316(a), 33 U.S.C.A. § 1326(a).

⁸CWA § 316(b), 33 U.S.C.A. § 1326(b).

⁹The requirement of an adjudicatory hearing was established in *Seacoast Anti-Pollution League v. Costle*, 572 F.2d 872, 8 Env’tl. L. Rep. (Env’tl. L. Inst.) 20207 (1st Cir. 1978), *cert. denied sub nom.*

proposed are adequate, taking into account the interaction of heat with other pollutants, to “assure the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on” the receiving water. Section 316(b) requires that the “location, design, construction and capacity of the cooling-water intake structures reflect the best technology available for minimizing adverse environmental impact.”¹⁰

In 1993, EPA agreed to issue three separate rulemakings implementing Section 316(b).¹¹ EPA’s proposed regulations implementing § 316(b) that set forth national requirements applicable to the location, design, capacity, and construction of cooling water intake structures in order to meet the best-technology-available standards for reducing adverse environmental impacts associated with those structures. EPA’s objectives include the substantial reduction of negative impacts resulting from impingement (pinning of marine organisms against cooling water intake structures) and entrainment (drawing of marine organisms into cooling water intake systems) at new and existing facilities and the preservation of endangered aquatic organisms inhabiting nearby ecosystems.

EPA issued rules for all new cooling water intake structures in December 2001 (Phase I). In February 2004 and June 2006, EPA issued rules for all existing electric-generating facilities, Phase II and Phase III, respectively. The Phase II rule and portions of the Phase III rule were later remanded to EPA for reconsideration. As part of that reconsideration, on May 19, 2014, EPA issued a final rule for cooling water intake structures at existing facilities. The May 19 rule requires existing facilities that have or are required to have an NPDES permit, are designed to withdraw more than two million gallons per day from waters of the United States, and use at least twenty-five percent of the withdrawn water exclusively for cooling purposes to: (i) achieve a national best-technology-available standard for impingement mortality; (ii) implement site-specific entrainment requirements; and (iii) and achieve national best-technology-available standards for impingement mortality and entrainment for new units.¹²

§ 13:59 Effluent standards and limitations—Technology-based discharge limitations—BCT and BAT: The final level of control—Technology-based effluent standards for toxic pollutants: BAT

Effluent limitations for toxic pollutants must be premised either on technology-based criteria developed under §§ 301(b)(2)(C), (D) and 304(b)(2)(B), or on alternative effluent limitations established under § 307(a). The latter are discussed in a subsequent section of this chapter.¹

The history of technology-based limitations for toxic pollutants involves a fascinat-

Public Serv. Co. of N.H. v. Seacoast Anti-Pollution League, 439 U.S. 824 (1978).

¹⁰CWA § 316(b), 33 U.S.C.A. § 1326(b).

¹¹For more information on EPA’s cooling water intake rulemaking, see U.S. EPA, Cooling Water Intakes—Rulemaking History, available at <http://water.epa.gov/lawsregs/lawguidance/cwa/316b/rules.cfm>.

¹²For more information on the May 19, 2014 final rule, see U.S. EPA, Cooling Water Intakes, <http://water.epa.gov/lawsregs/lawguidance/cwa/316b/#final>. See also Craig P. Wilson and Maureen O’Dea Brill, EPA Promulgates Final Standards for Cooling Water Intake Structures, http://www.klgates.com/epa-promulgates-final-standards-for-cooling-water-intake-structures-06-03-2014/#_ftnref1.

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¹See § 13:70. There are actually two additional ways in which toxic effluent limitations can be established. The first is by means of water-quality-based or water-quality-related standards promulgated pursuant to §§ 303 or 302 of the Act. The second is by means of “toxic effluent standards” promulgated under § 307(a)(2). The latter are “control requirements based on an established relationship between” the pollutant and a “receiving water/ecosystem impact.” 3 Environmental Policy Division,

ing interrelationship between litigation under the 1972 Act's requirement that all sources apply the "best available technology economically achievable" for all pollutants by 1983² and the 1977 amendments, which extended the compliance deadline and limited BAT to toxic pollutants and nonconventional pollutants.³ A brief restatement of the history is required for a full understanding of the present scheme.

In 1973, the Natural Resources Defense Council (NRDC) and several other environmental organizations commenced a lawsuit in which they alleged that EPA had defaulted on a mandatory duty arising under § 307(a)(1) of the Act to establish effluent limitations for toxic pollutants. That action was settled and the consent decree agreed to by the parties established the basic framework for decision-making that was to drive the 1977 amendments related to toxics.⁴

The NRDC consent decree compelled EPA to develop technology-based BAT effluent guidelines for 65 toxic pollutants discharged by 21 industry subcategories contained on a list appended to the decree (the industries are called "primary" industries in EPA's regulations) and established a year-by-year schedule for promulgating the required guidelines. The decree also established criteria for removing pollutants from the list of 65,⁵ as well as a procedure for adding pollutants to the list. Under the statutory scheme of the 1972 Act it was unclear whether toxic pollutants could be the subject of BAT limitations or whether § 307 health-based limitations were the exclusive means of regulating them. EPA's NRDC agreement cast the die in the direction of BAT. Moreover, although § 307 clearly governed which pollutants should be regulated and provided general listing criteria, it provided no criteria for delisting pollutants. The consent decree essentially made that law.

The decree provides that pollutants can be delisted where the existing standards are limiting, where the pollutants exist in intake water and are thus only passed through the dischargers, where the pollutants are undetectable using state-of-the-art equipment or are present in only a small number of unique sources, where they are in such small quantities as not effectively removable, and where the amounts discharged are not likely to cause adverse effects.⁶

The decree, which also contains provisions relative to the establishment of health-based limitations⁷ figured prominently in the congressional debates leading up to enactment of the 1977 Clean Water Act. Although the only explicit reference to the consent decree is § 301(b)(2)(C)'s incorporation by reference of the list of 65 pollutants appended to the decree for which the Act established a mandatory compliance

Congressional Research Service, A Legislative History of the Clean Water Act of 1977, 95th Cong., 2d Sess. 460 (Comm. Print 1978) (House Debate on Conference Report) (remarks of Sen. Muskie). EPA has to date promulgated toxic effluent limitations for aldrin/dieldrin, DDT, Endrin, Toxaphene, Benzidine, and PCBs. *See* 40 C.F.R. § 129; *see also* *Hercules, Inc. v. EPA*, 598 F.2d 91, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20811 (D.C. Cir. 1978). Section 307(a)(2) limitations are enforceable against dischargers whether or not they are contained in the discharger's permit. *See* CWA § 402(k), 33 U.S.C.A. § 1342(k).

²CWA § 301(b)(2)(A) (version in force in 1972).

³For a general discussion of nonconventional pollutants, *see* § 13:57.

⁴Several industry groups who had intervened in the action disagreed with the terms of the settlement and challenged its legality. *See* *Environmental Defense Fund v. Costle*, 561 F.2d 904, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20547 (D.C. Cir. 1977) (remanding decree to district court for consideration of legal arguments relative to the power of EPA to agree to terms, subsequently rejected by district judge who left decree intact).

⁵This is commonly referred to as the "paragraph 8" procedure, from the number of the paragraph in the decree in which it is found.

⁶*Nat. Res. Def. Council, Inc. v. Train*, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20588 (D.D.C. 1976) (settlement agreement).

⁷These are discussed in § 13:70.

deadline of July 1, 1984, the general thrust of the 1977 amendments dealing with toxics tracks the approach taken in the consent decree, particularly in the retention of the consent decree's bias in favor of BAT limitations over impact-based limitations.⁸

The methodology for the development of BAT for toxics begins with the listing of the pollutant under § 307(a) for pollutants not already on the list of 65. The statutory listing factors, taken essentially from the NRDC decree, are persistence, degradability, the presence of affected organisms in receiving waters, the importance of affected organisms, and the nature and extent of the effect on them.⁹

BAT effluent limitations must meet the general criteria set forth in § 301 and be formulated pursuant to the more specific guidance of § 304(b)(2). The overarching criterion is that the limitations be premised on the "best available technology economically achievable" by the relevant industrial subcategory.¹⁰ Section 304(b)(2) makes it clear that the technology employed may be based on treatment techniques, process and procedure innovations, operating methods, or other means, thereby encouraging technologies other than "black box" technologies.¹¹

Section 304(e) allows limitations to be based on "best management practices" for toxic pollutants. EPA has administratively limited this authority to controlling plant site runoff and spills,¹² although the statute arguably authorizes broader application.

As in the case of BPT, § 304(b) requires consideration of a number of "factors" in setting BAT, which are of greatest significance in dividing industries into subcategories to which uniform limitations are to be applied. These factors are the age of equipment and facilities,¹³ the processes employed, engineering aspects of various control techniques, the cost of achieving the effluent reduction, non-water-quality environmental impacts, and "such other factors as the Administrator deems appropriate."¹⁴ Consideration of costs, in contrast to BPT, does not involve a cost-benefit analysis,¹⁵ but instead involves weighing costs in the overall determination of the achievability of technology. EPA's primary legal obligation with respect to costs is to explain its cost analysis fully,¹⁶ and the standard by which the costs are

⁸See 3 Environmental Policy Division, Congressional Research Service, A Legislative History of the Clean Water Act of 1977, 95th Cong., 2d Sess. 459-61 (Comm. Print 1978) (House Debate on Conference Report).

⁹Of the criteria, the one relating to the importance of affected organisms provides a significant discretionary latitude. As noted above, the 1977 amendments treat pollutants contained on the NRDC list more stringently in terms of deadlines than pollutants not on the list.

¹⁰CWA § 301(b)(2)(A), 33 U.S.C.A. § 1311(b)(2)(A).

¹¹See 33 U.S.C.A. § 1311(b)(2); *American Petroleum Inst. v. EPA*, 540 F.2d 1023, 1033, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20748 (10th Cir. 1976).

¹²See 40 C.F.R. § 122.44(k).

¹³The age factor relates to both the engineering feasibility of applying the equipment needed to achieve BAT to the production stream and to physical and economic constraints in installing it. *American Iron & Steel Inst. v. EPA*, 526 F.2d 1027, 1048, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20068, 20076 (3d Cir. 1975).

¹⁴This latter phrase has been interpreted as intended to give EPA latitude to add new factors. *Kennecott Corp. v. EPA*, 780 F.2d 445, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20435 (4th Cir. 1985).

¹⁵Compare CWA § 304(b)(1)(B), (4)(B) with (2)(B). See also *American Iron and Steel Institute v. E.P.A.*, 526 F.2d 1027, 8 Env't Rep. Cas. (BNA) 1321, 6 Env'tl. L. Rep. 20068 (3d Cir. 1975), *judgment amended*, 560 F.2d 589, 10 Env't Rep. Cas. (BNA) 1549, 7 Env'tl. L. Rep. 20624, 44 A.L.R. Fed. 813 (3d Cir. 1977) (discussing § 301(b)(2)(A) of the Act and pointing out uncertainty in the role cost is to play under the statute); 45 Fed. Reg. 49454 (1980) (proposed regulation in which there is a discussion of how EPA "considers" costs in setting BAT).

¹⁶*Ass'n of Pacific Fisheries v. EPA*, 615 F.2d 794, 815, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20336,

measured is whether they are “reasonable.”¹⁷

Many of the statutory requirements have been refined in their application to specific industries and litigation reviewing the resulting guidelines. Among the concepts that have been so refined are the standards by which technology may be deemed to be “available,”¹⁸ by which it may be considered to be “achievable,”¹⁹ and, of course, the degree to which economic factors may affect the establishment of guidelines.

EPA’s approach to establishing BAT, which is consistent with the legislative history, has generally been to fix the limitations at the levels achievable by “the optimally operating plant, the pilot plant which acts as a beacon to show what is possible.”²⁰ The Agency’s selection of pilot plants is sometimes the target of criticism on the ground that the plant chosen is not representative of some or all of the subcategory to which the technology will be applied.²¹

Section 301(b)(2)(A) requires, in addition, that the limitations represent “reasonable further progress toward the national goal of eliminating the discharge of all pollutants” and that BAT limitations “require the elimination of discharges of all pollutants if . . . such elimination is technologically and economically achievable” for the category or class at issue. Accordingly, EPA has occasionally adopted a “no discharge” limit for a pollutant.²²

Inherent in the technology-forcing aspect of BAT is a lack of clear data within all industry subcategories upon which a determination of “availability” and “achievability” can be made. Thus, one of the most often litigated methodologies employed by EPA in setting BAT is its assumption that technology can be transferred from one industry, or one industrial subcategory, to another where it has never before been employed. The Eighth Circuit Court of Appeals laid down a three-part test in 1975 that has been followed generally by other courts, establishing the Agency’s

20343 (9th Cir. 1980). EPA produces a Development Document for all of its effluent guidelines. An economic analysis either is included as a part of it or is undertaken in a separate document associated with it.

¹⁷American Iron & Steel Inst. v. EPA, 526 F.2d 1027, 1058, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20068, 20081 (3d Cir. 1975). *Accord* Rybachek v. EPA, 904 F.2d 1276, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20973 (9th Cir. 1990).

¹⁸See *Hooker Chems. & Plastics Co. v. Train*, 537 F.2d 639, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20478 (2d Cir. 1976) (phosphorus manufacturing).

¹⁹See *American Meat Inst. v. EPA*, 526 F.2d 442, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20029 (7th Cir. 1975) (ammonia limitation in meat processing guidelines); see also *Chemical Mfrs. Ass’n v. EPA*, 870 F.2d 177, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20989 (5th Cir. 1989), *clarified on reh’g and remanded in part*, 885 F.2d 253, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20076 (1990), *cert. denied sub nom.*, *PPG Indus., Inc. v. EPA*, 495 U.S. 910, 110 S. Ct. 1936 (1990) (rejecting claim that OCPSF guidelines for toxics are unachievable).

²⁰*Kennecott v. EPA*, 780 F.2d 445, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20435 (4th Cir. 1986). See 3 Environmental Policy Division, Congressional Research Service, A Legislative History of the Clean Water Act of 1977, 95th Cong., 2d Sess. 798 (Comm. Print 1978) (House Debate on Conference Report). BAT is usually, but not necessarily, less stringent than § 306 New Source Performance Standards. See discussion in *American Iron & Steel Inst. v. EPA*, 526 F.2d 1027, 1058, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20068, 20081 (3d Cir. 1975).

²¹See, e.g., *FMC Corp. v. Train*, 539 F.2d 973, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20382 (4th Cir. 1976) (synthetic plastics) (establishing the principle that EPA had to establish achievability before compliance date if its development document, relying on pilot plant was insufficient); *Hooker Chems. & Plastics Co. v. Train*, 537 F.2d 620, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20467 (2d Cir. 1976) (phosphorus manufacturing) (holding that EPA was required to consider whether technology shown to be successful in pilot plant located in a warm climate would be feasible in a cold climate).

²²See, e.g., *Hooker Chems. & Plastics Corp. v. Train*, 537 F.2d 620, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20467 (2d Cir. 1976) (no discharge of process water for phosphorus industry set aside); see also *Kennecott Corp. v. EPA*, 780 F.2d 445, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20435 (4th Cir. 1986) (upholding no discharge limitation for blast furnace slag granulation in the primary lead industry).

burden in technology transfer situations. The Agency must (1) show that the transfer technology is available outside the industry in which it is employed; (2) determine that the technology is transferable to the transferee industry; and (3) make a reasonable prediction that the technology if used will be capable of removing the increment required by the effluent standards.²³ Courts have given considerable deference to EPA's technology transfer judgments.²⁴

Another common BAT issue is whether the EPA can lawfully impose technology that is clearly not in use within the industry at the time the guidelines are promulgated. The Agency's burden on this score is to demonstrate "the existence of some technology which, if implemented, may reasonably be expected to achieve the . . . standards" by the compliance date.²⁵ The early cases, which are the source of most of the law on this topic, dealt with standards that did not need to be achieved for six to eight years from promulgation. The courts imposed a continuing duty on EPA to review the development of technology, and an obligation to revise the BAT standard if its prediction about it proved false.²⁶

Industries critical of EPA's chosen technology argued that the guidelines should be struck down if the Agency's development document did not clearly demonstrate that achievability was possible by the compliance date. Those arguments were predicated in part by the Act's bar against challenging regulations as a defense to an enforcement action,²⁷ the industries arguing that to leave an uncertain technology-forcing regulation in place was to put the industries in jeopardy of noncompliance without any meaningful opportunity for judicial review. The Third Circuit, in *American Iron and Steel Institute v. EPA*, responded by stating that the matter was subject to further review by the court of appeals following EPA's mandatory review of the guideline pursuant to § 301(d) five years after its promulgation.²⁸ The Fourth Circuit, in *FMC Corp. v. Train*,²⁹ stated, similarly, that where technology postulated to meet the limitations for the entire affected subcategory does not in fact pan out, EPA has a duty to reconsider the guidelines prior to the implementation date, and if EPA fails at that time to demonstrate achievability, the issue can be resurrected on review.³⁰

A final issue is the extent to which EPA must account in the effluent guidelines

²³See, e.g., *Kennecott Corp. v. EPA*, 780 F.2d 445, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20435 (4th Cir. 1986); *Tanners' Council v. Train*, 540 F.2d 1188, 1192, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20379, 20380 (4th Cir. 1976); *CPC Int'l v. Train*, 515 F.2d 1032, 1048, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20392, 20399 (8th Cir. 1975).

²⁴See *Kennecott Corp. v. EPA*, 780 F.2d 445, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20435 (4th Cir. 1986) (upholding EPA's use of technology used in a Japanese facility in a production process as transferable to another industry as wastewater control technology).

²⁵*Hooker Chems. & Plastics Co. v. Train*, 537 F.2d 620, 636 (2d Cir. 1976); *American Meat Inst. v. EPA*, 526 F.2d 442, 463, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20029, 20038 (7th Cir. 1975).

²⁶See *FMC Corp. v. Train*, 539 F.2d 973, 985, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20382, 20386 (4th Cir. 1976); *American Iron & Steel Inst. v. EPA*, 526 F.2d 1027, 1062, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20068, 20083 (3d Cir. 1975).

²⁷CWA § 509(b)(2), 33 U.S.C.A. § 1369(b)(2).

²⁸*American Iron & Steel Inst.*, 526 F.2d 1027, 1062, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20068, 20083 (1975). The Third Circuit's solution provides little solace for industries subject to limitations promulgated less than five years prior to the compliance date, and presumably the shorter the time between guideline promulgation and compliance date the greater burden EPA has to show achievability and availability in its initial record.

²⁹*FMC Corp. v. Train*, 539 F.2d 973, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20382 (4th Cir. 1976).

³⁰An interesting issue not addressed by either court is what happens if the Agency fails to undertake any subsequent rulemaking in the face of clear notice that the industry believes the guideline to be unachievable, and the implementation deadline is looming. The Fourth Circuit's opinion implies, without stating so, that the Agency's duty is mandatory, giving rise to a mandamus right. The Third Circuit's approach would appear to defer any duty to the five-year review point.

for anomalies within the subcategory of the industry affected by them. This issue normally arises where the pilot technology relied upon by the Agency may be more difficult to employ at one group of plants than at others. In *American Iron & Steel Institute*, the Third Circuit stated that EPA is not required, *sua sponte*, to consider engineering issues “of particular or localized concern,” such as water supply problems experienced by a few steel facilities in arid areas.³¹ The Second Circuit, however, stated in *Hooker Chemical & Plastics Co. v. Train* that EPA was required to specifically consider the costs of employing recycling technology in cold regions if there is “at least one manufacturer in a cold climate.”³²

Most of the litigated issues arise because EPA’s development document does not completely address the issue or raises questions that are inadequately answered during the administrative rulemaking process. The development document is the centerpiece of any effluent guidelines rulemaking. Though compiled by staff working in the effluent guidelines division of the water program, development documents are primarily the workproduct of consultants hired by EPA to do field and analytical work. The depth of research will understandably vary with the amount of money allotted to the contractor and the contractor’s expertise. The quality of development documents has not been uniform, and gaps in the document’s scope have been the source of more than one remand.

Although originally precluded for BAT, a “fundamentally different factors variance,” with statutory eligibility criteria, was made available to BAT in 1987, with the addition of § 301(n).³³

§ 13:60 Effluent standards and limitations—Technology-based discharge limitations—BCT and BAT: The final level of control—Compliance deadline extensions and transitional permits

The 1977 Clean Water Act allowed an extension of the deadline for achieving BAT to July 1, 1987, for facilities that install an innovative production process or control technique meeting the criteria established by § 301(k).¹ The deadline was changed by the Water Quality Act of 1987 to “two years after the date for compliance with such effluent limitation which would otherwise be applicable under such subsection” to conform § 301(k) to the other deadline extensions provided in the 1987 Act. The provision was also made available with respect to conventional pollutants.

The criteria require a showing that the innovative process “will result in effluent reduction significantly greater than” would be accomplished through adherence to the standards and moves toward the goal of eliminating the discharge of all pollutants. For control techniques, the criteria are that the technique have “a substantial likelihood for enabling the facility to comply with the applicable effluent

Whether nonaction at that point must take the form of formal rulemaking subject to court of appeals review is an open issue.

³¹*American Iron & Steel Institute*, 526 F.2d 1050, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20068, 20077 (1975).

³²*Hooker Chem. & Plastics Co. v. Train*, 537 F.2d 620, 634, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20467, 20475 (2d Cir. 1976).

³³The criteria are that: (1) the facility be fundamentally different from the ones used in developing the applicable guidelines, other than by the cost of employing implementing technology; (2) the information relied upon either provided to EPA during its § 304 standard-setting rulemaking or the applicant did not have a reasonable opportunity to provide it at that time; (3) the treatment level proposed as an alternative is no less stringent than justified to account for the fundamental differences; and (4) the alternative will not produce “markedly more adverse non-water quality environmental impacts than those associated with the national limitations.”

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¹EPA had no regulations implementing this provision as of the 1987 amendments.

limitation by achieving a significantly greater effluent reduction than that required by the . . . limitation and moves toward the national goal of eliminating the discharge of all pollutants” or involves a system “that has the potential for significantly lower costs than” the technology determined by EPA to be economically achievable.

Processes or control techniques meeting the above criteria may be approved for compliance extension, however, only on a finding by (or approved by) EPA that the system “has the potential for industrywide application.”

Since EPA was, and continues to be, slow in its adoption of toxic BAT effluent guidelines,² a number of NPDES permits were issued containing effluent limitations for toxic discharges based on an *ad hoc* basis pursuant to 40 C.F.R. § 125.3,³ and many permits issued to dischargers of toxic pollutants contained no effluent limitations specifically covering such pollutants. Although EPA’s regulation requires the permit writer seeking to insert *ad hoc* limits into a permit to apply the statutory criteria in establishing such limitations, there are inevitably cases in which the *ad hoc* limitations are either more or less stringent than would be required by subsequently promulgated BAT effluent guidelines. In such a case, or the case where a permit does not contain a relevant limitation at all, the question arises whether the permit must, or may, be amended to incorporate the national guidelines.

EPA’s treatment of the problem of transitional permits was somewhat convoluted. Permits issued or existing on or before June 30, 1981 for any of the “primary industry” subcategory facilities were required to be modified to include any applicable toxic effluent limitations or standards that had already been promulgated or “approved”⁴ or a condition requiring that they be reopened for insertion of any subsequently promulgated toxic standards or limitations. At the point EPA issues a relevant standard or limitation applicable to the permittee’s subcategory, the permit is required to be modified or revoked and reissued to insert the new standard or limitation only if it is more stringent than the existing *ad hoc* limitation in the permit (if any) or if it covers a pollutant not addressed in the permit. Thus, “backsliding” to insert a less stringent national standard or limitation was not permitted.

Permits issued after July 1, 1984, are required to contain toxic effluent limitations covering all toxic pollutants contained on the NRDC consent decree list or subsequently listed under § 307(a)(1), whether or not EPA has promulgated national standards and limitations for such pollutants or industry subcategory.⁵ Such permits are not required to incorporate the reopener clause, but the regulation does not prohibit the permit writer from including it.⁶

A final transitional issue involves the rare case of EPA’s promulgation of toxic impact-based effluent limitations under § 307(a)(2). Such standards are enforceable even in the absence of permit limits and are required by § 307(a)(6) to be effective and enforceable not more than a year after promulgation, with a maximum cap of three years for source categories that EPA determines cannot feasibly meet the limitation earlier.⁷

²The pace of the current effluent guideline program is largely governed by a consent decree committing EPA to schedules for proposing and finalizing effluent guidelines as required by § 304(m) of the Act, 33 U.S.C.A. § 1314(m). *Nat. Res. Def. Council v. Browner*, No. 89-2980 (D.D.C. Jan. 31, 1992).

³These are generally referred to as “best professional judgment,” or “BPJ” effluent limitations.

⁴40 C.F.R. § 122.44(c)(1). “Approved” limitations are preexisting limitations that EPA determines satisfy the BAT criteria.

⁵40 C.F.R. § 122.44(c)(2).

⁶40 C.F.R. § 122.44(c)(2). *See* 49 Fed. Reg. 31842 (1984). Other permittees and limitations are governed by the general reopener and reissuance provisions of the NPDES regulations, 40 C.F.R. §§ 122.43, 122.62.

⁷As noted earlier, EPA has promulgated § 307(a)(2) limitations for only a handful of pollutants.

§ 13:61 Effluent standards and limitations—Technology-based discharge limitations—BCT and BAT: The final level of control—Variances: Section 301(c) economic variances

Section 301(c) of the Act authorizes a modification of BAT limitations applicable to nontoxic, nonconventional pollutants upon a showing by the discharger that the modified limitations “(1) will represent the maximum use of technology within the economic capability of the owner or operator and (2) will result in reasonable further progress toward the elimination of the discharge of pollutants.”¹ Unlike the FDF variance, a § 301(c) economic variance may be granted based on a showing that an individual discharger simply cannot afford to comply with BAT requirements.² Although EPA has promulgated regulations providing procedures for application for and determination of § 301(c) variance requests,³ it has yet to promulgate regulations on the substantive requirements for the grant of a § 301(c) variance.⁴

There are several restrictions on the grant of a § 301(c) variance. First, the variance is only available from BAT limitations; § 301(c) is not applicable to BPT limitations. Second, the variance is only available from limitations on nonconventional pollutants. The section expressly provides for a variance from the BAT requirements applicable to toxic and nonconventional pollutants. Although this would seem to authorize a § 301(c) variance from BAT toxic limits, § 301(l) precludes any modification of effluent limitations applicable to toxic pollutants.⁵ Third, in some cases, a § 301(c) variance may not even be available from BAT limits on nontoxic, nonconventional pollutants if that pollutant is being limited as an “indicator” for a toxic pollutant. Finally, § 301(j) limits the period for applying for § 301(c) variances to nine months after promulgation of the applicable effluent guideline.⁶

§ 13:62 Effluent standards and limitations—Technology-based discharge limitations—BCT and BAT: The final level of control—Removal of pollutants in intake water (net/gross issue)

In many cases the wastewater discharged by an industrial source was initially brought into the facility for use in the industrial process from a surface or groundwater source that already contained pollutants. One of the persistent controversies under the Act has been whether EPA could limit the total amount of pollutants in the facility’s waste stream regardless of the origin of the pollutants or whether the Agency could only limit the amount of pollutants added by the facility. Industry argued that EPA could not set limitations on the “gross” amount of pollut-

That fact is probably a product of two factors: its workload pushing out BATs and a rather cumbersome rulemaking process, which includes provision for quasi-adjudicatory hearings, under § 307(a)(2).

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¹CWA § 301(c), 33 U.S.C.A. § 1311(c).

²See *EPA v. Nat’l Crushed Stone Ass’n*, 449 U.S. 64, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20924 (1980).

³40 C.F.R. §§ 122.21(l)(2), 124.62.

⁴40 C.F.R. Part 125; subpart E is reserved for those regulations.

⁵See *Chemical Mfrs. Ass’n v. Nat. Res. Def. Council, Inc.*, 470 U.S. 116, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20230 (1985).

⁶Section 301(j)(1)(B) limits applications for modifications of the BAT requirements in § 301(b)(2)(A) as it applies to nonconventional pollutants to 270 days from the date of promulgation of the requirements or 270 days after the adoption of the 1977 Clean Water Act amendments, whichever is later. See 40 C.F.R. § 122.21(l)(2)(i).

ants in effluent, but only on the “net” amounts added by the industrial source itself.¹ EPA conceded early in the development of its water program that in some cases effluent limitations should be written on a “net” basis.²

EPA’s current regulations contain a “net/gross” provision.³ The regulations allow a discharger to request a credit from otherwise applicable effluent limitations based on the presence of pollutants in its intake waters.⁴ There are several significant prerequisites to obtaining a credit. For example, a credit will be granted only if (1) credits are specifically authorized in the effluent limitations guidelines or the applicant is able to demonstrate that its pollution control system would produce an effluent meeting the guidelines but for the presence of the pollutants in the intake water; (2) the constituents of “generic” pollutants such as BOD and TSS in the discharger’s effluent are “substantially similar” to the constituents of these pollutants in the intake water;⁵ and (3) the discharger demonstrates that the intake water is drawn from the same body of water into which the discharge is made or, in the event it is not, the permit writer finds that no environmental degradation will result.⁶ In any case, the credit will be granted only to the extent necessary to achieve the applicable effluent limitations up to the maximum amount of pollutants in the intake water.⁷

§ 13:63 Effluent standards and limitations—Technology-based discharge limitations—BCT and BAT: The final level of control—Mass- versus concentration-based limitations

The basic goal of the Act is the elimination of the discharge of pollutants, and that goal is reflected in the degree of effluent reduction achieved by the technology-based effluent limitations. In order to achieve an actual reduction in the amount of pollutants discharged by a source, most effluent limitations are written as limits on the total quantity of pollutants that may be discharged. These “mass” based limits are phrased as limitations on the quantity of pollutants that may be discharged per unit of production. For example, the BPT limitation in the Cracking Subcategory of the Petroleum Refining Point Source Category provides that a source may not discharge more than 6.9 pounds of TSS (total suspended solids) per 1000 barrels of feedstock.¹ Thus, at a given level of production, there is an actual limit on the number of pounds of pollutants that may be discharged. EPA regulations that implement the NPDES permit program state a clear preference for mass limitations.²

The alternative to mass-based limitations are “concentration-based” limitations,

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¹Industry groups had argued, *inter alia*, that the definition of “discharge of a pollutant” in § 502(12) referred to the “addition” of pollutants to navigable waters from a point source, and where the pollutants had initially been present in the intake water they were not “added” by the facility. See *Appalachian Power Co. v. Train*, 545 F.2d 1351, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20732 (4th Cir. 1976).

²See *American Iron & Steel Inst. v. EPA*, 526 F.2d 1027, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20068 (3d Cir. 1975).

³40 C.F.R. § 122.45(g).

⁴Establishing “net” limitations by means of a credit from otherwise applicable effluent guidelines was upheld in *American Petroleum Inst. v. EPA*, 540 F.2d 1023, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20748 (10th Cir. 1976).

⁵These “generic” pollutants actually include a large number of unidentified constituents.

⁶40 C.F.R. § 122.45(g)(1), (2), (4).

⁷40 C.F.R. § 122.45(g)(3).

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¹40 C.F.R. § 419.22.

²40 C.F.R. § 122.45(f).

which limit the concentration of pollutants in wastewater. In contrast to mass-based limits, a concentration-based limitation might not result in any actual reduction in the amount of pollutants discharged from a facility. Sources may achieve the applicable concentration merely by diluting the waste stream. Accordingly, the NPDES regulations prohibit use of dilution as a treatment technique for meeting technology-based effluent limits.³

Concentration-based limitations may nevertheless be written in a number of circumstances.⁴ These include limitations for pollutants like pH or temperature, which are not suitable for regulation based on mass, or limitations in industries where there is a wide and uncontrollable variation in the amount of wastewater per unit of production. For example, the BPT limitations for oil and grease for the Offshore Subcategory of the Oil and Gas Extraction Point Source Category provide that the concentration of oil and grease discharged may not exceed 72 milligrams per liter of produced waters.⁵ Produced waters are extracted along with oil, and the amount associated with a barrel of oil varies widely not only among different wells but also over the life of a given well. Thus, it would be difficult, indeed probably impossible, to write a workable mass-based limitation expressed in terms of the total quantity of oil and grease per barrel or other reasonable unit of production.

An unavoidable consequence of concentration-based limitations such as the oil and grease limitation used in the example is that greater quantities of pollutants are discharged when the volume of wastewater increases.

§ 13:64 Effluent standards and limitations—Technology-based discharge limitations—New sources and new dischargers—New source performance standards

Section 306 of the Act requires “new sources” within source categories for which new source performance standards (NSPS) are required to meet more stringent effluent limitations than are applicable to existing sources. EPA is required to promulgate standards that reflect “the greatest degree of effluent reduction which the Administrator determines to be achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants.”¹

Section 306(b)(1)(A) contains a list of source categories for which EPA was mandated to develop NSPS. Additions to the list are discretionary with EPA. EPA publishes new source performance standards for the various source categories alongside the other effluent limitations in 40 C.F.R. subpart I.²

As in the case of EPA’s other technology-based standards, its initial NSPS for a number of industry subcategories were challenged during the 1970s. Those lawsuits saw arguments similar to those raised in challenges to the other guidelines, such as

³See 40 C.F.R. § 122.45(f).

⁴40 C.F.R. § 122.45(f)(1)(i) to (iii) authorizes other than mass-based limitations for: “(1) pH, temperature, and other parameters which cannot be expressed in terms of mass; (2) where applicable effluent limitations or standards are expressed in other terms;” or (3) where mass limitations “are infeasible because the mass of the pollutant discharged cannot be related to a measure of operation and “permit conditions assure that dilution will not be used as a substitute for treatment.”

⁵40 C.F.R. § 435.12.

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¹CWA § 306(a)(1), 33 U.S.C.A. § 1316(a)(1).

²40 C.F.R. § 400 (effluent limitations guidelines begin with § 405).

when is the technology “demonstrated,”³ whether the 1983 BAT standards and the NSPS could be equivalent or whether NSPS can be “demonstrated” if BAT is not,⁴ and how cost is to be factored into the standards.⁵ In practice, EPA has commonly equated the NSPS for a given source category with the applicable BAT or BPT. Since § 306(b)(1)(B) requires EPA to periodically update the NSPS in line with advances in technology, the NSPS should, over time, become more stringent than the existing source standards in many subcategories in which they are currently equivalent.

In contrast to the standards for existing sources, the Supreme Court, in *DuPont v. Train*, held that EPA is not required to provide a variance mechanism for new sources.⁶

§ 13:65 Effluent standards and limitations—Technology-based discharge limitations—New sources and new dischargers—What is a new source

A “source” is a “building, structure, facility or installation from which there is or may be the discharge of pollutants.”¹ A “new source” is one in which “the construction is commenced after the publication of proposed regulations prescribing a standard of performance . . . which will be applicable to such source, if such standard is thereafter promulgated in accordance with” § 306.² Although § 306(b)(1)(B) requires EPA to promulgate NSPSs within 120 days of proposal, its penchant for missing statutory deadlines by a long shot creates an understandable problem for potential new sources in light of the statutory language.

EPA’s NPDES regulations alleviate the potential problem posed by the statute by defining new source as one whose construction is commenced after publication of final standards or after publication of proposed standards if they become final within 120 days.³ Construction is “commenced” by the “placement, assembly, or installation of facilities or equipment (including contractual obligations to purchase such facilities or equipment) at the premises where such equipment will be used,

³*FMC Corp. v. Train*, 539 F.2d 973, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20382 (4th Cir. 1976) (record must demonstrate the technology in place at particular plants whose operating characteristics are evident); *see also* *Appalachian Power Co. v. Train*, 545 F.2d 1351, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20732 (4th Cir. 1976); *Tanners’ Council v. Train*, 540 F.2d 1188 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20379 (4th Cir. 1976); *Hooker Chems. & Plastics Corp. v. Train*, 537 F.2d 639, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20478 (2d Cir. 1976); *CPC Int’l v. Train*, 540 F.2d 1329, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20728 (8th Cir. 1976); *Nat’l Renderers Ass’n v. EPA*, 541 F.2d 1281, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20735 (8th Cir. 1976).

⁴*American Petroleum Inst. v. EPA*, 540 F.2d 1023, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20748 (10th Cir. 1976); *American Iron and Steel Inst. v. EPA*, 526 F.2d 1027, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20068 (3d Cir. 1975). NSPS were generally viewed as required to be as least as stringent as BAT. *Nat’l Renderers Ass’n v. EPA*, 541 F.2d 1281, 1289, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20735 (8th Cir. 1976).

⁵Costs must be “considered” but are less a factor than under § 304. *American Iron and Steel Inst. v. EPA*, 526 F.2d 1027, 1058, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20068, 20081 (3d Cir. 1975) (relying on legislative history).

⁶*E.I. du Pont De Nemours & Co. v. Train*, 430 U.S. 112, 138, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20191, 20197 (1977).

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¹CWA § 306(a)(3), 33 U.S.C.A. § 1316(a)(3). A modification, such as a new discharge facility, has been held not to be a “source.” *See Mahelona v. Hawaiian Elec. Co.*, 418 F. Supp. 1328, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20031 (D. 1976). The original Senate Bill, S.2770, specifically covered modifications of existing sources. *See* S. Rep. No. 414, 92d Cong., 1st Sess. 61 (1971). The language relating to modifications was dropped from the bill in conference.

²CWA § 306(a)(2), 33 U.S.C.A. § 1316(a)(2).

³*See* 40 C.F.R. § 122.2.

including preparation work at such premises.⁴

EPA goes further, however. Section 122.29 of its regulations states that, as a general matter,⁵ a source meeting the “new source” definition is nevertheless a new source only if it is constructed at a site where no other source is located, totally replaces the process or production equipment that causes the discharge of pollutants, or its processes are “substantially independent” of those of any existing source on the same site⁶ and an NSPS is independently applicable to it.⁷

Section 122.21(k) of EPA’s NPDES regulations set forth requirements for formal new source status determinations by EPA.

§ 13:66 Effluent standards and limitations—Technology-based discharge limitations—New sources and new dischargers—The consequences of being a new source

New sources¹ must meet the applicable new source performance standards. If they comply with the standards, they are insulated from having any more stringent limitations imposed for a period of ten years following completion of construction or during the period of depreciation allowed under §§ 167 or 169 of the Internal Revenue Code, whichever period is shorter.²

⁴CWA § 306(a)(5), 33 U.S.C.A. § 1316(a)(5). EPA’s NPDES regulations, 40 C.F.R. § 122.29(b)(4), are clearer. EPA defines construction as commencing upon: (1) beginning, as part of a continuous on-site construction program, any “placement, assembly, or installation of equipment” or any “significant site preparation work . . . which is necessary for the placement, assembly, or installation of new source facilities or equipment”; or (2) entering into a “binding contractual obligation for the purchase of facilities or equipment which are intended to be used in its operation within a reasonable time.” The Agency includes within the grasp of the NSPS options that cannot be terminated “without substantial loss” and excludes most engineering and design contracts.

EPA defines “facilities or equipment” as “buildings, structures, process or production equipment or machinery which form a permanent part of the new source and which will be used in its operation, if these facilities or equipment are of such value as to represent a substantial commitment to construct.” 40 C.F.R. § 122.29(a)(5). The definition excludes engineering and design-related facilities and equipment.

⁵The Agency reserves to itself the ability to lay different ground rules in individual NSPS rulemaking, an option the Agency exercised in the NSPS for placer mining, see 40 C.F.R. § 440.144(c), an activity that involves the periodic movement, abandonment, and reactivation of mines, as well as the creation of wholly “new” ones, during the normal course of operation. EPA’s determination to apply several factors, including movement of the mine outside of an NPDES-permitted area, alteration of the nature or quantity of pollutants discharged, and operation of the mine in a permit area that has not been mined during the term of the currently valid NPDES permit, on a case-by-case basis, was upheld in *Rybachek v. EPA*, 904 F.2d 1276, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20973 (9th Cir. 1990).

⁶40 C.F.R. § 122.29(b)(1). EPA defines “site” for these purposes as “the land or water area where any ‘facility or activity’ is physically located or conducted, including adjacent land used in connection with the facility or activity.” 40 C.F.R. § 122.2.

⁷40 C.F.R. § 122.29(b)(2). A source that meets all of the criteria except the latter one is deemed a “new discharger” and is subject to different requirements, which are discussed below.

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¹New source means “any building, structure, facility, or installation from which there is or may be a ‘discharge of pollutants,’ the construction of which commenced: (a) [a]fter promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or (b) [a]fter proposal of standards of performance in accordance with section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal.” 40 C.F.R. § 122.2.

²CWA § 306(d), 33 U.S.C.A. § 1316(d). *See also* 40 C.F.R. § 122.29(d)(1)(i) (makes it clear that such sources are not insulated from more stringent water-quality-based limits or toxic effluent standards); 40 C.F.R. § 122.29(d)(1)(ii) (provides that the source will have to meet the applicable § 301 limit immediately upon the expiration of the ten-year or other protection period, without a start-up grace period).

A significant requirement applicable only to new sources is the application of the National Environmental Policy Act to permits issued by EPA containing NSPSs.³

§ 13:67 Effluent standards and limitations—Technology-based discharge limitations—New sources and new dischargers—New dischargers and modified sources

EPA created a hybrid, the “new discharger,” in its NPDES permit regulations.¹ A new discharger is a “building, structure, facility or installation” from which there may be a discharge of pollutants that “did not commence the discharge of pollutants at a particular site before August 13, 1979,” which is not a new source and which “has never received a finally effective NPDES permit for discharges at that site.”² The term includes indirect dischargers whose discharges commenced after August 13, 1979.

The “new discharger” concept is primarily aimed at mobile point sources such as factory ships and mobile drilling rigs, which move from site to site and would otherwise be considered new sources each time they move. The concept also embraces fixed dischargers that would be new sources but for the fact that there are no NSPS applicable to them at the time they commence construction.³

Essentially, new dischargers are provided the ten-year NSPS protection period if they meet applicable NSPS prior to commencing their discharge.⁴ They are not subject to NEPA, but are subjected to the start-up restriction imposed on new sources.⁵

New construction at a site where there is an already existing source that is not totally independent of the existing source is considered a modification of the existing source and does not qualify for new source or new discharger treatment.⁶

§ 13:68 Effluent standards and limitations—Stormwater discharges—Background

Stormwater, particularly in urban areas, has plagued EPA’s water pollution program, as it did the states prior to enactment of the CWA. EPA’s handling of stormwater discharges over the years has been the subject of criticism from environmental organizations, which view stormwater as a significant source of pollution that has been inadequately regulated.

Stormwater affects the program in two ways. Older municipalities frequently have combined storm and sanitary sewer systems, which during periods of dry weather convey only sewage, but whose volume of water flow increases tremendously following a rain storm. Sewage treatment technology works best with concentrated influent. When significant dilution occurs, the efficiency of the treatment process deteriorates or, worse yet, the treatment regimen can literally be washed out, requiring a long restart period.

EPA has addressed the problem in several ways. First, the Title II design criteria

³See FWPCA § 511(c)(1), 33 U.S.C.A. § 1371(c)(1); 40 C.F.R. § 122.29(c). State-issued permits issued pursuant to §§ 306(c) and 402 are not subject to NEPA. See 40 C.F.R. § 122.29(c).

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¹See discussion at 48 Fed. Reg. 39619 (1983).

²40 C.F.R. § 122.2. The definition goes on to specify certain specific types of facilities the agency intended to cover.

³See 40 C.F.R. § 122.29(b)(2).

⁴40 C.F.R. § 122.29(d).

⁵See 40 C.F.R. § 122.29(d)(4).

⁶40 C.F.R. § 122.29(b)(3).

require treatment plants in municipalities with combined sewers to be designed to accommodate wet weather flows without bypass. In addition, during the 1970s, EPA required municipalities with combined sewers to conduct “infiltration and inflow” analyses as a prerequisite to eligibility for Title II funds. The “I & I” program, as it was called, was intended to uncover leaks in the sewer system where groundwater could enter it and to find and eliminate such things as roof and cellar drain connections, which tend to exacerbate wet weather flows. Finally, the secondary treatment standards are structured to accommodate combined sewer POTW, which have difficulty meeting the percentage removal requirements of the basic limitation.¹

The second category of stormwater discharges encompasses stormwater-only discharges that discharge to a surface water. EPA initially excluded such discharges from the NPDES program and was severely criticized for doing so.² It later reversed its position somewhat and modified the NPDES regulations to accommodate stormwater discharges in 1984,³ treating stormwater discharges as a hybrid point source, subject to special requirements and, to some extent minimal regulation by “general permits.”

40 C.F.R. § 122.26 created a structure that encouraged closer scrutiny of storm sewer systems emanating from heavily industrialized areas and discouraged regulation of rural agricultural systems. The regulations define as “storm water point sources” generically only those that are in large urbanized areas or discharge “from lands or facilities used for industrial or commercial activities.” Other stormwater discharges were considered such for regulatory purposes only if specifically designated by the permitting authority pursuant to specific criteria.⁴

EPA’s 1984 regulations phased in stormwater point sources for permitting purposes. “Group I” storm sewers, which included specifically designated sewers, those located in industrial yard areas, or for which effluent limitations have been established, were required to apply for a permit by December 31, 1987. All other “regulated” stormwater discharges were not required to be covered by a permit application until June 30, 1989.

Privately owned or operated storm sewer systems with multiple users, such as systems emanating from industrial parks where the collector sewers are owned by the discharging industries, were treated differently from municipal systems. In certain cases, the NPDES regulations allowed the permit writer to require separate permits of the contributors to such a system.

Nevertheless, EPA’s clear thrust has been to maximize the use of general permits to cut down the administrative burden imposed by permitting stormwater point sources. Section 122.28(a)(2) specifically includes stormwater point sources as gen-

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¹See 40 C.F.R. § 133.103(a).

²The Agency was primarily concerned about the administrative burden that would be imposed upon it were it required to permit tens of thousands of storm sewer outfalls, which discharge large quantities of water and relatively small amounts of pollutants. Unfortunately, the pollutant load from stormwater discharges turned out to be greater than first thought, and as regulatory interest turned to toxic pollutants, complaints about the Agency’s policy grew louder.

³See 49 Fed. Reg. 38046 (1984).

⁴The permit writer was limited by considerations contained in promulgated stormwater point source effluent guidelines. Nevertheless, in spite of any such limitation, a source could also be designated if EPA approves a § 208 nonpoint source water quality management plan applicable to such source, or if the criteria for calling it a “significant contributor of pollution” were met. Those criteria include consideration of the location of the discharge, its size, the quantity and nature of the pollutants reaching waters of the United States, and “other relevant factors.”

eral permit targets, provided they meet the criteria of § 122.28(a)(1).⁵

§ 13:69 Effluent standards and limitations—Stormwater discharges—The 1987 amendments

As discussed in § 13:68 above, EPA's regulation of stormwater discharges has historically been a controversial subject, particularly with environmental groups. Addressing stormwater discharges directly, in 1987 Congress added § 402(p) to the statute.¹ This provision suspended until 1992 EPA's authority to require a permit for discharges composed "entirely of stormwater,"² except for four significant categories of stormwater discharges. Stormwater-only discharges for which permits are or may be required in the interim include: (1) those for which permits had been issued prior to the enactment date of the amendment; (2) discharges "associated with industrial activity;"³ (3) discharges from large and midsize municipal separate storm sewers;⁴ and (4) discharges that have been identified and designated by state or EPA officials as causing a violation of water quality standards or is otherwise a "significant contributor of pollutants to the waters of the United States."⁵ EPA codified these amendments by revisions to its stormwater regulations in 1989.⁶

Under the 1987 legislative timetable, discharges associated with industrial activity and those from municipalities of a population greater than 250,000 were to be covered by EPA permit regulations by not later than two years after the enactment date.⁷ Such dischargers were to have submitted a completed permit application within three years of the enactment date, and permits were to be issued within a year after that. EPA was given two years longer to develop regulations and issue permits covering municipalities of a population between 100,000 and 250,000. EPA was prohibited from addressing smaller municipal stormwater discharges until it has completed a study mandated by the legislation and in no event before 1992.

EPA implemented its stormwater discharge program in two phases.⁸ Phase I was issued in 1990 and requires medium and large cities and certain counties with populations over 100,000 to obtain an NPDES permit for stormwater discharges. Phase II was issued in 1999 and requires smaller municipal separate storm sewer systems (MS4s) to obtain an NPDES permit for stormwater discharges.

EPA issued the industrial and municipal stormwater permit application regulations in November 1990, which included requirements for medium municipal separate storm sewers, which were not due until 1991.⁹ The primary category of nonmunicipal dischargers which must file stormwater permit applications is

⁵Those criteria all relate to confined political or geographic areas.

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¹Pub. L. No. 100-4, § 405, 101 Stat. 69 (1987).

²This term is not defined. All stormwater contains pollutants picked up during the course of runoff. Clearly stormwater containing landfill leachate would seem not to be included within the scope of the term, but what of stormwater that contains pollutants from legal or illegal floor drains in commercial or industrial facilities?

³33 U.S.C.A. § 1342(p)(2)(B); 40 C.F.R. § 122.26(b)(14).

⁴33 U.S.C.A. § 1342(p)(2)(C), (D). The cutoff is a population of 100,000.

⁵33 U.S.C.A. § 1342(p)(2)(E). Congress also amended § 502(14) of the Act to expressly exclude from the definition of point source agricultural stormwater discharges. 33 U.S.C.A. § 502(14).

⁶See 54 Fed. Reg. 246 (1989).

⁷Pub. L. No. 100-4 became law on February 4, 1987.

⁸U.S. Environmental Protection Agency, Stormwater Discharge from Municipal Separate Storm Sewer Systems (MS4s), <http://cfpub.epa.gov/npdes/stormwater/munic.cfm>; see also Nat. Res. Def. Council v. U.S. E.P.A., 526 F.3d 591, 595-598, 66 Env't Rep. Cas. (BNA) 1948 (9th Cir.).

⁹55 Fed. Reg. 47990 (1990), codified at 40 C.F.R. Part 122.

composed of facilities that have a “storm water discharge associated with industrial activity,” defined as “the discharge from any conveyance which is used for collecting and conveying stormwater and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant.”¹⁰ Such discharges must be permitted whether they discharge immediately to waters of the United States or travel through a municipal separate storm sewer before reaching such waters.¹¹

Industrial dischargers must certify that all of the outfalls covered in the permit application have been tested for nonstormwater discharges that are not covered by an NPDES permit, except for outfalls where stormwater is intentionally mixed with process or nonprocess wastewater streams that are already identified in and covered by a permit. Applicants for discharges composed of stormwater and nonstormwater must report in detail on the nonstormwater component of the discharge.¹²

Ten listed categories of facilities are presumptively considered to be engaging in “industrial activity”;¹³ discharges from areas at these facilities that are “directly related” to manufacturing, processing, or raw materials storage areas¹⁴ must be included in the application even if the water does not actually contact any industrial materials. Notably, stormwater runoff from logging roads is not considered to be “associated with industrial activity.”¹⁵ Although discharges from areas located on plant lands separate from the plant’s industrial activities, such as office buildings and parking lots, are excluded from the definition, the exception does not apply if drainage from the excluded areas is mixed with stormwater drained from industrial areas.¹⁶

A second group of “light industry” facilities having stormwater discharges associated with industrial activity presumptively will not have to file an application unless their industrial activity is actually exposed to stormwater. These include facilities covered by over twenty Standard Industrial Classification Codes, including those engaged in manufacturing metal products, electronic and medical equipment, products made from purchased glass, and warehousing.¹⁷ In the final rule, EPA justified this differential treatment for light industrial facilities on the grounds that most of their activities occur indoors and the volume of pollutants generated by

¹⁰40 C.F.R. § 122.26(b)(14).

¹¹See 55 Fed. Reg. at 47998 to 47999.

¹²See 40 C.F.R. § 122.26(c)(1).

¹³These include facilities subject to stormwater effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under 40 C.F.R. subchapter N; facilities with certain Standard Industrial Classifications, hazardous waste treatment, storage or disposal facilities, landfills, land application sites, and open dumps; recycling facilities such as metal scrapyards, battery reclaimers, salvage yards, and automobile junkyards; steam electric power generating facilities’ certain transportation facilities; treatment works treating domestic sewage; and construction activity involving more than five acres. 40 C.F.R. § 122.26(b)(14)(i) to (x).

¹⁴Such “dirty” areas include plant yards, immediate access roads and rail lines used by materials carriers, refuse sites, sites used for the application or disposal of process wastewaters, shipping and receiving areas, manufacturing buildings, storage areas—including tank farms, for raw materials and products—and areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater. 40 C.F.R. § 122.26(b)(14).

¹⁵*Decker v. Northwest Environmental Defense Center*, 133 S. Ct. 1326, 1336-38, 185 L. Ed. 2d 447, 76 Env’t Rep. Cas. (BNA) 1001 (2013).

¹⁶40 C.F.R. § 122.26(b)(14). EPA states in the preamble that a facility will generally be held responsible for sheet flow or discharged stormwater from upstream facilities that enters the land or commingles with the discharge from the downstream facility. Ultimately, however, these conditions will be addressed by permitting upstream facilities and requiring downstream facilities to develop management practices to segregate or otherwise prevent commingling of discharges. See 55 Fed. Reg. 47990, 48010 (1990).

¹⁷40 C.F.R. § 122.26(b)(14), (b)(14)(xi). Most retail and commercial facilities are not regulated under the rule, pending the results of further studies.

their outdoor activities (such as equipment storage and stack emissions) is minimal.¹⁸ In 1992, however, the Ninth Circuit invalidated this portion of the rule as arbitrary and capricious, finding that EPA failed to provide any facts in the record to support its claims as to the characteristics of discharges from light industrial facilities, and that the statute, in any case, does not permit the use of an “actual exposure” text for these categories of facilities.¹⁹

For covered industrial dischargers, the regulations provide for three types of permits: individual permits, group permits, and promulgated general permits. An individual application, requiring extensive facility-specific information and quantitative sampling data, must be submitted unless the discharger qualifies for a group or general permit. A group application may be filed by an entity representing a group of applicants (excluding facilities that have existing individual NPDES permits for stormwater) that are part of the same effluent limitation subcategory or are sufficiently similar as to be appropriate for general permit coverage.²⁰

The third type of permit for which some industrial dischargers may be eligible is a general permit. As an initial matter general permits will cover the majority of stormwater discharges associated with industrial activity located in states without authorized NPDES programs. General permits will also serve as models for states with authorized NPDES permits. Once EPA has issued general permits for stormwater discharges associated with industrial activity, facilities will seek coverage under a general permit by filing a notification of intent.²¹

Individual applications were to be submitted by November 18, 1991.²² Part 1 of a group application was required to be filed by March 18, 1991, and Part 2 within twelve months of approval of the group. Facilities rejected as part of a group are given twelve months from the date of rejection to submit an individual permit application.²³ A separate set of deadlines applies to applications for stormwater discharges associated with industrial activity from a facility that is owned or operated by a municipality with a population of less than 100,000, other than an airport,

¹⁸55 Fed. Reg. 47990, 48008 (1990).

¹⁹Nat. Res. Def. Council, Inc. v. EPA, 966 F.2d 1292, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20950 (9th Cir. 1992). The court also struck down EPA's exemption for construction sites of less than five acres, finding that EPA had failed to adequately support its determination that discharges from such sites would have only *de minimis* adverse effects, and upheld the exemption for uncontaminated runoff from mining, oil, and gas activities. Nat. Res. Def. Council, Inc. v. EPA, 966 F.2d 1292, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20950 (9th Cir. 1992). See also American Mining Congress v. EPA, 965 F.2d 759, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 21135 (9th Cir. 1992) (upholding classification of discharges from inactive mines as “associated with industrial activity”).

²⁰See 40 C.F.R. subpart N.

²¹See 55 Fed. Reg. 47990, 48003 (1990). EPA's preamble discussion indicates that general permits will provide baseline stormwater management practices with additional specific management practices for certain categories of industries. See 55 Fed. Reg. 47990, 48006.

²²EPA extended the deadline for submission of individual industrial stormwater applications to October 1, 1992. 57 Fed. Reg. 56548 (Nov. 5, 1992). The deadline for a facility rejected as a member of a group application was extended to no later than twelve months after the date of rejection or October 1, 1992, whichever comes first. 56 Fed. Reg. 56549 (Nov. 5, 1992).

²³EPA extended the deadline for submission of Part 1 to September 30, 1991. 56 Fed. Reg. 12098 (Mar. 21, 1991). EPA also extended the deadline to submit Part 2, to October 1, 1992. 57 Fed. Reg. 11394 (Apr. 2, 1992). See also Dire Emergency Supplemental Appropriations Act of 1991, Pub. L. 102-27, § 307, 105 Stat. 130, 152 (1991) (ratifying EPA extension for Part 2). Facilities with existing permits for stormwater discharges associated with industrial activity must submit new applications 180 days before their permits expire, see 40 C.F.R. § 122.26(e)(6), while applications for new discharges must generally be submitted 180 days before the date on which the discharge is to commence, see 40 C.F.R. § 122.21(c)(1).

power plant, or uncontrolled sanitary landfill.²⁴

Also covered by the stormwater permitting regulations are discharges from large or medium municipal separate storm sewer systems, which are defined to include discharges into waters of the U.S. from municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains.²⁵ The operator must either participate with one or more other system operators in a permit application that covers all, or a portion of all, discharges from the system, submit a distinct permit application which only covers discharges from the sewers for which the operator is responsible, or, where there is a regional authority with authority over a stormwater management program, be included in an application submitted by that authority.²⁶ EPA may issue one system-wide permit covering all discharges from a single system or issue separate permits for categories of discharges within the system.²⁷

Municipal separate storm sewer permit applications have two parts.²⁸ Part 1 of the permit application, which must include detailed system-specific information and a sampling plan, is due by November 18, 1991, for large systems and May 18, 1992, for medium systems. Part 2, consisting of analytical data and a proposed management program for reducing “illicit discharges” must be submitted by November 16, 1992, for large systems and May 17, 1993, for medium systems.²⁹

Stormwater discharges from small municipalities (those serving less than 100,000 persons) and construction sites of less than five acres also require permits. As part of the permit requirements, municipalities are required to implement six measures, at a minimum, to reduce pollutants in stormwater: public education and outreach, public involvement, illicit discharge detection and elimination, construction site runoff control, post-construction stormwater management in new development and redevelopment, and pollution prevention and good housekeeping of municipal

²⁴Individual applications for such discharges had to be submitted by October 1, 1992, except in two cases. For municipal facilities identified in a timely submitted Part 1 group application, where the group application is denied or the particular facility is rejected from the group, the facility need not submit an individual application until the 180th day after the date of denial or rejection or October 1, 1992, whichever is later. Facilities owned or operated by a municipality with a population of less than 100,000 need not submit an individual application until further notice, unless required under § 402(p)(2)(A) or (E) of the Act. With regard to group applications, for facilities owned or operated by a municipality with a population of less than 250,000, and for airports, power plants, and uncontrolled landfills owned or operated by a municipality with a population of less than 100,000, group application deadlines are May 18, 1992, for Part 1 and May 17, 1992, for Part 2. *See* 57 Fed. Reg. 11394 (Apr. 2, 1992). This differential treatment for discharges from industrial facilities owned or operated by municipalities was not contemplated by either the Clean Water Act or EPA’s rules but rather is a product of special provisions in the Intermodal Surface Transportation Efficiency Act of 1991, Pub. L. 102-240, § 1068, 105 Stat. 1914, 2007 (1991).

²⁵40 C.F.R. § 122.26(b)(8). Large systems include those that either serve a population of 250,000 or more, are located in unincorporated areas within specifically listed counties, or are specifically designated by EPA. 40 C.F.R. § 122.26(b)(4). Medium systems include those that either serve a population of 100,000 or more, are located in specifically listed counties, or are specifically designated. 40 C.F.R. § 122.26(b)(7). Not covered by the regulations are discharges of stormwater to combined, as opposed to separate, sewer systems that mix stormwater and sanitary or process wastewater. 40 C.F.R. § 122.26(a)(7).

²⁶40 C.F.R. § 122.26(a)(3)(iii).

²⁷40 C.F.R. § 122.26(a)(3)(ii). A single permit application for sewers in adjacent or interconnected systems may also be submitted. 40 C.F.R. § 122.26(a)(3)(iv).

²⁸*See* 40 C.F.R. § 122.26(d). *Defenders of Wildlife v. Browner*, 191 F.3d 1159 (9th Cir. 1999) (holding that EPA has the authority to require municipalities to comply strictly with state water-quality standards with regard to stormwater discharges).

²⁹40 C.F.R. § 122.26(e)(3), (4). Industrial facilities that discharge to a municipal separate stormwater system serving more than 100,000 people were required to provide the municipal system with certain facility-specific information by May 15, 1991. 40 C.F.R. § 122.26(a)(4).

operations.³⁰ For small construction sites, the EPA requires the implementation of Best Management Practices.³¹

Finally, EPA or authorized states retain their authority to require submission of a permit application by other dischargers of stormwater where the discharge is found to contribute to a violation of water quality standards or to be a significant contributor of pollutants to the waters of the United States.³²

EPA's extension of the statutorily established deadlines for submission of permit applications by individual industrial dischargers and large and medium storm sewer systems was declared unlawful in 1992, as was the Agency's failure to include in the 1990 stormwater rule deadlines for permit issuance and permit compliance.³³ The court declined to enjoin EPA from further extensions for permit applications but ordered it to inform the regulated community of the statutory deadlines for permit approval and compliance.

The stormwater permitting process will be conducted according to permitting priorities to be established by EPA. As an initial matter, Tier I baseline permitting will involve the development of one or more general permits to initially cover the majority of stormwater discharges associated with industrial activity. Tier II watershed permitting will involve the targeting for permitting of facilities located in watersheds shown to be adversely impacted by stormwater discharges associated with industrial activity. Specific industry categories will be targeted for individual or industry-specific permits in Tier III, and other specific facilities will be targeted for individual permits in Tier IV.³⁴

EPA has published a general NPDES permit for stormwater discharges associated with industrial activity to be used in states lacking authorized NPDES programs. The permit requires covered facilities to develop stormwater pollution prevention plans and sets forth specific monitoring and reporting requirements. Numeric effluent limitations are implemented for a limited number of regulated activities, including discharges from hazardous waste landfills, nonhazardous waste landfills, and coal storage piles. The general permit otherwise relies on non-numeric effluent limitations.³⁵

§ 13:70 Effluent standards and limitations—Water-quality-based limitations¹

The Clean Water Act authorizes the imposition of “water-quality-based limitations” in NPDES permits where technology-based limitations are not adequate to ensure that receiving streams will satisfy water quality standards and designated uses. Technology-based limits focus on the technological and economic capacity of a category of industrial dischargers to control pollution. In contrast, water-quality-based limits focus on the environmental effects of the discharge. Dischargers must meet technology-based limitations applicable to all point sources in a discrete industrial category. Water-quality-based limitations may be imposed as an ad-

³⁰40 C.F.R. § 122.34; *see also* 64 Fed. Reg. 68721 (1999), codified at 40 C.F.R. §§ 122.30-122.37.

³¹64 Fed. Reg. 68721 (1999), codified at 40 C.F.R. § 122.26(c).

³²40 C.F.R. § 122.26(e)(5).

³³*Natural Res. Def. Council, Inc. v. EPA*, 966 F.2d 1292, 22 *Envtl. L. Rep.* (Envtl. L. Inst.) 20950 (9th Cir. 1992).

³⁴*See* 55 Fed. Reg. 47990, 48002 (1990).

³⁵*See* 73 Fed. Reg. 56572 (Sept. 29, 2008); U.S. EPA, Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (2008).

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¹By **Jeffrey Gaba**; updates by **Ronald Raider** and **Vance Hughes**.

ditional, and a more stringent, limitation where warranted by the adverse water quality effects of a discharge.

Several provisions of the Act authorize the imposition of water-quality-based limitations. These include the water quality standards provisions of § 303,² the toxic effluent standard provisions of § 307(a)(2),³ and the water-quality-based effluent limitations provisions of § 302.⁴ Additionally, § 403 provides for the inclusion of water-quality-based restrictions for discharges into marine waters.⁵ Finally, § 510 preserves state authority to impose more stringent requirements.⁶

Where sources have come into compliance with the BAT requirements of the Act, and water quality degradation has persisted, these water-quality-based limitations will take on increasing importance as the mechanism for achieving additional post-BAT discharge reductions. Without question, the § 303 water quality standards program is by far the most important of these provisions. Because it is the basis for most water-quality-based provisions in NPDES permits, the failure of EPA and the states to implement water-quality-based permitting strategies has resulted in a series of successful citizen suits.⁷ The authority of §§ 307 and 302 has been little used, but remains available for imposing additional post-BAT limitations.⁸

§ 13:71 Effluent standards and limitations—Water-quality-based limitations—Water quality standards

Section 303 of the Clean Water Act requires states to establish, and review every three years, water quality standards for all waters within their jurisdiction.¹ Water quality standards in concept are simple. States must specify one or more uses for

²33 U.S.C.A. § 1313. *See* § 13:71-§ 13:75.

³CWA § 307(a)(2), 33 U.S.C.A. § 1317(a)(2). *See* § 13:77.

⁴CWA § 302, 33 U.S.C.A. § 1322. *See* § 13:76.

⁵CWA § 403, 33 U.S.C.A. § 1343. *See* § 13:78.

⁶33 U.S.C.A. § 1370; *see, e.g.*, Ga. Code Ann. § 12-5-23.2 (1998) (Georgia phosphorus standards for lakes).

⁷*See, e.g.*, Alaska Ctr. for the Env't v. Reilly, 762 F. Supp. 1422, 1426-29, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 21305, 21306-08 (W.D. Wash. 1991), 796 F. Supp. 1374, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 21204 (W.D. Wash. 1992); *aff'd sub nom.* Alaska Ctr. for the Env't v. Browner, 20 F.3d 981, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20702 (9th Cir. 1994) (court held that Alaska had constructively submitted no total maximum daily load (TMDL) analyses and ordered EPA to initiate establishment of TMDLs and to identify impaired water bodies); Sierra Club v. Hankinson, 939 F. Supp. 865, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 20280 (N.D. Ga. 1996) (court held EPA's failure to disapprove state's inadequate TMDL submission violates APA and failure to promulgate TMDLs for state violated Clean Water Act).

⁸*See* Gaba, Federal Supervision of State Water Quality Standards Under the Clean Water Act, 36 Vand. L. Rev. 1167, 1217-18 (1983).

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¹Section 303(a) of the 1972 Federal Water Pollution Control Act Amendments required states to establish water quality standards for intrastate as well as interstate waters by May 1983. States had previously been required to adopt water quality standards for interstate waters by the Water Quality Act of 1965, which contained the predecessor to existing water quality standards provisions. *See* Gaba, Federal Supervision of State Water Quality Standards Under the Clean Water Act, 36 Vand. L. Rev. 1167, 1177-86 (1983); *see also* Kentucky ex rel. Hancock v. Train, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20689 (E.D. Ky. 1976) (discussion of the range of waters for which states must establish water quality standards).

Section 303(c), 33 U.S.C.A. § 1313(a), contains the currently applicable requirements for review of existing water quality standards. Section 303(c)(1) requires that each state hold public hearings at least once every three years for the purpose of reviewing water quality standards. Section 303(c)(2) provides that any "revised or new water quality standard shall consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses."

which each body of water in the state is to be maintained.² These “designated uses” might for one stream include “warm water fishery”; for another it might be “public drinking water supply.” In addition to designated uses, the state must also set water quality “criteria.”³ These criteria are the levels of pollutants in the water which will ensure that the designated use will be maintained. Thus, a criterion for the “warm water fishery” might be a minimum dissolved oxygen of 5 milligrams per liter in the stream. These criteria are ambient criteria; they specify the levels of pollutants in the water body itself and not in the discharge. These criteria may also be narrative based on qualities such as “aesthetics.”⁴

Section 301(b)(1)(c) of the Act requires that NPDES permits include limitations that will ensure that water quality standards are not violated.⁵ This includes water quality standards of the state in which the discharge occurs, as well as the standards of neighboring states affected by the discharge.⁶ Permit writers must determine whether the amount of a pollutant discharged by a source will cause the level of a pollutant in a stream to exceed criteria values,⁷ and specific end-of-pipe numerical limitations can be placed in a permit to ensure that this does not occur.⁸ Assessment of water quality is complex. Because most monitoring data provides no more than an instantaneous snapshot of stream quality, a comprehensive assessment is preferable based on frequent sampling and computer analyses beyond the resource capabilities of most states. All point sources must meet applicable technology-based limitations; water quality standards based restrictions are imposed as an additional and a more stringent limitation only where the discharge will cause violation of water quality standards.

Although water quality standards are set by the states, the Administrator is

²36 Vand. L. Rev. 1167, 1217–18 (1983).

³33 U.S.C.A. § 1314(a)(1); *see* § 13:73.

⁴33 U.S.C.A. § 1313(c); PUD No. 1 of Jefferson County v. Washington Dept. of Ecology, 511 U.S. 700, 715–16, 24 Env'tl. L. Rep. 20945 (1994). *See also* Sierra Club v. Meiburg, 296 F.3d 1021, 32 Env'tl. L. Rep. 20776 (11th Cir. 2002) (discussing nonpoint sources, water quality standards, and total maximum daily loads in the context of 33 U.S.C. § 1313).

⁵CWA § 301(b)(1)(c), 33 U.S.C.A. § 1311(b)(1)(c). Under § 401, states must certify that a project that may result in a discharge will comply with water quality standards and “other requirements” of state law, and the provision authorizes the state to specify the effluent limitations and other limitations necessary to ensure that the project meets those requirements. *See* CWA § 401, 33 U.S.C.A. § 1341. In PUD No. 1 of Jefferson County v. Washington Dep't of Ecology, 511 U.S. 700, 114 S. Ct. 1900, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20945 (1994), the U.S. Supreme Court upheld Washington State's imposition of minimum stream flow conditions as part of its certification that a hydroelectric plant would meet state water quality standards.

There are four basic elements to a water quality standard. 40 C.F.R. Part 131, subpart B. These elements are: (1) designated use of the water body; (2) water quality criteria to protect the designated use; (3) an antidegradation policy to maintain and protect existing uses and waters; and (4) general policies for implementation. *Id.* *See also* U.S. EPA, What are Water Quality Standards?, http://water.epa.gov/scitech/swguidance/standards/about_index.cfm; U.S. EPA, EPA's Water Quality Standard Handbook: Second Edition, <http://water.epa.gov/scitech/swguidance/standards/handbook/index.cfm>; U.S. EPA, EPA's Technical Support Document for Water Quality-Based Toxics Control, http://water.epa.gov/scitech/swguidance/standards/handbook/upload/2002_10_25_npdes_pubs_owm0264.pdf.

⁶*See* Arkansas v. Oklahoma, 503 U.S. 91, 112 S. Ct. 1046, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20552 (1992); *see also* 40 C.F.R. § 131.10(b) (“In designating uses of a water body and the appropriate criteria for those uses, the State shall take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters.”).

⁷*See* § 13:75.

⁸However, EPA has approved and states can develop mixing zones. 40 C.F.R. § 131.13. *See also* U.S. EPA, EPA's Technical Support Document for Water Quality-Based Toxics Control, http://water.epa.gov/scitech/swguidance/standards/handbook/upload/2002_10_25_npdes_pubs_owm0264.pdf; 40 C.F.R. § 125.121(c) (definition of “mixing zone”).

responsible for reviewing state standards to ensure that they meet the requirements of the Act.⁹ If the Administrator determines that they do not meet these requirements, EPA may promulgate necessary changes to the standards which then become the applicable standards for that state.¹⁰ EPA has promulgated regulations specifying requirements for state adoption of water quality standards.¹¹

Review of EPA's decisions approving and disapproving state water quality standards raises some difficult questions. According to EPA, disapproving a state water quality standard has no effect because the disapproved state standard remains in effect until EPA promulgates a federal standard.¹² Based on this position, EPA has claimed that its disapproval of a state standard is not ripe for review and that review is available, if at all, in a challenge to federally promulgated standards.¹³ Environmental groups have had some success suing EPA under the Clean Water Act citizen suit provisions when EPA has failed to promulgate new water quality standards following its disapproval of state standards.¹⁴ Once EPA formally disapproves a state standard, the Clean Water Act imposes a nondiscretionary duty on EPA to promulgate federal standards "promptly."¹⁵ Several courts have held that citizens could sue to compel EPA to perform this nondiscretionary duty when EPA had "unreasonably" delayed promulgation.¹⁶ Plaintiffs have also had some success in review of EPA's approval of a state water quality standard.¹⁷

⁹CWA § 303(c)(3), 33 U.S.C.A. § 1313(c)(3).

¹⁰CWA § 303(c)(4), 33 U.S.C.A. § 1313(c)(4).

¹¹40 C.F.R. Part 131. The Water Quality Act of 1987 amended § 303(d) by prohibiting revisions of "total maximum daily loads" unless a designated use has been removed "in accordance with regulations established under this section" or, in the case of high quality waters, unless the action is "consistent with the antidegradation policy established under this section." It is unclear the extent to which Congress intended to codify existing EPA regulations on revisions of designated uses, see § 13:72 note 5, and antidegradation, see § 13:74 notes 6–8. States, pursuant to § 510 of the Act, are authorized to impose more stringent standards if they choose. Thus, these federal regulations specify the minimum requirements which states must achieve for standards to be federally approved.

¹²See 40 C.F.R. § 131.21(c).

¹³See, e.g., *Stream Pollution Control Bd. v. Alexander*, 11 Env 1564 (S.D. Ind. 1978).

¹⁴Section 505(a) of the Clean Water Act allows citizen suits where, among other things, the EPA Administrator has failed to perform a nondiscretionary duty. See, e.g., *Alaska Ctr. for the Env't. v. Reilly*, 762 F. Supp. 1422, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 21305 (W.D. Wash. 1991). But see *Gulf Restoration Network v. McCarthy*, 783 F.3d 227, 242–43, 45 Env'tl. L. Rep. (Env'tl. L. Inst.) 20076 (5th Cir. 2015) (finding that so long as EPA provides an adequate explanation it may exercise its discretion to decline to make a determination as to whether a new water quality standard is necessary to meet the requirements of the CWA).

¹⁵Review is a greater problem when EPA has not formally acted in response to a state submission; presumably, EPA fails in its nondiscretionary duty to approve or disapprove after some period of time. See, e.g., *Scott v. City of Hammond*, 741 F.2d 992, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20631 (5th Cir. 1984).

¹⁶See *Idaho Conservation League v. Browner*, 968 F. Supp. 546 (W.D. Wash. 1997) (unreasonable delay when EPA took two years from the date of state submission to disapprove standards and seven months had passed since disapproval); *Raymond Proffitt Found. v. EPA*, 930 F. Supp. 1088, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 21601 (E.D. Pa. 1996) (a delay of 588 days); *Defenders of Wildlife v. Browner*, 909 F. Supp. 1342, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 20894 (D. Ariz. 1995) (delays of eleven and nineteen months). But see *Puget Soundkeeper Alliance v. U.S. EPA*, No. C13-1839-JCC, 2014 WL 4674393, 79 ERC 2094 (W.D. Wash. Sept. 18, 2014) (finding that EPA did not fail to act promptly where the agency did not propose standards within four month of making a determination).

¹⁷See, e.g., *Nat. Res. Def. Council, Inc. v. EPA*, 16 F.3d 1395, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20496 (4th Cir. 1993) (review of EPA approval of state water quality criteria for dioxin); *City of Albuquerque v. Browner*, 865 F. Supp. 733, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 20422 (D.N.M. 1993) (in a challenge to EPA approval of tribal water quality standards, jurisdiction for review of EPA action is claimed under the Administrative Procedure Act and Declaratory Judgment Act).

§ 13:72 Effluent standards and limitations—Water-quality-based limitations—Water quality standards—Requirements for state water quality standards—Designated uses

Section 303(c)(2) of the Act provides that standards shall be such as to “protect public health or welfare, enhance the quality of water and serve the purposes of this Act.”¹ EPA has interpreted this provision to require that state water quality standards achieve the goals of the Act specified in § 101(a)(2), which provides that “wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish and wildlife, and provides for recreation in and on the water.”²

To achieve this goal, EPA regulations require that all designated uses must, at a minimum, specify that waters are fit for aquatic protection and recreation, so-called “fishable/swimmable” waters, wherever these uses are attainable.³ States are required to perform a “use attainability analysis” of waters not designated for these minimum uses.⁴ States can justify a lower designated use only if the attainability analysis demonstrates that the uses are not attainable either because of natural environmental factors or because imposition of control measures to achieve these uses would result in “substantial and widespread economic and social impact.”⁵ EPA has not specifically defined either the precise designated uses necessary to meet the “fishable/swimmable” goals of § 101(a)(2) nor the extent of the economic impact which will satisfy the required showing of widespread economic and social impact.⁶

§ 13:73 Effluent standards and limitations—Water-quality-based limitations—Water quality standards—Requirements for state water quality standards—Water quality criteria

State water quality criteria specify the concentrations of pollutants which, if not exceeded in the water body, will ensure that the designated uses are maintained.¹

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¹CWA § 303(c)(2), 33 U.S.C.A. § 1313(c)(2). Additionally, the section provides that states shall take into consideration the value of waters for such uses as “public water supplies, propagation of fish and wildlife, recreational purposes and agricultural, industrial and other purposes.”

²CWA § 101(a)(2), 33 U.S.C.A. § 1251(a)(2). *See* Gaba, *Federal Supervision of State Water Quality Standards Under the Clean Water Act*, 36 Vand. L. Rev. 1167, 1194–95 (1983). The Senate Report on the predecessor bill to the Water Quality Act of 1987 states, “Ordinarily, State water quality standards established under § 303 designate the use specified in § 101(a)(2) of the Act.” S. Rep. No. 50, 99th Cong., 1st Sess. 24 (1986).

³*See* 40 C.F.R. §§ 131.6(a), 131.10(g); Gaba, *Federal Supervision of State Water Quality Standards Under the Clean Water Act*, 36 Vand. L. Rev. 1167, 1194–96 (1983).

⁴40 C.F.R. § 131.10(j).

⁵40 C.F.R. § 131.10(g). The Water Quality Act of 1987 amended § 303(d) to prohibit the revision of total maximum daily loads for point sources on segments that are not attaining water quality standards, unless the revision will ensure attainment of the standard or “the designated use which is not being attained is removed in accordance with regulations established under this section.” It is not clear the extent to which this language was intended to codify EPA’s then existing regulations relating to alteration or “downgrading” of designated uses. The House Report on its predecessor bill, in its discussion of proposed but not adopted revisions dealing with 304(a)(1) water quality criteria, does impliedly endorse EPA’s current regulations when it states that “the Act and EPA regulations provide an appropriate mechanism for readjusting water quality standards where standards are unattainable.” H.R. Rep. No. 189, 99th Cong., 1st Sess. 27(1986).

⁶General guidance on implementation of the water quality standards regulations is, however, contained in the Agency’s *Water Quality Standards Handbook*.

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¹At least in one case, with respect to dissolved oxygen, the criteria set a minimum rather than a

In most cases, the required criteria consist of numerical concentrations for specific pollutants.² EPA has published recommended concentrations for a range of traditional pollutants, such as bacteria and dissolved solids, and for each of the sixty-five Clean Water Act toxic pollutants.³ Additionally, states may establish criteria either on a narrative basis, such as a general requirement that a water body will not be toxic to man or terrestrial or aquatic life, or based on bioassay results, such as the requirement that the concentration of toxic materials in a water body not exceed 0.1 of the 96-hour median lethal concentration (LC50) for aquatic organisms.⁴ Issues relating to development and implementation of narrative and bioassay-based criteria are discussed elsewhere in this treatise.⁵

The Water Quality Act of 1987 amended § 303(c)(2)(B) to require states to establish criteria for toxic pollutants “the discharge or presence of which in the affected waters could reasonably be expected to interfere with those designated uses adopted by the state, as necessary to support such designated uses.” In guidance to the states, EPA indicated that states could achieve compliance with § 303(c)(2)(B) either by (1) adopting numeric criteria for all toxic pollutants for which EPA has issued criteria guidance under § 304(a), (2) adopting numeric criteria “where such pollutants could reasonably be expected to interfere with designated uses,” or (3) adopting procedures to translate state narrative criteria into numeric criteria.⁶ In 1992, EPA promulgated chemical-specific, numeric criteria for priority toxic pollutants for the fourteen states that had not yet adopted regulations that EPA determined complied

maximum value for concentration in the water body.

²See 40 C.F.R. § 131.11(b). The Water Quality Act of 1987 amended § 303(c)(2)(B) to require states to establish numerical criteria for toxic pollutants where national criteria have been established pursuant to § 304(a).

³EPA publishes “water quality criteria documents” pursuant to § 304(a)(1) of the Act. This section requires that EPA publish “criteria for water quality accurately reflecting the latest scientific knowledge” on various biological and ecological effects of pollutants. These documents contain both information on the environmental effects of pollutants and a recommended ambient concentration for protection of aquatic communities and for protection of human health. EPA has stated that these criteria values are recommendations and have no direct regulatory effect. See 45 Fed. Reg. 79318 (1980).

EPA has published a series of compilations of § 304(a)(1) water quality criteria. The first published compilation was the Quality Criteria for Water (1976), the so-called “Red Book.” As part of a comprehensive settlement of litigation involving regulation of toxic pollutants, EPA has prepared criteria for all sixty-five. In its Notice of Availability of criteria documents for sixty-four of these pollutants, EPA described its revised methodology for developing water quality criteria. See 45 Fed. Reg. 79317 (1980). EPA has continued to publish criteria on additional pollutants since that time. The most current compilation of water quality criteria can be found at <https://www.epa.gov/wqc/national-recommended-water-quality-criteria>.

⁴40 C.F.R. § 131.11(b). See generally Gaba, Federal Supervision of State Water Quality Standards Under the Clean Water Act, 36 Vand. L. Rev. 1167, 1205 (1983). The Water Quality Act of 1987 amended § 303(c)(2)(B) by specifically authorizing the use of criteria based on biological assessment or monitoring where numerical criteria have not been established. A new § 304(a)(8) requires the Administrator to develop and publish information on methods for establishing and measuring water quality criteria for toxic pollutants on other bases than pollutant-by-pollutant criteria, including biological monitoring and assessment methods.

⁵See § 13:81 for a discussion of bioassay-based limits and § 13:82 for a discussion of narrative criteria.

⁶Existing EPA regulations do not, however, explicitly require that a state include criteria for any specific pollutant in its water quality standards. For nontoxic pollutants, the regulations merely have a general requirement that states adopt sufficient criteria “to protect the designated use.” 40 C.F.R. § 131.11(a)(1). EPA has a slightly different set of requirements for toxic pollutants. First, the regulations require that states review water bodies where “toxic pollutants may be adversely affecting water quality or the attainment of designated uses or where the levels of toxic pollutants are at a level to warrant concern.” 40 C.F.R. § 131.11(a)(2). The only requirement that states adopt criteria for toxic pollutants, however, is that they are “sufficient to protect the designated use.” 40 C.F.R. § 131.11(a)(2).

with the requirements of § 303(c)(2)(B).⁷ Criteria were promulgated that addressed both protection of human health and aquatic life. Selection of a federal criterion value for the pollutants raised a number of issues. Among the more controversial was determination of an “acceptable” risk level for human carcinogens. Rather than identify a single risk level, EPA based the criteria values on its assessment or risk levels that the states had used in establishing other criteria or had identified as state policy. Thus, the risk levels, and the resulting criteria, varied among the states.⁸

EPA consistently has taken the position that it will reject specific criteria values adopted by a state if they do not meet federal requirements.⁹ Under EPA regulations, a state criterion value must be based on either the recommended national criterion, the national criterion value modified to reflect local conditions using EPA methodology, or on “other scientifically defensible methods.”¹⁰ This reliance on the national recommended criteria has, in the past, been known as “presumptive applicability.”¹¹ A group of stakeholders, however, challenged EPA’s promulgation of water quality standards for California and several other states, forcing EPA to agree that national criteria for metals were overly stringent. In settlement of the litigation, EPA agreed to restate the criteria for several metals as dissolved.¹² Notwithstanding that clarification, water-quality-based permit limits for metals must be translated and stated in terms of total recoverable metals.¹³

In *Mississippi Commission on Natural Resources v. Costle*,¹⁴ the Fifth Circuit upheld EPA’s rejection of the Alabama criterion for dissolved oxygen that was less stringent than the national value. The court held that it was not unreasonable for the Agency “to require states to justify standards not in conformance with the criteria policy.”¹⁵ The court further held that EPA’s review of the criterion value itself, as opposed to the designated use that the criterion supported, was based exclusively on scientific data and did not require an assessment of the economic impact of adoption of the criterion.¹⁶

A number of states have confronted EPA over the criterion value for dioxin. The scientific data on human health effects of dioxin is quite controversial, and recom-

⁷57 Fed. Reg. 60848 (1992).

⁸The risk values used ranged from a risk of one in 100,000 to one in 1,000,000. 57 Fed. Reg. 60848 (1992).

⁹See 40 C.F.R. Part 131, subpart D (water quality standards).

¹⁰40 C.F.R. § 131.11(b)(1).

¹¹EPA stated that it has abandoned the policy of presumptive applicability of the § 304(a)(1) water quality criteria, but the regulations in effect continue to employ this policy. See Gaba, Federal Supervision of State Water Quality Standards Under the Clean Water Act, 36 Vand. L. Rev. 1167, 1209–13 (1983).

¹²See *American Forest & Paper Ass’n, Inc. v. EPA*, consolidated case no. 93-0694 RMU (D.D.C.) (in which the challenge to EPA’s National Toxic Rule (57 Fed. Reg. 60848 (Dec. 22, 1992)) was partially settled by publication of a stay of the rule as to certain metals (60 Fed. Reg. 22228 (May 4, 1995)) and simultaneous promulgation of an Interim Final Rule based on the bioavailable or dissolved fraction of metals toxic to aquatic life (60 Fed. Reg. 22229 to 22237 (May 4, 1995))). EPA subsequently published updated § 304(a) criteria for 157 pollutants on December 7, 1998, expressing several metals criteria as dissolved (63 Fed. Reg. 67548 to 67558).

¹³40 C.F.R. § 122.45(c).

¹⁴*Mississippi Commission on Nat. Res. v. Costle*, 625 F.2d 1269, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20931 (5th Cir. 1980).

¹⁵*Mississippi Commission on Nat. Res. v. Costle*, 625 F.2d 1269, 1276, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20931 (5th Cir. 1980).

¹⁶*Mississippi Commission on Nat. Res. v. Costle*, 625 F.2d 1269, 1277, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20931 (5th Cir. 1980).

mended values vary widely among government and scientific bodies.¹⁷ Several states, including Maryland and Mississippi, have adopted criteria for dioxin that are one hundred times higher than the recommended national criterion value.¹⁸ In *Natural Resources Defense Council v. EPA*,¹⁹ the Fourth Circuit upheld EPA's approval of the dioxin standard for Maryland and Virginia. The court's opinion is noteworthy, among other reasons, for the court's willingness to allow EPA to base its approval on certain generic assumptions relating to dioxin's toxicity and the estimated amount of human consumption. The court, for example, concluded that EPA had properly exercised its judgment when it declined to base its analysis of dioxin exposure on evidence of higher fish consumption among subpopulations of Native Americans.

§ 13:74 Effluent standards and limitations—Water-quality-based limitations—Water quality standards—Requirements for state water quality standards—Antidegradation

In addition to its specific requirements for designated uses and criteria, EPA has adopted an antidegradation policy that precludes states from adopting water quality standards which do not protect existing uses and existing water quality, and that limits the circumstances under which a state may authorize degradation of existing water quality.¹ Under EPA's regulations, states are required to adopt an antidegradation policy which protects existing wastestream uses and the level of water quality necessary to protect those uses.²

Where existing water quality exceeds that necessary to achieve the § 101(a)(2) goals, water quality can be degraded to the minimum fishable/swimmable levels only where "necessary to accommodate important economic or social development."³ This degradation of water quality may only be allowed after satisfying specific intergovernmental consultation and public participation requirements. EPA regulations preclude any degradation of water quality in water constituting an "outstanding National resource."⁴

The promulgation of an antidegradation requirement based on the 1972 Amendments to the Federal Water Pollution Control Act has been one of the more controversial aspects of the Act.⁵ Prior to the Water Quality Act of 1987, the Clean Water Act contained no explicit reference to an antidegradation requirement. EPA's policy

¹⁷The § 304(a)(1) criterion for dioxin, consistent with criteria for other suspected carcinogens, concludes that any exposure to dioxin represents some risk of cancer, and the document provides a range of values representing different risk levels. See 49 Fed. Reg. 5831 (1984). In 1992, EPA promulgated criteria for dioxin in states that had not complied with § 303(c)(2)(B). The dioxin criteria was set for most states at 0.013 parts per quadrillion (a risk level of one in a million). See 57 Fed. Reg. 60848 (1992).

¹⁸See 21 Env't Rep. (Current Events) (BNA) 1803 (Feb. 8, 1991) (discussing EPA's approval of the Maryland criterion for dioxin of 1.2 parts per quadrillion); 21 Env't Rep. (Current Events) (BNA) 2155 (Apr. 5, 1991) (discussing Mississippi's adoption of a dioxin criterion of 1 part per quadrillion).

¹⁹*Natural Res. Def. Council, Inc. v. EPA*, 16 F.3d 1395, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20496 (4th Cir. 1993).

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¹40 C.F.R. § 131.12.

²40 C.F.R. § 131.12(a)(1).

³40 C.F.R. § 131.12(a)(2).

⁴40 C.F.R. § 131.12(a)(3). For a discussion of the public participation requirements in a state antidegradation regulation, see *Columbus & Franklin County Metro. Park Dist. v. Shank*, 600 N.E.2d 1042 (Ohio 1992).

⁵See generally Hines, A Decade of Nondegradation Policy in Congress and the Courts: The Erratic Pursuit of Clean Air and Clean Water, 62 Iowa L. Rev. 643 (1977).

was based in part on a federal antidegradation policy that preceded the Clean Water Act and in part on the specified goals of the Act.⁶

The 1987 Amendments to the Clean Water Act included a new § 303(d)(4)(B) that allows revision of permit effluent limits based on total maximum daily loads where water quality equals or exceeds levels necessary to attain water quality standards only if the revision “is subject to and consistent with the antidegradation policy established under this section.” There is no other amendment that defines “the antidegradation policy.” Legislative history suggests that Congress intended this provision to codify EPA’s existing antidegradation regulations.⁷

The antidegradation program is linked to the new antibacksliding provisions of § 402(o). Under the antibacksliding provision of § 402(o)(2), BPJ or water-quality-based permit limitations may not be relaxed unless the permittee satisfies certain enumerated conditions.⁸ In addition, § 402(o)(1) indicates that a water-quality-based permit may also be relaxed if the change satisfies the antidegradation policy in § 303(d)(4).⁹ The Conference Report states that “backsliding from water-quality-based effluent limitations can only proceed according to the procedures and applying the decision standard of antidegradation policy established by § 303 of the Act, and where the proposed backsliding is found to be consistent with this antidegradation policy.”¹⁰

§ 13:75 Effluent standards and limitations—Water-quality-based limitations—Water quality standards—Implementation of water quality standards

The designation of water quality standards for a particular body of water is merely one step to the ultimate objective of placing enforceable restrictions on sources of pollution. Additional steps include the determination of TMDL for water bodies and the translation of such loads into specific numerical pollutant limits contained in an NPDES permit.

Section 303(d) of the Act requires that states determine TMDL for all waters that

⁶Hines, A Decade of Nondegradation Policy in Congress and the Courts: The Erratic Pursuit of Clean Air and Clean Water, 62 Iowa L. Rev. 643 (1977). *See also* Gaba, Federal Supervision of State Water Quality Standards Under the Clean Water Act, 36 Vand. L. Rev. 1167, 1189–92 (1983). In *Commonwealth Edison Co. v. Train*, 649 F.2d 481, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20901 (7th Cir. 1980), the court dismissed a challenge to EPA’s antidegradation requirements on ripeness grounds. One judge, dissenting, would have found the regulations violated the requirements of the Act. *Commonwealth Edison Co. v. Train*, 649 F.2d 481, 489, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20901 (7th Cir. 1980).

⁷*See* S. Rep. No. 50, 99th Cong., 1st Sess. 4–7 (1985).

⁸One of these conditions is the existence of new information, not available at the time of permit issuance, that would have justified a less stringent effluent limitation. The section provides, however, that this condition does not apply to revisions of waste load allocations unless the effect of the revision is to decrease the amount of pollutants discharged into the concerned waters, “and such revised allocations are not the result of a discharger eliminating or substantially reducing its discharge of pollutants due to complying with requirements of this Act or for reasons otherwise unrelated to water quality.” Clean Water Act § 402(o)(2), 33 U.S.C.A. § 1342(o)(2).

⁹The amendment is somewhat ambiguous as to whether a water-quality-based limitation may be relaxed only if both consistent with the antidegradation policy and enumerated exceptions are satisfied, or whether either is a sufficient basis for backsliding. The Conference Report suggests that they are alternative means for justifying backsliding:

With respect to water-quality-based permits, in addition to justification based on the limited circumstances just described, the conference substitute also provides that permits developed on the basis of water-quality-based effluent limitations under § 301(b)(1)(C) or § 303(d) or (e), may be renewed, reissued or modified on the basis of subsequently revised waste load allocation formulas, but only in compliance with new § 303(d)(4).

H.R. Conf. Rep. 1004, 99th Cong., 2d Sess. 156 (1986).

¹⁰H.R. Conf. Rep. 1004, 99th Cong., 2d Sess. 156 (1986).

will not achieve water quality standards after application of the 1977 BPT technology-based limits.¹ These TMDL are the total daily² amounts of a particular pollutant that sources can discharge without violating standards.³ The Act provides that these loads are to be established at a level necessary to implement applicable water quality standards “with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.”⁴ The adequacy of these TMDL are subject to review and approval by EPA. The slow pace of state promulgation of TMDL prompted a series of citizen suits that have resulted in court-ordered schedules by which states or EPA must promulgate TMDL.⁵

The state, after determining the total maximum load, is free to allocate that total load among dischargers contributing to pollution on a stream segment. The allocation of the allowable load generally is accomplished through issuance of NPDES permits, including water quality standards based limitations when more than one polluter operates on a segment. EPA has provided states with little useful guidance in the development of proper methods of allocation; states are free to allocate as they wish, provided that they determine the total maximum daily loads to protect,

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¹CWA § 303(d)(1)(C), 33 U.S.C.A. § 1313(d)(1)(C).

²In *Friends of the Earth v. EPA*, 446 F.3d 140, 36 Env'tl. L. Rep. (Env'tl. L. Inst.) 20077 (D.C. Cir. 2006), *cert. denied*, 127 S. Ct. 1121 (2007), the D.C. Circuit held that based on the plain meaning of “daily,” EPA’s TMDL calculation for waters failing to achieve water quality standards must be based on a calculation of total maximum *daily* loads, rather than seasonal or annual loads. For the opposite holding, see *Nat. Res. Def. Council, Inc. v. Muszynski*, 268 F.3d 91 (2d Cir. 2001) (finding that such an interpretation is “absurd,” because for some pollutants, “effective regulation may best occur by some other periodic measure than a diurnal one”) and *Am. Farm Bureau Fed’n v. U.S. E.P.A.*, 792 F.3d 281 (3d Cir. 2015) (finding that the term “total maximum daily load” is ambiguous).

³Section 303(d) actually requires that TMDLs be prepared only for those pollutants that EPA has determined are suitable for these calculations. EPA in 1978 published a notice saying that under appropriate conditions all pollutants are suitable for calculation of TMDLs. 43 Fed. Reg. 60662 (1978). In 2013, a district court held that EPA cannot regulate stormwater under its TMDL authority. *VA Dep’t of Transp. v. EPA*, 43 ELR 20002, NO. 1:12-CV-775 (E.D. Va., Jan. 3, 2013).

⁴CWA § 303(d)(1)(C), 33 U.S.C.A. § 1313(d)(1)(C).

⁵CWA § 303(d)(2), 42 U.S.C.A. § 1313(d)(2). If the state fails to submit acceptable loadings, the EPA must establish necessary TMDLs itself. FWPCA § 303(d)(2), 42 U.S.C.A. § 1313(d)(2). States have, in general, been slow to adopt TMDLs, and several courts have ordered EPA to adopt TMDLs where states have failed to develop their own. *See, e.g.*, *Scott v. City of Hamond*, 741 F.2d 992 (7th Cir. 1984); *Alaska Ctr. for the Env’t v. Reilly*, 762 F. Supp. 1422 (W.D. Wash. 1991); *Sierra Club v. Hankinson*, 939 F. Supp. 865, 27 Env’tl. L. Rep. (Env’tl. L. Inst.) 20280 (N.D. Ga. 1996). In *Dioxin/Organochlorine Ctr. v. Clarke*, 57 F.3d 1517, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 21258 (9th Cir. 1995), the court reviewed challenges by both environmentalists and industry to an EPA-imposed TMDL for dioxin on the Columbia River basin. The court upheld the TMDL and gave substantial deference to EPA judgments regarding the effects of dioxin on human health and the environment. The court also held that EPA had the discretion to promulgate a TMDL for dioxin under § 303 prior to promulgation of a specific BPT or BAT technology-based limitation. *But see* *Ohio Valley Environmental Coalition, Inc. v. Pruitt*, 893 F.3d 225 (4th Cir. 2018) (holding that West Virginia’s delay of promulgating TMDLs for certain waters could not be construed as a constructive submission of no TMDLs, thereby triggering EPA’s duty to act, because the state had issued some TMDLs and had a credible plan to develop other TMDLs); *San Francisco Baykeeper v. Whitman*, 287 F.3d 764 (9th Cir. 2002), *opinion withdrawn and superseded by*, 297 F.3d 877 (9th Cir. 2002) (holding that EPA had no duty to establish TMDLs for California despite the state’s failure to submit TMDLs for more than 15 years after the initial statutory deadline because it had begun establishing a program in 1994); *Thomas v. Jackson*, 581 F.3d 658 (8th Cir. 2009) (refusing to require the EPA to include § 303(d) impaired waters where EPA has determined that impairment is due to something other than a pollutant); *Sierra Club v. McLerran*, No. 11-CV-1759-BJR, 2015 WL 1188522, (W.D. Wash. Mar. 16, 2015) (finding that state’s failure to submit a PCB TMDL did not unambiguously indicate its intent to abandon the PCB TMDL).

among other things, recreational and aesthetic purposes⁶ and the results protect water quality standards.⁷

The translation of a waste load allocation into a specific numerical permit limitation is the final step in the implementation of water quality standards.⁸ This process is difficult, inexact, and controversial. Permit writers must undertake a complex review of the discharger and the stream segment to determine the necessary end-of-pipe limitations that will ensure that water quality standards are not violated. This review may require modeling the flow of the stream to determine low flow conditions and developing appropriate boundaries of a “mixing zone” where the waste is first discharged. If a point source complies with its water quality standards-based permit limitations, it is not liable even if the limits are inadequate to ensure that the water quality standards are attained.⁹

Most water quality standards-based permit limitations consist of specific numerical limitations, but, as noted, such limitations are difficult to develop. The Ninth Circuit has had considerable difficulty with the issue of whether permits could contain an enforceable limitation that simply required compliance with water quality standards. In such a case, proof that a permittee’s discharge caused a violation of water quality standards would constitute a violation of the NPDES permit. In *Northwest Environmental Advocates v. City of Portland*,¹⁰ the Ninth Circuit originally held that such a generalized requirement was not an enforceable “effluent standard or limitation.” On rehearing, however, the same panel reversed its position and held that such a generalized requirement was enforceable.¹¹ The court relied heavily on *PUD No. 1 of Jefferson County v. Washington Department of Ecology*,¹²

⁶*Friends of Earth, Inc. v. E.P.A.*, 446 F.3d 140, 144-45, 147-48, 62 Env’t Rep. Cas. (BNA) 1161, 36 Env’tl. L. Rep. 20077, 53 A.L.R. Fed. 2d 577 (D.C. Cir. 2006).

⁷*See* 40 C.F.R. Pt. 130; *see also* *Friends of Pinto Creek v. U.S. E.P.A.*, 504 F.3d 1007, 1012-16, 65 Env’t Rep. Cas. (BNA) 1289 (9th Cir. 2007) (finding that discharger was not entitled to NPDES permit under the Act where water body was already impaired and 303(d) listed, and the discharger failed to produce evidence under 40 C.F.R. § 122.4(i)(1) and (2)). *But see, e.g.*, *Assateague Coastkeeper v. Maryland Dept. of Env’t*, 200 Md. App. 665, 714, 28 A.3d 178 (2011), *cert. denied*, 424 Md. 291, 35 A.3d 488 (2012) (“The resolution of the question of how to interpret the phrase ‘cause or contribute’ to a water quality violation is an issue that involves [agency] expertise, and we give deference to its opinion on this issue. The [agency’s] construction of 40 C.F.R. § 122.4(i), as allowing the consideration of pollution offsets in determining whether a discharge ‘causes or contributes’ to a violation of water quality standards, is reasonable. Under the circumstances, we will not substitute our judgment for that of the agency.”).

⁸The process is described in the preamble to the proposal of the current water quality standards regulations. 47 Fed. Reg. 49239 (1982). *See also* Permit Writer’s Guide to Water Quality Based Permitting (EPA/440/4-87-005, July 1987); Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001, Mar. 1991). In 1995, EPA issued guidance on water quality issues for the Great Lakes. 60 Fed. Reg. 15366 (Mar. 23, 1995). This guidance addresses a number of issues relating to implementation of water quality standards, including derivation of numerical effluent limits, mixing zones, and the role of antidegradation policies.

⁹*See, e.g.*, *Oregon Nat. Res. Council v. U.S. Forest Serv.*, 834 F.2d 842, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20450 (9th Cir. 1987).

¹⁰*Northwest Env’tl. Advocates v. City of Portland*, 11 F.3d 900, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 20238 (9th Cir. 1993), *opinion withdrawn and superseded on reh’g by* 56 F.3d 979, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 21250 (9th Cir. 1995).

¹¹*See, e.g.*, *Northwest Env’tl. Advocates v. City of Portland*, 56 F.3d 979, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 21250 (9th Cir. 1995); *accord* *Harpeth River Watershed Ass’n v. City of Franklin, Tenn.* No. 3:14-1743, 2016 WL 827584 (M.D. Tenn. March 3, 2016) (rejecting defendant’s argument that state programs having a greater scope of coverage than that allowed under federal law are not enforceable as effluent standards under the CWA).

¹²*PUD No. 1 of Jefferson Cty. v. Wash. Dep’t of Ecology*, 511 U.S. 700, 114 S. Ct. 1900, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20945 (1994). In this case, the U.S. Supreme Court upheld Washington State’s imposition of minimum stream flow conditions as part of its certification that a hydroelectric plant

which the majority described as holding that water quality standards-based restrictions are not limited to specific numerical limitations but could include broader narrative obligations. The panel was split on this issue, and the dissenting judge subsequently published a rather bitter opinion attacking the panel's revised opinion and its characterization of *PUD No. 1*.¹³

In *Arkansas v. Oklahoma*,¹⁴ the Supreme Court confirmed the interstate reach of the obligation to comply with water quality standards. The case involved an EPA-issued NPDES permit to a new sewage treatment plant located in Arkansas. During the permit issuance process, Oklahoma challenged the permit, claiming that the discharge would violate Oklahoma water quality standards. Arkansas claimed that the Clean Water Act did not require an Arkansas point source to comply with water quality standards in Oklahoma. During the administrative appeal process, EPA took the position that the permit must include provisions to ensure that the water quality standards of the downstream state are not violated, but held that the permit could be issued since the discharge would not cause "an actual *detectable* violation of Oklahoma's water quality standards."¹⁵ The court of appeals upheld EPA's authority to require compliance with a downstream state's water quality standards, but addressing an issue not argued by the parties remanded based on its conclusion that the Clean Water Act prohibited the discharge of effluent that would reach waters already in violation of existing water quality standards.¹⁶

The Supreme Court upheld EPA's authority to require NPDES permits to contain conditions necessary to ensure compliance with the "applicable" water quality standards of all affected states. EPA's water quality standards regulations specifically established this requirement,¹⁷ and the Court held that EPA's provision was a reasonable exercise of discretion under the Clean Water Act.¹⁸ The Supreme Court, however, rejected the court of appeal's position that no discharge could be added to a stream currently violating water quality standards.¹⁹ The Supreme Court upheld

would meet state water quality standards.

¹³See *Northwest Env'tl. Advocates v. City of Portland*, 74 F.3d 945, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 20707 (9th Cir. 1996) (O'Scannlain, J., dissenting from order rejecting suggestion for rehearing en banc); see also *Upper Chattahoochee Riverkeeper Fund v. City of Atlanta*, 986 F. Supp. 1406, 28 Env'tl. L. Rep. (Env'tl. L. Inst.) 20330 (N.D. Ga. 1997) (deciding on summary judgment that a combined sewer overflow permit prohibition against causing "violation of water quality standards" required that every sample meet all of the numeric criteria). Other courts have declined to decide that issue on summary judgment. See, e.g., *McClellan Ecological Seepage Situation v. Weinberger*, 707 F. Supp. 1182, 1203, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20124, 20132 (E.D. Cal. 1988), *judgment vacated*, 47 F.3d 325 (9th Cir. 1995); *Culbertson v. Coats Am., Inc.*, 913 F. Supp. 1572, 1580-81, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 20875, 20879 (N.D. Ga. 1995).

¹⁴*Arkansas v. Oklahoma*, 503 U.S. 91, 112 S. Ct. 1046, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20552 (1992).

¹⁵*Arkansas v. Oklahoma*, 503 U.S. 91, 112 S. Ct. 1046, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20552, 20553 (1992) (citation omitted).

¹⁶See, e.g., *Oklahoma v. EPA*, 908 F.2d 595 (10th Cir. 1990).

¹⁷See 40 C.F.R. § 122.44(d).

¹⁸The Supreme Court implied that only federally approved water quality standards were "applicable." This would mean that a discharger in one state need not comply with another state's unapproved water quality standards. This issue is potentially significant since it establishes real consequences to EPA's failure to approve a state standard. In the past, EPA has argued that disapproval of a state standard has no effect until EPA promulgates replacement water quality standards. See *Stream Pollution Control Bd. v. Alexander*, 11 Env 1564 (S.D. Ind. 1978); 40 C.F.R. § 131.21(c).

¹⁹But see *Friends of Pinto Creek v. EPA*, 504 F.3d 1007, 37 Env'tl. L. Rep. (Env'tl. L. Inst.) 20255 (2007) (citing 40 C.F.R. § 122.4 and distinguishing *Arkansas v. Oklahoma*, 503 U.S. 91, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20552 (1992), the court held that the EPA may not issue a permit to a new point source that is discharging pollution into already impaired water where no compliance schedules were in place).

EPA's position that the discharge from Arkansas would violate Oklahoma water quality standards only if the discharge would result in an "actual, detectable or measurable" change in water quality. The Supreme Court held that EPA's interpretation of a state's water quality standard was entitled to deference when it was construing federally approved state water quality standards.

The water quality standards implementation process thus involves a combination of complex scientific and policy issues and presents a sharp contrast with the relative simplicity of implementing promulgated technology-based limitations. The permit writer using technology-based effluent guidelines may need to do no more than impose specific numerical limitations applicable throughout the country to all sources within a given industrial category.

§ 13:76 Effluent standards and limitations—Water-quality-based limitations—Water-quality-related effluent limitations

In addition to the requirement that discharges not violate water quality standards, the Act provides a mechanism to impose stringent limitations on sources on a stream segment that fails to attain designated uses. Section 302 authorizes the imposition of these "water quality related effluent limitations" if the water quality in a stream will not attain the national goals of "fishable/swimmable" waters.¹ Before establishing these limitations the Administrator must hold public hearings and perform some form of "cost/benefit" assessment of the limitations.² These limitations may not be imposed if dischargers can demonstrate that there is "no reasonable relationship" between the costs and benefits of the limits.³ For several reasons, including this cost/benefit test and the availability of limitations based on water quality standards, this section has never been used by EPA.⁴

Section 302 was amended in the Water Quality Act of 1987 to limit its applicability to toxic pollutants. However, it remains unlikely that § 302 will be used because water quality standards and discharge permits based thereon are available to achieve the water quality goals of the Clean Water Act without consideration of the cost/benefit factors contained in § 302. The legislative history of the 1987 amendments indicates that water quality standards are the primary mechanism for establishing water-quality-based limitations and that § 302 is "supplemental" and not intended to "undercut or in any way affect the development" of water quality standards.⁵

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¹CWA § 302, 33 U.S.C.A. § 1312. Section 302(a) authorizes imposition of "water quality related effluent limitations" if discharges from point sources subject to the BAT limitations will still "interfere with the attainment or maintenance of that water quality in a specific portion of the navigable waters which shall assure protection of public water supplies, agricultural and industrial uses, and the protection and propagation of a balanced population of shellfish, fish and wildlife, and allow recreational activities in and on the water."

²CWA § 302(b)(1), 33 U.S.C.A. § 1312(b)(1).

³CWA § 302(b)(2), 33 U.S.C.A. § 1312(b)(2). At least one court has rejected the argument that the "reasonableness" test in § 302 was relevant in evaluating state water quality standards established under § 303. *See Homestake Mining v. EPA*, 477 F. Supp. 1279 (D.S.D. 1979). The legislative history of the amendments to § 302 expressly states: "The provisions of § 302(b)(2) authorizing the modification of effluent limitations apply only to the effluent limitations established under § 302(a)." S. Rep. No. 50, 99th Cong., 1st Sess. 24 (1986).

⁴*See Gaba, Federal Supervision of State Water Quality Standards Under the Clean Water Act*, 36 Vand. L. Rev. 1167, 1200-03 (1983).

⁵The Senate Report on the bill from which the revisions to § 302 derive states:

Ordinarily, State water quality standards established or revised under § 303 designate the uses specified in

§ 13:77 Effluent standards and limitations—Water-quality-based limitations—Toxic effluent standards

Section 307(a)(2) of the Act authorizes the imposition of limitations on the discharge of toxic pollutants more stringent than BAT technology-based limits.¹ Unlike technology-based limitations, these toxic standards are based on the environmental and health effects of the discharge of toxic pollutants. These toxic effluent standards are established as uniform national restrictions and are generally applicable to classes of sources.² Although toxic standards are included in NPDES permits, they are also directly enforceable after they have been promulgated by EPA.³ Since 1972, EPA has promulgated toxic effluent standards for only six pollutants: aldrin/dieldrin, DDT, endrin, toxaphene, benzidine, and PCB.⁴ Although the 1977 amendments to the Act simplified procedural requirements for setting these standards, no new § 307(a)(2) standards have been promulgated since 1976.

§ 13:78 Effluent standards and limitations—Water-quality-based limitations—Ocean discharge criteria

Finally, § 403 of the Act provides for the inclusion of water-quality-based limitations on the discharge of pollutants into all marine waters.¹ Section 403 thus forms the basis for including water-quality-based restrictions in the NPDES permits of coastal facilities discharging into marine waters and on offshore facilities, such as oil and gas drilling and production platforms. Pursuant to § 403(c), EPA has promulgated “water discharge criteria” that specify the factors which permit writers must address to ensure that no marine discharge will cause “unreasonable degradation of the marine environment.”² These criteria generally give permit writers considerable discretion to impose conditions in NPDES permits on marine

§ 101(a)(2) of the Act, and if implemented through adequate criteria, waste load allocations, and effluent limitations in permits, will protect the level of water quality addressed by § 302(a). The Administrator is to use the authority of § 302(a), however, where compliance with best available technology requirements or the State water quality standards process are not attaining this level of water quality, due to point sources.

...

Section 303 of the Act is the primary mechanism for the development of State water quality standards and effluent limitations based on them. In developing standards under that section, States are authorized to consider the economics of achieving such standards only as allowed under EPA's regulations established pursuant to § 303. Section 302 is not intended to undercut or in any affect the development of water quality standards under § 303 nor the imposition of § 301(b)(1)(C) of the Act. Rather, it is a supplemental provision which directs the Administrator, with the concurrence of the State, to impose effluent limitations which assure the attainment or maintenance of water quality for the protection of public health, public water supplies, agricultural and industrial uses, and the protection and propagation of a balanced population of shellfish, fish, and wildlife, and recreational activities in and on the water, in situations where the adopted water quality standards do not assure the attainment and maintenance of such uses, including in some instances those waters that are listed under the new § 305(c).

S. Rep. No. 50, 99th Cong., 1st Sess. 24 (1986).

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¹CWA § 307(a)(2), 33 U.S.C.A. § 1317(a)(2).

²*See* *Env'tl. Def. Fund v. EPA*, 598 F.2d 62, 8 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20765 (D.C. Cir. 1978).

³CWA § 402(k), 33 U.S.C.A. § 1342(k). *Cf.* *Inland Steel Co. v. EPA*, 574 F.2d 367, 8 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20354 (7th Cir. 1978).

⁴40 C.F.R. § 129.

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¹CWA § 403, 33 U.S.C.A. § 1343. Section 403 provides that no permit for a discharge into the “territorial sea, the waters of the contiguous zone, or the oceans” shall be issued except in compliance with ocean discharge guidelines established under this section.

²40 C.F.R. §§ 125.120-.124.

discharges.³ Where the permit writer, however, is unable to make a determination whether a discharge will cause “unreasonable degradation,”⁴ the regulations specifically require, among other things, that the permit contain certain bioassay-based limitations on the toxicity of the discharge, a monitoring program, and a reopener clause that will authorize the Agency to modify or prohibit the discharge on the basis of new information.⁵

§ 13:79 Effluent standards and limitations—Water-quality-based limitations—Toxic pollutant control strategies

Since adoption of the 1972 amendments to the Federal Water Pollution Control Act, EPA’s primary emphasis has been on the promulgation of technology-based limitations for inclusion in NPDES permits.¹ In the Water Quality Act of 1987, Congress, however, mandated a new focus on toxic pollutants under the water quality standards program. A new provision, § 304(l), requires states to identify waters that will not comply with water quality standards and to develop strategies to limit the discharge of toxic pollutants by point sources. EPA has promulgated regulations implementing these requirements that provide new and important mechanisms for controlling toxic pollutants through the water quality standards program.

§ 13:80 Effluent standards and limitations—Water-quality-based limitations—Toxic pollutant control strategies—Section 304(l) individual control strategies and state lists

EPA has, in the past, attempted to focus control efforts on stream segments where toxic discharges are a problem;¹ § 304(l) of the Clean Water Act now formalizes this effort. States are under tight deadlines to identify waters where discharges of toxic pollutants are a problem, frequently called “toxic hot spots,” and to implement point source controls to eliminate the problem.²

Section 304(l) requires states to develop three lists of state waters and one list of

³Examples of EPA ocean discharge permits include the 2012 Beaufort Sea and Chukchi Sea Oil and Gas Exploration NPDES General Permits. See U.S. EPA, Region 10: the Pacific Northwest, Arctic Oil and Gas Exploration General Permits, <http://yosemite.epa.gov/r10/water.nsf/npdes+permits/arctic-gp>. These general permits cover “wastewater discharges from oil and gas exploration on the Beaufort Sea Outer Continental Shelf and Contiguous State Waters and on the Chukchi Sea Outer Continental Shelf.” <http://yosemite.epa.gov/r10/water.nsf/npdes+permits/arctic-gp>.

⁴“Unreasonable degradation of the marine environment” is defined at 40 C.F.R. § 125.121(3). See also 40 C.F.R. § 125.122 (determination of unreasonable degradation of the marine environment.); 45 Fed. Reg. 65942, 65945, 65953 (Oct. 3, 1980) (“unreasonable degradation of the marine environment” means: “(1) significant adverse changes in ecosystem diversity, productivity and stability of the biological community within the area of discharge and surrounding biological communities; (2) threats to human health through direct exposure to pollutants or through consumption of exposed aquatic organism; or (3) loss of esthetic, recreational, scientific or economic values which are unreasonable in relation to the benefits derived from the discharge”).

⁵40 C.F.R. § 125.123(d). For a detailed discussion of § 403, see § 13:133.

[Section 13:79]

¹See generally Gaba, Regulation of Toxic Pollutants Under the Clean Water Act: NPDES Toxics Control Strategies, 50 J. Air L. & Comm. 761, 787–90 (1985).

[Section 13:80]

¹See Gaba, Federal Supervision of State Water Quality Standards Under the Clean Water Act, 36 Vand. L. Rev. 1167, 1216–17 (1983).

²EPA published guidance entitled “Implementation of Requirements under § 304(l) of the Clean Water Act, as amended” in March 1988. EPA subsequently promulgated an “interpretative” rule that incorporated portions of § 304(l) into its existing NPDES and water quality regulations. 54 Fed. Reg. 246 (1989). On June 2, 1989, EPA promulgated final regulations defining a surface water toxics control program under § 304(l). 54 Fed. Reg. 23868 (June 2, 1989).

point sources. Section 304(l)(1)(A)(i) (the “A(i) list”) requires states to list waters that will not attain or maintain water quality standards due to toxic pollutants. Section 304(l)(1)(A)(ii) (the “A(ii) list”) requires designation of waters that will not attain the water quality goals of aquatic protection and recreation specified in § 101(a) of the Act. Section 304(l)(1)(B) (the “B list”) requires listing of waters that are not expected to attain water quality standards after application of all technology-based limits, due “entirely or substantially to discharges from point sources of toxic pollutants.” Finally, § 304(l)(1)(C) (the “C list”) requires states to list for each segment of water “on such lists” a determination of the specific point sources discharging any toxic pollutants that are believed to be preventing or impairing this water quality.

This mind numbing list of lists is significant. Point sources on “each such segment” are subject to “individual control strategies” (ICS).³ For each such point source, the state must submit a final or draft NPDES permit that contains limitations on toxic pollutants sufficient to ensure, together with controls on other point and nonpoint sources, achievement of water quality standards.⁴ The key element of the ICS regulation is the requirement that all NPDES permits for point sources on the 304(l)(1)(C) list contain adequate limitations on toxic pollutants to ensure attainment of water quality standards.⁵ Compliance is to be achieved “not later than 3 years” from the date of establishment of the strategy. The strategies were also due on February 4, 1989.

EPA originally interpreted § 304(l) to require that point sources be listed only if they were on segments listed on the “B list.” This included waters not meeting water quality standards due “entirely or substantially” from point source discharges of toxic pollutants.⁶ Additionally, EPA interpreted the statute to require preparation of ICSs only for point sources on the “C list.” This meant that the obligation to prepare “individual control strategies” did not apply to point sources on segments not meeting water quality standards because of a combination of point and nonpoint source discharges.

This position was rejected by the Ninth Circuit in *Natural Resources Defense Council, Inc. v. EPA*.⁸ Relying on the plain meaning and purpose of § 304(l), the court held that states were required to list point sources on the “C list” if they were on segments identified on either the “A(i),” “A(ii),” or “B lists.” The court declined to decide the critical question of whether ICSs need be prepared for point sources on segments identified on any of the three lists. The court remanded the issue to EPA for reconsideration in light of its holding that the “C list” must include all such point sources.

In response to the court’s remand, EPA amended its regulations to require states to identify all point sources on any of the three lists.⁹ Additionally, EPA proposed regulations addressing the issue of whether ICSs are required for any of the newly listed point sources.¹⁰ EPA proposed that only point sources originally listed be subject to the ICS requirement or that states be given discretion to determine

³Section 304(l)(1)(D), 33 U.S.C.A. § 1314(l)(1)(D). EPA has promulgated a new 40 C.F.R. § 123.46, “Individual control strategies.” 54 Fed. Reg. 246, 256 (1989); 54 Fed. Reg. 23868, 23896 (1989).

⁴54 Fed. Reg. 23868, 23896 (1989) (codified at 40 C.F.R. § 123.46(a)).

⁵54 Fed. Reg. 23868, 23896 (1989) (codified at 40 C.F.R. § 123.46).

⁶40 C.F.R. § 130.10(d).

⁷40 C.F.R. § 123.46.

⁸*See, e.g., Nat. Res. Def. Council, Inc. v. EPA*, 915 F.2d 1314, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 21372 (9th Cir. 1990).

⁹57 Fed. Reg. 33040 (1992) (codified at 40 C.F.R. § 130.10(d)).

¹⁰57 Fed. Reg. 33051 (1992).

whether a newly listed point source should be subject to the requirement. EPA considered, but did not propose, requiring all newly listed point sources to have an ICS.

Independent of the ICS regulations, EPA's water quality standards regulations contain provisions for identifying permits that must contain water quality standards based limitations. NPDES permits must contain limits on any pollutants that "cause, have the reasonable potential to cause, or contribute to an excursion" above water quality standards.¹¹ In determining whether a discharge may cause such an "excursion," permit writers are to consider existing controls on point and nonpoint sources, the variability of the discharge, sensitivity of species to toxicity testing, and dilution of the effluent in the receiving water.¹² Permit limits must be written to ensure compliance with pollutant-specific criteria, whole effluent criteria, and narrative criteria.

§ 13:81 Effluent standards and limitations—Water-quality-based limitations—Toxic pollutant control strategies—Toxicity-based limitations

Most permit limitations are expressed as numerical limitations on the amounts of a specific pollutant that can be discharged. For several years, EPA has considered the possibility of placing restrictions not only on specific pollutants within a waste stream but also on the toxicity of the waste stream as a whole. Several bioassay techniques, such as the LC50, which measures the pollutant level at which 50 percent of test organisms are killed, are available to measure the toxicity of wastes to test organisms. Thus, for example, a toxicity-based permit limitation might specify that the discharge not exceed some percent of the LC50 for test organisms.

EPA's existing NPDES permit regulations provide for inclusion of toxicity-based effluent limitations.¹ EPA has also published a "National Policy" on development of water-quality-based permit limitations for toxic pollutants in areas where water quality standards are being violated.² In addition to the use of toxicity tests as a specific effluent limitation, EPA has indicated that toxicity testing may be required as a method for monitoring the discharge.³ EPA specifically requires that NPDES permits contain effluent limits for whole effluent toxicity when necessary to avoid violating a state numeric whole effluent toxicity criterion.⁴

Toxicity-based limitations have a number of advantages over pollutant-by-pollutant numerical restrictions. First, they can provide restrictions on the discharge of a large number of complex toxic pollutants that otherwise might not be measurable. Second, whole effluent toxicity testing, unlike pollutant-by-pollutant limitations, takes into account the chemical interactions of pollutants in the waste stream. Finally, such restrictions are tailored to local conditions since they can employ local receiving waters and local organisms in the test procedures. With the adoption of the new ICS regulations, toxicity-based limitations should become increasingly important.

Toxicity-based permit limitations do, however, create many difficult issues relating to, among other things, measurement and enforceability. In *Natural Resources*

¹¹54 Fed. Reg. 23868, 23895–96 (1989) (codified at 40 C.F.R. § 122.44(d)(1)(i)).

¹²54 Fed. Reg. 23868, 23896 (1989) (codified at 40 C.F.R. § 122.44(d)(1)(ii)).

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¹40 C.F.R. § 129.7.

²49 Fed. Reg. 9016 (1984) (National Policy).

³49 Fed. Reg. 9016, 9017 (1984).

⁴54 Fed. Reg. 23868, 23896 (1989) (codified at 40 C.F.R. § 122.44(d)(1)(iv)).

Defense Council v. EPA,⁵ the court upheld EPA's statutory authority to impose toxicity-based limits, but recognized that technical and procedural issues might arise during permit issuance. EPA also recognizes potential problems with the use of "whole effluent toxicity" limits, and the EPA has announced that it will take steps to address numerous issues relating to toxicity limits.⁶

§ 13:82 Effluent standards and limitations—Water-quality-based limitations—Toxic pollutant control strategies—Narrative criteria-based limitations

Perhaps the most interesting and potentially important aspect of EPA's regulations is their reliance on narrative criteria. Narrative toxicity criteria (*e.g.*, "waters should be free from toxic pollutants in toxic amounts") are contained in all state water quality standards, and under EPA's regulations, NPDES permits must contain specific limits to ensure that narrative criteria are not violated.¹

In the absence of promulgated chemical-specific criteria, the regulations provide that the narrative criteria can be implemented in a number of ways. First, the permit may contain a limit based on a proposed state numeric criterion or an explicit state policy or regulation implementing its narrative criteria, supplemented with other relevant information, including risk assessment and exposure data, EPA criteria documents, and information on the pollutant from the Food and Drug Administration.² Second, the permit may contain an effluent limit developed on a case-by-case basis using EPA's national 307(a) water quality criteria. Third, the permit may contain specific limits on "indicator" pollutants so long as certain requirements, including monitoring requirements and reopener clauses, are satisfied.³

Through these regulations, EPA has not only authorized but required that each major point source of toxic pollutants be subject to limits on all priority pollutants. Since the regulations rely on narrative criteria as well as specific criteria for toxic pollutants, authority exists to implement these requirements immediately. In *American Paper Institute v. EPA*, the D.C. Circuit confirmed this broad authority.⁴ The court upheld EPA regulations, which allow the permit writer to "translate" general narrative criteria into specific numerical effluent limits in NPDES permits.

§ 13:83 Effluent standards and limitations—Water-quality-based limitations—Great Lakes water quality guidance

Section 118(c)(2) of the Clean Water Act requires EPA to publish "water quality

⁵Nat. Res. Def. Council, Inc. v. EPA, 859 F.2d 156, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20016 (D.C. Cir. 1988).

⁶See Notice of Stakeholders' Meeting on Whole Effluent Toxicity (WET) Implementation Issues, 61 Fed. Reg. 41149 (1996).

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¹54 Fed. Reg. 23868, 23896 (1989) (codified at 40 C.F.R. § 122.44(d)(v)). In *Natural Resources Defense Council, Inc. v. EPA*, 859 F.2d 156, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20016 (D.C. Cir. 1988), the court found that industry challenges to EPA's assertion of authority to implement state narrative criteria through toxicity-based NPDES limits were "unripe."

²In *Granite City Div. of Nat'l Steel Co. v. Illinois Pollution Control Bd.*, 613 N.E.2d 719 (Ill. 1993), the Illinois Supreme Court upheld the state narrative criteria in translation mechanisms from claims that they were unconstitutionally vague and were an unconstitutional delegation of rulemaking authority to the Illinois environmental agency.

³54 Fed. Reg. 23868, 23896 (1989), codified at 40 C.F.R. § 122.44(d)(vi).

⁴See, *e.g.*, *Am. Paper Inst. v. EPA*, 996 F.2d 346, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20984 (D.C. Cir. 1993).

guidance” for the Great Lakes system that, among other things, specifies numerical limits on pollutants and provides guidance on minimum water quality standards, antidegradation policies, and implementation procedures.¹ In 1995, EPA published its final “water quality guidance” provisions that establish binding obligations on states to implement water quality standards provisions for the Great Lakes.² Among other things, the guidance establishes (1) specific numerical criteria for certain pollutants that are necessary to protect aquatic life, human health, and—for the first time—wildlife uses; (2) mechanisms for site-specific modification of these criteria; (3) a two-tiered mechanism for converting narrative criteria into specific numerical criteria for other pollutants;³ (4) limitations on use of mixing zones, with special restrictions on their use with pollutants that bioaccumulate; (5) provisions for determining whether it is “reasonably probable” that a discharge will cause an exceedance of criteria;⁴ (6) variance procedures for altering water quality standards obligations in individual permits; and (7) more permit detailed antidegradation requirements.⁵ These obligations mirror many of the general water quality standards provisions applicable throughout the country. The guidance does, however, modify some otherwise applicable requirements and may be a model for future implementation of the water quality standards program.

§ 13:84 Industrial pretreatment of POTW influents¹—Basic structure of the pretreatment program

The NPDES permit system is applicable to those facilities that “directly” discharge pollutants into waters of the United States. There are, however, a large number of industrial facilities that are not subject to NPDES requirements because they discharge pollutants to POTW, rather than directly into navigable waters.² Although Congress did not want to require these “indirect dischargers” to undertake unnecessary treatment of pollutants that would otherwise be removed by the POTW, there was concern that industrial pollutants introduced into the POTW might pass through the POTW without being treated, interfere with the operation of the treatment systems used by POTW, or, in the case of metals, contaminate sewage sludge

[Section 13:83]

¹CWA § 118(c)(2), 33 U.S.C.A. § 1268(c)(2). The Great Lakes Critical Programs Act of 1990, Pub. L. No. 101-596, § 101, 104 Stat. 3000, added this provision to the Clean Water Act.

²60 Fed. Reg. 15366 (1995), codified at 40 C.F.R. Part 132. In 1997, the D.C. Circuit largely upheld the water quality guidance against a range of procedural and substantive attacks. *American Iron & Steel Inst. v. EPA*, 115 F.3d 979, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 21241 (D.C. Cir. 1997). In one particularly interesting part of the opinion, the court invalidated EPA's attempt to require dischargers to perform a “pollutant minimization program” where their required water-quality-based permit limitations were set below detection limits. The court held that EPA could require monitoring of internal waste streams for purposes of ensuring compliance with end-of-pipe limitations. It concluded, however, that EPA was precluded from imposing water-quality-based standards on internal waste streams, noting the Clean Water Act “does not permit this sort of meddling inside a facility.” *American Iron & Steel Inst. v. EPA*, 115 F.3d 979, 996, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 21241, 21248 (D.C. Cir. 1997).

³The methodology for each tier varies depending on the amount of data available based on the narrative criteria.

⁴Such a finding requires inclusion of water-quality-based effluent limitations in the discharge permit.

⁵Some other major issues addressed include development of TMDLs, the additive effects of pollutants, “net/gross” issues regarding pollutants in intake water, and procedures relating to whole effluent toxicity.

[Section 13:84]

¹By **Jeffrey Gaba**.

²EPA has estimated that there are over 60,000 existing industrial facilities in the 34 primary industries that discharge wastes to POTWs. 46 Fed. Reg. 9405 (1981).

and limit its subsequent disposal.

Consequently, Congress in § 307 of the Clean Water Act established a distinct “pretreatment” program for regulation of these indirect dischargers. Section 307(b) requires EPA to promulgate regulations establishing pretreatment standards for introduction into [POTW] for those pollutants which are determined not to be susceptible for treatment by such treatment works or which would interfere with the operation of such treatment works Pretreatment standards . . . shall be established to prevent the discharge of any pollutant through [POTW] which pollutant interferes with, passes through or otherwise is incompatible with such works.³ Although indirect dischargers may be subject to local permit requirements,⁴ there is no national permit program for indirect dischargers. Pretreatment standards are directly applicable to indirect dischargers upon promulgation.⁵

EPA has established a two-part system for implementing the pretreatment program of § 307. First, EPA has promulgated “General Pretreatment” regulations that establish a general prohibition on the introduction of pollutants that will interfere with or pass through a POTW.⁶ In addition, the general pretreatment regulations contain requirements for administration of the pretreatment program, including requirements on POTW to develop local programs to implement and monitor pretreatment requirements. Second, EPA is promulgating “categorical” pretreatment requirements, on an industry-by-industry basis, that establish specific technology-based numerical limitations on the discharge of pollutants to POTW by existing and new sources.⁷

§ 13:85 Industrial pretreatment of POTW influents—Requirements applicable to the indirect discharger—Categorical standards: Technology-based limits, toxic removal credits, combined wastestream formula

Although § 307(b) requires the promulgation of regulations to prevent discharges that pass through or interfere with POTW operations, the provision is ambiguous as to whether these restrictions are to be uniform national “technology-based” limitations or are to be based on consideration of local environmental factors.¹ In a 1976 consent decree, EPA agreed to adopt a technology-based approach to pretreatment restrictions.² Pursuant to the consent decree, EPA has adopted a scheme for developing “categorical” restrictions for classes or categories of industrial sources in which pretreatment limits are developed equivalent to BPT, BAT, and NSPS effluent limi-

³CWA § 307(b)(1), 33 U.S.C.A. § 1317(b)(1).

⁴In *County Sanitation Dist. No. 2 of Los Angeles County v. Inland Container Corp.*, 803 F.2d 1074 (9th Cir. 1986), the Ninth Circuit limited permit authority to the sewer district owning the sewer into which the pollutant is discharged.

⁵CWA § 307(d), 33 U.S.C.A. § 1317(d).

⁶EPA’s general pretreatment regulations are found at 40 C.F.R. Part 403.

⁷40 C.F.R. §§ 405-471.

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¹Although the statute is aimed at preventing “interference” and “pass through,” there is clear indication that Congress intended that this be done through technology-based limits applicable to classes and categories of facilities. For example, § 307(c) requires promulgation of pretreatment standards for categories of new sources. Section 307(b)(2) requires modification of pretreatment standards to reflect changes in control technology or processes. *See* 43 Fed. Reg. 27736 (1978).

²*Nat. Res. Def. Council v. Train*, No. 78-1803 (D.D.C. 1978). The consent decree has been subject to a series of subsequent modifications.

tations guidelines.³ Limitations are established for those pollutants that EPA, on a national basis, has determined would “pass through” a POTW if they were not subject to categorical limitations.⁴ Like the effluent guidelines, categorical pretreatment standards are based on the economic and technological capacity of the industry as a whole to control the discharge of pollutants.⁵

In 1977, § 307(b) was amended to authorize POTW to grant “removal credits” from categorical standards for toxic pollutants to reflect the level of treatment of those pollutants achieved by the POTW.⁶ The amendment has several components. First, it clearly establishes that the combined level of treatment of toxic pollutants by the indirect discharger and the POTW must be equivalent to the technology-based effluent limitation, such as BAT, that would be applicable if the source were a direct discharger. Second, in recognition that there is some incidental removal of toxic pollutants by POTW and to avoid redundant treatment requirements, the amendment authorizes POTW to grant indirect dischargers “removal credits” from applicable pretreatment requirements to the extent that the POTW treats that toxic pollutant. Finally, since most toxic metals discharged to POTW are merely transferred to POTW sludge, the amendment also precludes the grant of the removal credit if it would prevent sludge use or disposal in accordance with sludge management guidelines that Congress, in amendments to § 405, required EPA to promulgate.⁷

EPA regulations implementing the removal credit provisions have gone through several revisions.⁸ In the 1981 general pretreatment regulations, EPA provided that removal credits could only be granted by POTW with approved pretreatment programs and established detailed conditions for determining the level of the credit

³EPA regulations provide that, upon request, EPA may provide written certification on whether an industrial user falls within a particular subcategory subject to categorical standards. 40 C.F.R. § 403.6(a)(1). In *Modine Mfg. Corp. v. Kay*, 791 F.2d 267, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20750 (3d Cir. 1986), the court held that the court of appeals had jurisdiction under § 509 of the Clean Water Act to review the EPA's determination that categorical standards applied to an individual facility.

⁴EPA bases its determination of “pass through” on a comparison of the percentage removal of the pollutant by a POTW with that of a direct discharger. EPA has stated that “[a] pollutant will be deemed to Pass Through the POTW and will thus be categorized as incompatible, where the average treatment provided by POTWs nationwide does not realize the same percentage of removal of the regulated parameter as would be required of direct dischargers with national effluent standards for the pollutant.” 45 Fed. Reg. 9416 (1981).

⁵Several provisions applicable to technology-based limitations in the NPDES program have comparable provisions in the general pretreatment regulations. These include an “Upset” provision, 40 C.F.R. § 403.16, “Net/Gross” provisions, 40 C.F.R. § 403.15, and a “Fundamentally Different Factors” variance, 40 C.F.R. § 403.13. The application of the FDF variance to categorical pretreatment limits on toxic pollutants was upheld by the Supreme Court in *Chemical Mfrs. Ass'n v. Nat. Res. Def. Council, Inc.*, 470 U.S. 116, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20230 (1985). The Agency has proposed the addition of a “Bypass” provision to the pretreatment regulations. 51 Fed. Reg. 21456 (1986) (codified at 40 C.F.R. § 403.17).

⁶If in the case of any toxic pollutant . . . introduced by a source into a publicly owned treatment works, the treatment by such works removes all or any part of such toxic pollutant and the discharge from such works does not violate that effluent limitation that would be applicable to such toxic pollutant if it were discharged by such source other than through a publicly owned treatment works, and does not prevent sludge use or disposal by such works in accordance with § 405 of this act, then the pretreatment requirements for the sources actually discharging such toxic pollutant into such publicly owned treatment works may be revised by the owner or operator of such works to reflect the removal of such toxic pollutant by such works. CWA § 307(b)(1), 33 U.S.C.A. § 1317(b)(1).

⁷At that time, EPA had not yet promulgated comprehensive sludge management guidelines under § 405. The failure to promulgate such standards was one basis on which the court in *Nat. Res. Def. Council v. EPA* invalidated EPA's removal credit regulations. *Nat. Res. Def. Council, Inc. v. EPA*, 790 F.2d 289, 313–14 (3d Cir. 1986). See § 13:90.

⁸Removal Credit provisions are found at 40 C.F.R. § 403.7.

that could be granted.⁹ Although the program was upheld from industry challenge in *National Association of Metal Finishers v. EPA*,¹⁰ the Agency subsequently made significant revisions to the program to ease the requirements for obtaining removal credits.¹¹ These revisions were all invalidated by the Third Circuit in *Natural Resources Defense Council v. EPA*.¹²

An additional problem with categorical standards arises when one industrial site contains operations from several industrial categories. In such a case, the facility may wish to combine the wastewater from operations subject to different categorical standards or from some operations that are subject to categorical standards and others that have no applicable standards. The combination of wastestreams may allow more cost-efficient treatment at a centralized waste treatment plant.

EPA regulations authorize the combination of such wastestreams prior to treatment and contain a detailed “Combined Wastestream Formula” for calculating applicable final standards based on the relative contribution of the wastes from the separate industrial operations.¹³ In arriving at this complex formula, EPA sought to allow use of efficient centralized treatment while preventing the attainment of standards by dilution of regulated wastes by other wastestreams.

Indeed, the regulations also prohibit the increased use of process water, or any other means of dilution, as a partial or complete substitute for adequate treatment to achieve compliance with categorical standards.¹⁴ Mass limitations may be imposed on a facility which attempts to achieve concentration limits by dilution of wastes.¹⁵

§ 13:86 Industrial pretreatment of POTW influents—Requirements applicable to the indirect discharger—General prohibitions: Interference and pass through

The general pretreatment regulations provide a flat prohibition on the introduction into a POTW of pollutants that will “pass through” or “interfere” with the operation or performance of the POTW.¹ Interference or pass through generally refers to situations where a discharge results in the POTW violating its NPDES

⁹46 Fed. Reg. 9404 (1981).

¹⁰*Nat'l Ass'n of Metal Finishers v. EPA*, 719 F.2d 624, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21042 (3d Cir. 1983), *rev'd* 470 U.S. 116 (1985). Industry had challenged the removal credit provisions on several grounds, including assertions that EPA could not condition the grant of removal credits on local POTWs having approved pretreatment programs and that the program was simply so complex as to be “unworkable.”

¹¹49 Fed. Reg. 31212 (1984).

¹²*Nat. Res. Def. Council, Inc. v. EPA*, 790 F.2d 289 (3d Cir. 1986). Congress has stayed applicability of portions of this opinion. *See* Pub. L. No. 100-4, 101 Stat. 73; § 13:90 and accompanying text. The revisions failed to provide for the equivalency between the level of combined treatment by indirect dischargers and POTWs and the level applicable to direct dischargers. The court also held that removal credits could not be granted prior to the issuance of comprehensive sludge management guidelines under § 405.

¹³40 C.F.R. § 403.6(e).

¹⁴40 C.F.R. § 403.6(d).

¹⁵The Water Quality Act of 1987 amended § 307, 33 U.S.C.A. § 1317, to allow a compliance extension of up to two years for facilities that propose to comply with pretreatment requirements through the use of an innovative system. It also added a new § 402(m), 33 U.S.C.A. § 1342(m), that expressly limits EPA's authority to require any additional pretreatment of conventional pollutants by facilities introducing pollutants to POTWs that are violating their NPDES permit due to inadequate design or operation.

[Section 13:86]

¹In addition, all indirect dischargers are subject to specific prohibitions that they not introduce pollutants that (1) create a fire or explosion hazard at a POTW, (2) cause corrosive structural damage, (3) are solid or viscous in amounts which will cause obstruction of the flow in the POTW resulting in

permit or prevents the POTW from disposing of sewage sludge in accordance with the requirements of other statutes. Although the categorical standards place specific limitations on discharges by facilities in select industrial categories, these standards alone may not be enough to prevent all interference or pass through at POTW. Categorical standards have not been promulgated for all industrial sources, and in individual situations, the categorical standards may be inadequate either because of combinations of pollutants or discharges to the POTW from multiple sources.

The main problem with which EPA has been dealing in establishing this general prohibition is the extent to which an individual discharger must be shown to have caused the interference or pass through. EPA initially promulgated a definition that established a violation if the discharger “contributed to” violation of a permit or sludge use.² In response to challenge, EPA revised the definition to provide a violation if the discharger “caused or significantly contributed” to a violation.³ The definition identified specific situations under which a discharger would significantly contribute to a violation. In *National Association of Metal Finishers v. EPA*, the Third Circuit invalidated the definition of interference.⁴ The court concluded that the definition of “significantly contributes” effectively eliminated any requirement that the indirect discharger be a “cause” of the permit violation or sludge use limitation.

In response, EPA has promulgated revised regulations that define “interference” as a discharge that, alone or in conjunction with a discharge or discharges from other sources, disrupts the POTW or sludge processes and the disruption in turn causes a POTW to violate its NPDES permit or prevents the POTW from using its chosen sludge use or practice.⁵ “Pass through” is defined as an industrial-user discharge that exits the POTW into waters of the United States in quantities or concentrations that, alone or in conjunction with other discharges, causes a POTW NPDES permit violation.⁶ Thus, the regulations provide that an indirect discharger violates the general prohibition against interference or pass through based on a largely undefined requirement that they not “cause” a violation of POTW permit or sludge requirements.

In *Arkansas Poultry Federation v. EPA*,⁷ the Eighth Circuit upheld the revised definitions of “interference” and “pass through” against the challenge that they were inconsistent with the statute and unconstitutionally vague. The court concluded that the definitions properly clarified that industrial dischargers could be held liable only for discharges that cause permit violations at treatment facilities and not for violations caused solely by improper operation of treatment facilities. The court also held that the definitions, when read with other requirements referred to in the regulations, provide sufficient notice of industrial sources’ pretreatment obligations to withstand a vagueness challenge.

The regulations provide a certain element of certainty for the industrial user by establishing two new affirmative defenses to a violation of the general prohibition. The defenses require the indirect discharger to establish that “it did not know or

interference, or (4) contain heat in amounts to cause interference. 40 C.F.R. § 403.5(b).

²43 Fed. Reg. 27736 (1978).

³44 Fed. Reg. 62260 (1979).

⁴*Nat’l Ass’n of Metal Finishers v. EPA*, 719 F.2d 624, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 21042 (3d Cir. 1983), *rev’d* 470 U.S. 116 (1985). The definition of “pass through” was also challenged but EPA voluntarily withdrew the definition conceding that it had not been promulgated in accordance with procedural requirements of the Administrative Procedure Act.

⁵40 C.F.R. § 403.3(k).

⁶40 C.F.R. § 403.3(p).

⁷*See, e.g., Ark. Poultry Fed’n v. EPA*, 852 F.2d 324, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 21384 (8th Cir. 1988).

have reason to know” that its discharge would violate the standard, and (1) that the discharge was in compliance with an applicable local limit developed by the POTW to prevent interference or pass through or (2) if a local limit has not been developed, that the discharges directly prior to and during the interference or pass through “did not change substantially in nature from the User’s prior discharge activity” when the POTW was regularly not experiencing interference or pass through.⁸

§ 13:87 Industrial pretreatment of POTW influents—Requirements applicable to the indirect discharger—Local limits

In addition to categorical limits and the broadly applicable general prohibitions, indirect dischargers may be subject to specific local limits developed by individual POTW. The general pretreatment regulations require certain POTW to develop these local limits to implement the prohibition on interference and pass through.¹ POTW must develop these local limits if they are required to establish approved pretreatment programs or if they have previously experienced interference or pass through and it is likely to recur. EPA has stated that the local limits may be developed on a pollutant-by-pollutant or industry-by-industry basis and included within a municipal ordinance. Additionally, local limits may be developed for a specific facility and included within a municipal permit or contract with that facility.² Once established, local limits constitute pretreatment standards for purposes of compliance with the Clean Water Act.³

§ 13:88 Industrial pretreatment of POTW influents—Requirements applicable to the indirect discharger—Compliance monitoring

The general pretreatment regulations require indirect dischargers to submit several different monitoring reports. “Baseline Monitoring Reports” must be submitted within 180 days of the effective date of categorical standards or a final decision on a category determination.¹ These BMRs are to contain basic information identifying each indirect discharger, the characteristics of the discharge, and the discharger’s compliance status.² Dischargers must also submit “90-day Compliance Reports” within ninety days of the final compliance deadline for categorical standards. These compliance reports must contain information on the pollutant concentrations and flow rates and indicate compliance status.³ Finally, after the compliance date for categorical standards, dischargers are required to submit “Periodic Compliance Reports” either in June or December of each year, or more frequently if required by the POTW, that contain information on pollutant concentrations and flows.⁴ The regulations specify necessary procedures for conducting analyses to satisfy compli-

⁸40 C.F.R. § 403.5(a)(2).

[Section 13:87]

¹40 C.F.R. § 403.5(c).

²See 51 Fed. Reg. 21459 (1986).

³40 C.F.R. § 403.5(d).

[Section 13:88]

¹40 C.F.R. § 403.12(b).

²The BMR, for example, must include a list of environmental permits held by the discharger, a description of the discharger’s industrial operations, information on flows and amounts of regulated pollutants discharged to the POTW, and a certification of whether the discharger is currently in compliance with applicable categorical standards. 40 C.F.R. § 403.12(b)(1)-(7).

³40 C.F.R. § 403.12(d).

⁴40 C.F.R. § 403.12(e).

ance monitoring requirements.⁵

§ 13:89 Industrial pretreatment of POTW influents—Requirements applicable to POTW—Development of approved pretreatment programs

POTW with a total design flow greater than five million gallons per day and that receive wastes from industrial facilities subject to categorical standards or that receive wastes which may interfere or pass through the POTW are required to develop a local pretreatment program.¹ In order to obtain approval, a required pretreatment program must contain a number of elements, including: authority to deny or condition discharges by industrial users to the POTW, adequate monitoring and inspection capability, adequate penalties for violation of the local program, and adequate funding and personnel to implement the program.² The regulations provide that POTW must have had an approved program no later than July 1, 1983,³ and that the approved program be incorporated in the POTW NPDES permit.⁴

§ 13:90 Industrial pretreatment of POTW influents—Requirements applicable to POTW—Removal credit authority

Although they are not required to do so, POTW may apply for authority to grant removal credits to industrial users subject to categorical pretreatment standards.¹ A POTW may obtain authorization to grant such credits if the POTW can demonstrate “consistent” removal of pollutants as defined by the regulation, it has an approved local pretreatment program, the granting of the credits will not cause the POTW to violate sludge management standards and the grant of credits will not cause the POTW to violate its NPDES permit.²

Basic elements of the removal credit program, including provisions for calculation of the degree of consistent removal by POTW, were invalidated in *Natural Resources Defense Council, Inc. v. EPA*.³ The court concluded that EPA’s removal credit regulations failed to ensure that there would be equivalence between the level of treatment required of direct dischargers and the combined level of treatment that would be achieved by indirect dischargers and POTW. The court also held that removal credits could not be granted prior to the issuance of comprehensive sludge management guidelines under § 405. Section 406(e) of the Water Quality Act of 1987⁴ expressly stays “that part of the decision in [*Natural Resources Defense Council, Inc. v. EPA*] which addresses 405(d)” until August 31, 1987, for POTW that

⁵40 C.F.R. § 403.12(g).

[Section 13:89]

¹40 C.F.R. § 403.8(a). Other POTWs may be required by EPA to develop a pretreatment program if “warranted” to prevent interference or pass through. 40 C.F.R. § 403.8(a). States with approved NPDES programs, however, may elect to assume local responsibilities in lieu of the POTW. 40 C.F.R. § 403.10(e).

²40 C.F.R. § 403.8(f). In addition, POTWs required to develop pretreatment programs are also required to develop specific local limits necessary to implement the prohibition on interference and pass through. 40 C.F.R. § 403.5(c). See § 13:86.

³40 C.F.R. § 403.8(b).

⁴40 C.F.R. § 403.8(c).

[Section 13:90]

¹40 C.F.R. § 403.7(a)(2). See § 13:85.

²40 C.F.R. § 403.7(a)(2), (3).

³See, e.g., *Nat. Res. Def. Council, Inc. v. EPA*, 790 F.2d 289 (3d Cir. 1986).

⁴Pub. L. No. 100-4, 101 Stat. 73.

had received removal credit authority before February 4, 1987, or that had applied before that date and received approval by August 31, 1987. The amendment prohibits EPA from authorizing any other removal credits until sludge management guidelines have been promulgated and requires EPA to publish those guidelines by August 31, 1987.⁵ The Agency failed to meet this deadline, however, and on November 5, 1987, it published a final rule that essentially codifies the 1981 version of the removal credit regulations, which had been in effect since the decision in *Natural Resources Defense Council, Inc. v. EPA*.⁶

§ 13:91 Industrial pretreatment of POTW influents—Requirements applicable to POTW—Sludge management

The disposal of sewage sludge generated by POTW and other treatment works is a problem of growing importance. Today, over 40 percent of POTW sludge is disposed of in municipal landfills, over 20 percent is incinerated, and the remainder is applied to land or, to a limited extent in the Northeast, dumped at offshore ocean disposal sites. Ideally, sludge is a resource that can be used as a fertilizer or soil conditioner.¹ Where this sludge contains toxic pollutants, such as metals, management options are reduced. Sewage sludge is now potentially regulated under a variety of statutes, including the Clean Water Act, Resource Conservation and Recovery Act, Clean Air Act, Toxic Substance Control Act, and Marine Protection, Research and Sanctuaries Act.

Prior to the 1987 amendments, § 405 of the Clean Water Act required development of sludge standards for POTW but did not specify how these standards were to be implemented. Limited restrictions applicable to land disposal of sludge containing cadmium, PCBs, or pathogens were promulgated in the RCRA Subtitle D regulations at Part 257.² In the 1987 amendments to the Clean Water Act, Congress significantly expanded the provisions of § 405 to establish a more extensive program for control of sewage sludge from both municipal and private treatment works and to regulate the final use and disposal of sludge.³

Among other things, the statute requires inclusion of conditions on sewage sludge in NPDES permits unless the sludge is separately regulated under another permit. NPDES permits for POTW and industrial facilities that treat domestic wastes will require compliance with sludge management procedures. Indeed, the statute expands the NPDES program by authorizing the issuance of a permit to persons using or disposing of sewage sludge who do not otherwise require an NPDES permit.

Under § 405(d), EPA is required to develop management standards for disposal of

⁵The 1987 Act also amended § 405(d) of the Clean Water Act, 33 U.S.C.A. § 1345(d), by requiring EPA, by mandated deadlines, to identify toxic pollutants that may be present in sewage sludge in concentrations that may adversely affect public health or the environment and promulgate regulations specifying “acceptable management practices” for sewage sludge containing toxic pollutants and “establishing numerical limitations on each such pollutant for each such use.” The amendments also provide a new § 405(f), 33 U.S.C.A. § 1345(f), that requires the inclusion of sludge management restrictions in a POTW’s NPDES permit, unless such restrictions are contained in permits issued under certain other specified programs. EPA is authorized to issue permits solely for the purpose of imposing sludge management restrictions if the POTW is not subject to these other permit requirements.

⁶52 Fed. Reg. 42434 (1987) (codifying court’s holding in *Nat. Res. Def. Council, Inc. v. U.S.E.P.A.*, 790 F.2d 289 (3d Cir. 1986) at 40 C.F.R. Part 403).

[Section 13:91]

¹See 54 Fed. Reg. 18720 (1989).

²40 C.F.R. Part 257.

³Clean Water Act § 405(d); 33 U.S.C.A. § 1345(d) (amended by Pub.L. No. 100-4, § 406, 101 Stat. 71 (1987)).

sewage sludge. In 1993, EPA implemented sewage sludge regulations.⁴ The regulations, as amended, provide general requirements, pollutant limits, and management and operational standards for sludges applied to land or on a surface disposal site or fired in an incinerator. They also include monitoring and recordkeeping requirements.

§ 13:92 Industrial pretreatment of POTW influents—Regulation of hazardous wastes introduced to POTW

One of the major loopholes in the regulation of hazardous wastes under the Resource Conservation and Recovery Act (RCRA) has been the domestic sewage exclusion. This exclusion, established by Congress in § 1004(27) of RCRA, provides that solid or dissolved material in domestic sewage or mixtures of domestic sewage that pass through a sewer to a POTW are not a hazardous waste under RCRA. Thus, industrial wastes discharged to POTW are not treated as hazardous wastes even if they would be hazardous if disposed of by other means.

In the 1984 amendments to RCRA, Congress directed EPA to study the domestic sewage exclusion and revise its regulations to ensure that any hazardous wastes introduced to a sewer system are adequately controlled. EPA has adopted regulations pursuant to § 307(b) of the Clean Water Act and § 3018 of RCRA that deal directly with the introduction of hazardous wastes to POTW.

There are a number of elements to these regulations. First, there are specific restrictions on the introduction of ignitable or reactive wastes and limited restrictions on the introduction of petroleum or mineral oil.¹

Second, the regulations attempt to ensure that POTW NPDES permits contain adequate limitations on toxic pollutants. The regulations now require specified POTW to perform biological toxicity testing of their effluent. This testing can result in more stringent NPDES permit conditions on toxic pollutants or toxicity-based permit limits. More stringent limits will trigger greater obligations on indirect dischargers to ensure that their effluent does not violate the general prohibition on interference and pass through.

Third, there are requirements for industrial users of POTW. In most cases, industrial users must notify a POTW if they introduce more than 15 kilograms of hazardous waste per month. Detailed information must be supplied if they introduce more than 100 kilograms per month. Notification must be submitted, however, only once for each hazardous waste that is discharged. Additionally, the regulations require the POTW with approved pretreatment programs to develop “individual control mechanisms” applicable to “significant industrial users.” This will require the POTW to issue discharge permits or their equivalent. The permits must expire in less than five years. The permits must contain, among other things, effluent limits based on the general pretreatment standards, categorical standards, local limits or other state or local laws, and self-monitoring and reporting requirements.

VI. WETLAND PROTECTION*

§ 13:93 History—Introduction

Loss of wetlands acreage in the United States has been a source of national

⁴68 Fed. Reg. 9387 (1993); codified at 40 C.F.R. Part 503.

[Section 13:92]

¹EPA did not, however, place any specific restriction on the introduction of wastes that fail the RCRA toxicity characteristic. The Agency also did not place limits on spent solvents.

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concern since about 1970.¹ Since the nation's settlement, the quantity of wetlands in the United States, excluding Alaska, has dwindled from 215 million acres² to approximately 90 million acres.³ This constitutes a net average annual loss of 458,000 acres.⁴ The Fish and Wildlife Service estimated that as of 1976, forty percent of all wetlands previously existing in the United States had been drained, converted, or otherwise lost as wetland habitat.⁵ This large-scale, long-term loss of wetland acreage in the United States has resulted from numerous, sometimes conflicting, pressures and attitudes.

Wetlands systematically succumbed to the need for arable farmland, airports, urban and suburban housing, reservoirs, and hydroelectric power. They diminished as a result of pressures for deepwater recreational sites, associated piers, docks, roadways, and other causeways are dredged to create channels and canals for flood control, mosquito control, and transportation. Wetlands also have been altered by demands for forest products, paper, and minerals. They have been altered by discharges of pollution, salt water intrusion, and leaks from oil and gas drilling wells.⁶

[Section 13:93]

¹*See, e.g.*, Council on Environmental Quality, *Our Nation's Wetlands: An Interagency Task Force Report* (1978) [hereinafter *Our Nation's Wetlands*]; Exec. Order No. 11990, 42 Fed. Reg. 26961 (1977), *reprinted in* 42 U.S.C.A. § 4321 at 513-14 (1982); Office of Biological Services, U.S. Fish and Wildlife Service, *Status and Trends of Wetlands and Deepwater Habitats in the Conterminous United States, 1950s to 1970s* (1982).

²S. Rep. No. 99-445, at 1-2, (1986), *reprinted in* United States Code Congressional and Administrative News pp. 6113-14.

³Office of Technology Assessment, *Wetlands: Their Use and Regulation 3* (Mar. 1984) (OTA-0-206) (Summary Report at 6). The vast majority of the remaining wetlands—95 percent—are located in inland, freshwater areas. Office of Technology Assessment, *Wetlands: Their Use and Regulation 3* (Mar. 1984) (OTA-0-206) (Summary Report at 7).

⁴Office of Biological Services, U.S. Fish and Wildlife Service, *Status and Trends of Wetlands and Deepwater Habitats in the Conterminous United States 1950s to 1970s*, 6 (1982). The General Accounting Office subsequently placed the number at from 300,000 to 500,000 acres per year. General Accounting Office, *Wetlands: The Corps of Engineers' Administration of the § 404 Permit Program*. More recently, the U.S. Fish and Wildlife Service ("Service") determined that the annual wetland loss rate fell to 58,500 acres between 1986 and 1997. U.S. Fish and Wildlife Service, *Status and Trends of Wetlands in the Conterminous United States 1986 to 1997*, at 9 (2000). And in 2004, the Service reported that, for the first time, there was a net gain of 191,750 wetland acres in the period between 1998 and 2004 (an annual gain of 32,000 acres) due to restoration efforts. U.S. Fish and Wildlife Service, *Status and Trends of Wetlands in the Conterminous United States 1998 to 2004*, at 15 (2006). The current estimate of the total amount of wetlands in the conterminous United States is 1110.1 million acres, and wetland acreage remained roughly unchanged from 2004 to 2009. U.S. Fish and Wildlife Service, *Status and Trends of Wetlands in the Conterminous United States 2004 to 2009*, at 16 (2011).

⁵*Our Nation's Wetlands*, at 1 (citing Lynn A. Greenwalt, Director, U.S. Fish and Wildlife Service, speech to National Wildlife Foundation Annual Conference, Louisville, KY, Mar. 20, 1976, Department of Interior News Release, at 2). *See also* Statement of Robert A. Jantzen, Director, U.S. Fish and Wildlife Service, before the House Committee on Merchant Marine & Fisheries, Subcommittee on Fisheries & Wildlife Conservation and the Environment, Nov. 20, 1981 (concerning wetlands losses) [hereinafter cited as Jantzen]. Mr. Jantzen estimated that 82 million acres remain from an original 127 million acres and that some localized losses are proportionately higher. For example, California has less than 450,000 acres remaining out of an original 3.5 million acres. In contrast, Alaska is estimated to have approximately 200 million acres of wetlands. U.S. Fish and Wildlife Service, *Wetlands of the United States, Current Status and Recent Trends*, at 28 (1984).

⁶*See generally* S. Shaw & C. Fredine, *Wetlands of the United States*, in U.S. Fish & Wildlife Circular 39 5-13, 26, 28 (1956); Statement of Robert A. Jantzen, Director, U.S. Fish and Wildlife Service, before the House Comm. on Merchant Marine & Fisheries, Subcomm. on Fisheries & Wildlife Conservation and the Environment, 9-20 Nov. 20, 1981; Council on Environmental Quality, *Our Nation's Wetlands: An Interagency Task Force Report*, 31-47 (1978). *See also* J. Teal & M. Teal, *Life*

Wetlands provide habitat for a wide variety of wildlife, including water fowl and fur bearers. They also provide commercially invaluable nurseries for the fishing industry, as well as sources and sites for recreational fishing. They serve as breeding areas and habitats for numerous other animals, including amphibians, reptiles, and invertebrates, such as shellfish. The high nutrient exchange and energy components of most wetlands, together with the physical buffers they may provide against the winds and waves associated with open waters, ensure that wetlands are optimal breeding habitats.

Wetlands are essential in the production of detritus, the organic materials that decay to provide the basic elements in the aquatic or estuarine food chains. They also serve in the production of oxygen, carbon dioxide, nitrogen, and methane, which assist in maintaining the biosphere, including the ozone layer, and are valuable sources of timber, particularly southern bottomland hardwood forests and of wetland plant crops, including various rices, hays, and cranberries.

Wetlands serve as overbank and backwater storage areas, which moderate flooding severities along riverine systems. They serve to reduce erosion and to trap silt before it reaches and clouds other water bodies. They also trap pollutants (such as fertilizer and pesticide residues) in surface water runoff from farming operations, before they reach and contaminate lakes, streams, and rivers. Wetlands have also been used to treat municipal sewage.

Wetlands act as groundwater recharge zones in some places where the water table is high. They serve to moderate the physical effects of waves and storms on shorelines, and to moderate climate.⁷

There have been a number of state and federal approaches to regulating wetlands.⁸ The primary federal mechanism for regulating harmful impacts on wetlands values is § 404 of the Federal Water Pollution Control Act.⁹

The regulatory apparatus necessary for wetlands regulation under the Act, however, has been slow in development. There has been a reluctance on the part of regulatory agencies to include wetlands within the jurisdictional scope of the Act. There has also been a reluctance to include within the scope of the Act numerous

and Death of the Salt Marsh (1969).

⁷See, e.g., Greeson, Clark & Clark, *Wetlands Functions and Values: The State of Our Understanding*, Proceedings of a Symposium, American Water Resources Association, Lake Buena Vista, Fla. (1979); Council on Environmental Quality, *Our Nation's Wetlands: An Interagency Task Force Report*, 19-29 (1978); see also 33 C.F.R. § 230.4(1); 40 C.F.R. § 230; Note, Putting Wetlands to Work, 3 Nat'l Sci. Found. Mosaic 8 (1977); Valuing the Southern Bottomland Hardwoods, *Nature Conservancy News* 25, 26 (1981).

⁸The federal government has programs for the acquisition and preservation of lands, including wetlands, programs regulating activities on federal lands, programs regulating discharges of pollutants into waters, including wetlands, programs involving federal aid for construction on or adjacent to wetlands, and special coastal zone management requirements. See generally J.K. Sailor, *List of Federal Laws Applying to Wetlands*, rev'd July 10, 1979; Council on Environmental Quality, *Our Nation's Wetlands: An Interagency Task Force Report*, 61-63 (1978). The requirements of (NEPA), 42 U.S.C.A. § 4321, and the Fish and Wildlife Coordination Act, 16 U.S.C.A. § 2901, also affect activities in some wetlands.

State wetlands laws utilize diverse definitional and regulatory devices. New York, for example, distinguishes tidal and freshwater wetlands and wetlands larger and smaller than 12.4 acres in size. N.Y. Envtl. Conserv. Law Articles 24, 25. To date, only two states (Michigan and New Jersey) have been delegated responsibility for the regulation of discharges of dredged or fill materials into wetlands pursuant to 33 U.S.C.A. § 1344. See 33 U.S.C.A. § 1344(i) and 40 C.F.R. Part 233 (state program regulations). See also Greenwalt, *A Federal Agency Perspective*, *The Nature Conservancy News* 18 (1981) (description of joint federal and private effort to preserve wetlands).

⁹33 U.S.C.A. §§ 1251 *et seq.* The Act was initially codified in 1972 as the Federal Water Pollution Control Act Amendments. In 1977, it was amended and entitled the Clean Water Act. Further amendments occurred in 1978 and 1981.

types of activities that particularly affect wetlands. A perception also persists on the part of the public that citizen remedies under the Act are limited with regard to certain activities in wetlands.

The reasons for these hesitations are many. They arise from the internal structure of the Act, which on its face is limited to the discharge of pollutants into “navigable waters,”¹⁰ from the relationship between the EPA and the Corps, which, as a result of an unusual legislative compromise, jointly administer and enforce the Act’s dredge and fill program,¹¹ and from a perception that wetlands regulation crosses the line from traditional notions of federal regulation of navigation into the realm of land-use regulation. In recent years, however, greater attention has been directed to establishing policies and procedures to control the loss of wetlands.¹²

§ 13:94 History—The nature of the regulated system

A wetland is a transition zone between two ecotypes: dry land and open water. As such, it takes on some of the characteristics of each, in addition to its own unique characteristics. It also performs some of the functions commonly attributed to each. In fact, at various points in time a wetland may be more like the land or the open water than a wetland. Some wetlands change cyclically on a moisture gradient as a result of tidal action, rainfall, or other regular, predictable climatic fluctuations. These are called seasonal or intermittent wetlands, even though they are actually wetlands the whole year round.¹ Other wetlands change in a unidirectional mode, through a continuous process of creation or destruction. Natural processes involved in creating or destroying wetlands include erosion, siltation, growth and succession of vegetation, and migration of streamflows or barrier inlands. Catastrophic events like storms or floods can trigger creation or destruction of wetlands by altering stream courses and breaching barriers or dikes. Obviously, such natural actions can be augmented or retarded by the actions of humans and other animals.²

Because of their dynamic qualities and diverse functions, wetlands have been defined in many ways. Definitions are typically tailored to, and focus on, the wetland characteristic of interest to the person writing the definition. The most comprehensive definition is an ecological one, which would describe wetlands in terms of the populations and communities of plants and animals that interact within the wetland’s unique physical parameters. In wetlands, moisture is a primary limiting factor for living things. It significantly affects species distribution. Therefore, it affects all biological interactions.

Other definitions are more limited in scope because they delimit the workable

¹⁰33 U.S.C.A. § 1311 (a).

¹¹33 U.S.C.A. § 1344(a), (b), (c), (n), (s). *See, e.g.*, G. Power, *The Fox in the Chicken Coop: The Regulatory Program of the U.S. Army Corps of Engineers*, 63 Va. L. Rev. 503 (1977).

¹²*See, e.g.*, Press Release, White House Fact Sheet: President Announces Wetlands Initiative on Earth Day (April 22, 2004) (announcing a policy to move beyond “no net loss” to have an annual increase in wetlands); 73 Fed. Reg. 19594 (April 10, 2008); National Wetlands Policy Forum, *Protecting America’s Wetlands: An Action Agenda* (1988); Remarks of President G.H.W. Bush, Sixth Int’l Waterfowl Symposium (June 8, 1989), *reprinted in* 25 Weekly Comp. Pres. Doc. 860 (June 12, 1989); Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines, 55 Fed. Reg. 9210 (Mar. 12, 1990); North American Wetlands Conservation Act, Pub. L. No. 101-233, 103 Stat. 1968 (1989).

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¹Some wetlands dry out completely for some period of time each year. The “vernal pools” that occur on the mesa of San Diego County, California, are an example. The name literally means spring pools. *See, e.g.*, *United States v. Eastgate Miramar Assoc.*, Civ. No. 80-0756-E(M) (C.D. Cal. 1980).

²*See, e.g.*, E. Odum, *Fundamentals of Ecology* 35 (3d ed. 1971) (discussion of the concept of man as a “mighty geological agent”).

concept appropriate for the author's purpose.³

For purposes of the Clean Water Act, EPA and the Corps define wetlands as:

[T]hose areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.⁴

The definition is premised on a complicated interaction scheme involving three dominant observable or quantifiable factors: soil, vegetation, and hydrological regime.⁵ This definition is distinguishable from the ecological definition because it is designed not to facilitate an understanding of the system, but rather to provide a practical means of delimiting it for regulatory purposes.

Despite the practical need for limiting regulatory definitions, such definitions must be premised on a realistic understanding of the system. Otherwise, the regulation will be inappropriately over- or under-inclusive and incapable of achieving the goals of the statute. The Clean Water Act definition is generally consistent with the basic ecological premise that the moisture gradient controls and limits the composition of wetland communities. It is consistent with the premise that wetlands are complex, relatively stable biological systems.⁶

By its very nature, a wetland community is not static.⁷ Because it is composed of living things which change, grow, and senesce with time, and because those living things interact in complex, interdependent webs, wetland systems are dynamic. A system characterized by constant change has no *status quo*.⁸

³The U.S. Fish and Wildlife Service describes wetlands, in general terms, as:

land where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. The single feature that most wetlands share is soil or substrate that is at least periodically saturated with or covered by water. The water creates severe physiological problems for all plants and animals except those that are adapted for life in water or in saturated soil.

L. Cowardin, v. Carter, F. Golet & E. LaRoe, Classification of Wetland and Deepwater Habitats of the United States, Office of Biological Services, U.S. Fish and Wildlife Service 3 (Dec. 1979).

⁴33 C.F.R. § 328.3(b); 40 C.F.R. § 232.2(r).

⁵See, e.g., Avoyelles Sportsmen's League, Inc. v. Marsh, 715 F.2d 897, 918 n.35, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20942, 20952 n.35 (5th Cir. 1983).

⁶It is an often cited adage in ecological literature that complexity increases stability and efficiency. Stability is a dynamic concept. Therefore, the dynamic nature and potential stability of wetlands are key concepts for purposes of designing appropriate and effective regulatory devices. See generally W. Keeton, Biological Science 670-71 (2d ed. 1972); R. Ricklefs, Ecology (1973).

⁷The community is an association of interacting populations. A population is an association of interacting organisms of the same type in a certain location.

⁸A biological community may be an equilibrium or nonequilibrium system. A nonequilibrium system may be approaching equilibrium, moving away from equilibrium, or simply fluctuating in response to environmental inputs. An equilibrium system is one in which the rate of change in numbers of its component parts at a given point in time is zero. However, because biological systems do not usually occur in a totally constant environment, perturbations to the system occur. For example, a northern rocky intertidal zone may experience severe ice scouring every several years, which selectively destroys snails, algae, and other members of the community that live on the rock surface. If the system has restoring forces or feedback mechanisms that allow it to recover from such perturbations, it is said to be stable. The more complex the web of interactions, the higher the likelihood of feedback mechanisms, the more stable the community is likely to be.

Such stability can sometimes be determined by artificially disturbing the system. If the time scale recovery is fast enough, the recovery can be measured. An unstable community is one that lacks sufficient feedback mechanisms. When disturbed, it will depart from equilibrium and may either approach another equilibrium or fluctuate subject to further environmental disturbances.

Presently, there is a great need for replicable studies on the degree to which severely disturbed wetlands are restorable. See, e.g., United States v. Eastgate Miramar Assocs., Civ. No. 80-0756-E(M)

The concept of constant change is important for wetlands regulation. Rather than stopping change, effective regulation must seek to allow the natural system room to change at its own pace. The focus should be on developing a decision-making capacity that evaluates the effects of proposed human activities on the natural cycle and selects those that do not exceed the system's own restoring forces.

§ 13:95 History—The Clean Water Act's regulatory choices in historical perspective

In 1972, Congress enacted the Federal Water Pollution Control Act with the objective of restoring and maintaining the chemical physical and biological integrity of the nation's waters.¹ Section 301(a) of the Act prohibits the discharge of any pollutant into navigable waters unless it is made in compliance with specified provisions of the Act including, among others, §§ 402 and 404.²

At the heart of this program are two separate permitting systems for discharges of pollutants. Effluent dischargers are subject principally to technology-based effluent limitations and water quality standards under the NPDES permitting program. Elimination of pollutants from an effluent stream involves use of increasingly efficient technologies.³ Discharges of dredged or fill materials are regulated under requiring the § 404 program that is the assessment of degradation of the receiving waters.⁴

The 404 program incorporates the water quality standards for discharges of dredged and fill materials.⁵ The permitting decision process is imbued with considerations of the existing quality of the receiving water.⁶

The Act's approach to regulating discharges of pollutants to wetlands theoretically rejects numerous other regulatory devices that could have advanced the Act's overall objective. For example, the Act is neither a safe drinking water statute⁷ nor an express watershed protection statute. It is not a preservationist statute in the nature of parks or wilderness areas nor is it an endangered species habitat protector.⁸ It is not a facilities siting statute⁹ nor expressly a "wetlands protection statute."¹⁰

Nevertheless, the Act's stated objective, its legislative history, and smaller provisions tucked within the overall scheme have made it clear that the system facially limited to discharges of pollutants into navigable waters is really imbued with elements from all of the above.

For example, the legislative history makes it clear that wetlands, which are not

(C.D. Cal. 1980) (consent decree provided that defendant would fund an experimental field study on restorability of vernal pools after severe disturbance); National Research Council, *Compensating for Wetland Losses under the Clean Water Act* 40 (2008) (recognizing that there are very few long-term studies of the ecological performance of restored and created wetlands).

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¹33 U.S.C.A. § 1251.

²CWA § 301(a), 33 U.S.C.A. § 1311(a); CWA §§ 402, 404, 33 U.S.C.A. §§ 1342, 1344.

³See 33 U.S.C.A. §§ 1311(b), 1342. The Act created a two phased program for applying effluent limits. The first applied "best practicable technology." The second is based on "best available technology economically achievable."

⁴See 33 U.S.C.A. §§ 1343(c), 1344(b).

⁵See CWA §§ 403(b), 404(b), 33 U.S.C.A. §§ 1343(b), 1344(b).

⁶Section 404(b)(1) Guidelines are codified at 40 C.F.R. Part 230; key definitions are in 40 C.F.R. Part 232.

⁷See Safe Drinking Water Act, 42 U.S.C.A. §§ 300f to 300j-26.

⁸See Endangered Species Act, 16 U.S.C.A. § 1531.

⁹See *e.g.*, 42 U.S.C.A. § 4321 (alternatives analysis required by NEPA).

¹⁰44 Fed. Reg. 54222, 54226 (1979).

mentioned on the face of the Act, are part and parcel of the plan to control pollution at its source.¹¹ The effects of dredged and fill discharges on drinking water supplies, fisheries, wildlife areas, and shellfish beds are permissibly considered under § 404(c).¹² The availability of alternative siting options is an input for decision makers pursuant to § 404(b) and its implementing regulations.¹³

Because of the Act's facial limitations, a thick administrative and judicial gloss developed with significant consequences for effective wetlands regulation under the Act.

§ 13:96 Jurisdiction of § 404—Waters of the United States

The regulatory programs of the Clean Water Act apply to discharges into the navigable waters. Section 502(7) of the Act defines navigable waters as all "waters of the United States" including the territorial seas.¹ The term "wetland" is not used on the face of the Act. Instead, it is incorporated into the regulators' definition of "waters of the United States."²

Inclusion of wetlands within the scope of the Act was not automatic. Until July 1983, the Corps' regulations implementing § 404³ limited the scope of the program to those waters that had traditionally been regulated under § 10 of the Rivers and Harbors Act of 1899 (RHA).⁴ The Corps regulated only waters that were navigable in fact, had been historically navigable, or would be susceptible to navigation with reasonable improvement.⁵ Although some salt water wetlands were "historically navigable," most wetlands, including almost all fresh water wetlands, were beyond the scope of the definition.⁶

At the same time, EPA had regulations on the books that defined "navigable

¹¹2 Environmental Policy Division, Congressional Research Service; A Legislative History of the Water Pollution Control Act Amendments of 1972, 93d Cong., 1st Sess. 1495 (Comm. Print. 1978). See also *United States v. Byrd*, 609 F.2d 1204, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20757 (7th Cir. 1979); *Avoyelles Sportsmen's League, Inc. v. Marsh*, 715 F.2d 897, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20942 (5th Cir. 1983); *United States v. Pozsgai*, 999 F.2d 719, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 21012 (3d Cir. 1993) (CWA § 502(6), which defines "pollutant" as certain materials "discharged into water," applies to materials discharged into wetlands.).

¹²At 33 U.S.C.A. § 1344(c), the Clean Water Act provides:

The Administrator is authorized to prohibit the specification . . . of any defined area as a disposal site . . . , whenever he determines, after notice and opportunity for public hearings, that the discharge of such materials . . . will have an unacceptable adverse effect on *municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreation areas.* (emphasis added).

¹³In the preamble to the final § 404(b)(1) Guidelines, EPA stated:

Section 403(c) already requires that alternatives be considered, and provides the basic legal bases for our requirement. While the statutory provision leaves the Agency some discretion to decide *how* alternatives are to be considered, we believe that the policies and goals of the Act, as well as the other authorities cited in the Preamble to the Proposed Guidelines, would be best served by the approach we have taken.

45 Fed. Reg. 85336, 85339 (1980) (emphasis in original). See also 45 Fed. Reg. 85348; 33 C.F.R. § 230.0(a).

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¹33 U.S.C.A. § 1362(7).

²*E.g.*, 40 C.F.R. § 232.2(q), (r).

³33 U.S.C.A. § 1344.

⁴39 Fed. Reg. 6113 (1974).

⁵39 Fed. Reg. 6113 (1974).

⁶See, *e.g.*, *United States v. Holland*, 373 F. Supp. 665, 4 Env'tl. L. Rep. (Env'tl. L. Inst.) 20710 (M.D. Fla. 1974) (areas inundated by tidal action fifty to one hundred times a year are "navigable"); *United States v. Ashland Oil & Transp. Co.*, 364 F. Supp. 349, 4 Env'tl. L. Rep. (Env'tl. L. Inst.) 20185 (W.D. Ky. 1973), *aff'd on other grounds* 504 F.2d 1317, 4 Env'tl. L. Rep. (Env'tl. L. Inst.) 20784 (6th Cir. 1974).

waters” for purposes of § 402 (all other pollutant discharges) more broadly than the Corps.⁷

In *Natural Resources Defense Council, Inc. v. Calloway*, the District Court for the District of Columbia invalidated the Corps’ definition.⁸ The court held that Congress had not intended to restrict the scope of § 404 to the RHA limits, but instead had intended to exert jurisdiction over the nation’s waters to the maximum extent permissible under the Commerce Clause of the Constitution.⁹

On May 6, 1975, the Corps issued proposed regulations designed to cure the deficiencies found by the court in *Calloway*.¹⁰ The Corps proposal offered four alternatives utilizing two different definitions of navigable waters. Neither definition mentioned wetlands directly. Instead, both proposed definitions that enumerated the types of water bodies that could be included under the Act. They delimited the actual extent of jurisdiction by reference to a specified high water mark or to an “aquatic” (alternatives 1 and 3) or “salt water” (alternatives 2 and 4) vegetation line.¹¹

After digesting over 4,500 comments in response to its request for public comment,¹² the Corps issued interim final regulations on July 25, 1978.¹³ These regulations contained a new definition of navigable waters, which included wetlands. They defined navigable waters as:

[W]aters of the U.S. including the territorial seas with respect to the disposal of fill material and excluding the territorial seas with respect to the disposal of dredged material and shall include the following waters:

- (a) Coastal waters that are navigable . . . ;
- (b) All *coastal wetlands, mudflats, swamps* and similar areas that are contiguous or adjacent to other navigable waters. “*Coastal wetlands*” includes marshes and shallows

⁷38 Fed. Reg. 13529 (1983); 40 C.F.R. § 122.21. EPA did not deem this list exhaustive. 2 Decisions of the Administrator and Decisions of the General Counsel, 319, 322 (OGC Decision No. 53, Dec. 17, 1976).

⁸*Nat. Res. Def. Council, Inc. v. Calloway*, 392 F. Supp. 685, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20285 (D.D.C. 1975).

⁹See also 1 Environmental Policy Division, Congressional Research Service; A Legislative History of the Water Pollution Control Act Amendments of 1972, 93d Cong., 1st Sess. 1495 at 32 (Conference Report); 1 Environmental Policy Division, Congressional Research Service; A Legislative History of the Water Pollution Control Act Amendments of 1972, 93d Cong., 1st Sess. 1495 at 818 (House Report); 1 Environmental Policy Division, Congressional Research Service; A Legislative History of the Water Pollution Control Act Amendments of 1972, 93d Cong., 1st Sess. 1495 at 178 (remarks of Sen. Muskie). Subsequent cases continue to affirm Congress’s intent that the term “waters of the United States” reaches to the fullest extent permissible under the Commerce Clause of the Constitution. See, e.g., *United States v. Ashland Oil & Transp. Co.*, 504 F.2d 1317, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20784 (5th Cir. 1979); *Leslie Salt Co. v. Froehlke*, 578 F.2d 742, 754-55, 8 Env’tl. L. Rep. (Env’tl. L. Inst.) 20480, 20486 (9th Cir. 1978); *California v. EPA*, 511 F.2d 963, 964, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20213 (9th Cir. 1975), rev’d 426 U.S. 200 (1976); *Puerto Rico v. Alexander*, 438 F. Supp. 90, 95, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20751, 20753 (D.D.C. 1977); *Wyoming v. Hoffman*, 437 F. Supp. 114, 8 Env’tl. L. Rep. (Env’tl. L. Inst.) 20001 (D. Wyo. 1977); *United States v. Byrd*, 609 F.2d 1204, 9 Env’tl. L. Rep. (Env’tl. L. Inst.) 20757 (7th Cir. 1979); see also *United States v. Riverside Bayview Homes*, 474 U.S. 121, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20086 (1985); *McClellan Ecological Seepage Situation (MESS) v. Weinberger*, 707 F. Supp. 1182, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20124 (E.D. Cal. 1988), *judgment vacated*, 47 F.3d 325 (9th Cir. 1995); *United States v. Pozsgai*, 999 F.2d 719, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 21012 (3d Cir. 1993); *Utah v. Marsh*, 740 F.2d 799, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20683 (10th Cir. 1984); *Texas Mun. Power Agency v. Administrator*, 836 F.2d 1482, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20538 (5th Cir. 1988).

¹⁰40 Fed. Reg. 19766 (1975).

¹¹40 Fed. Reg. 19766, 19770–76 (1975).

¹²40 Fed. Reg. 31320 (1975).

¹³40 Fed. Reg. 31320, 31322 (1975); 33 C.F.R. § 209.120 (as amended, 41 Fed. Reg. 55524 (1976)).

and means those areas periodically inundated by saline or brackish waters and that are normally characterized by the prevalence of salt or brackish water vegetation capable of growth and reproduction; . . .

(i) *Freshwater wetlands* including marshes, shallows, swamps and similar areas that are contiguous or adjacent to other navigable waters and that support freshwater vegetation. “Freshwater Wetlands” means those areas that are periodically inundated and that are normally characterized by the prevalence of vegetation that requires saturated soil conditions for growth and reproduction; and

(ii) Those other waters which the District Engineer determines necessitated regulation for the protection of water quality as expressed in the guidelines (40 C.F.R. 230). For example, in the case of intermittent rivers, streams, tributaries and *perched wetlands that are not contiguous or adjacent to navigable waters* identified in paragraphs (a)–(h), a decision or jurisdiction shall be made by the district engineer.¹⁴

For the first time, the definition of navigable waters under the Act referenced and included wetlands. Coastal and freshwater wetlands were clearly included when they were adjacent to or contiguous with other waters of the United States. In addition, the express provision for inclusion of perched or nonadjacent wetlands opened the door for more intensive scrutiny of the multiple roles served by wetlands vis-à-vis water quality.¹⁵

Late in September 1975, EPA issued environmental guidelines for dredge and fill discharges pursuant to § 404(b).¹⁶ These guidelines incorporated by reference the Corps’ then extant definition of navigable waters.¹⁷ In 1977, the Corps issued new regulations that made certain changes in the 1975 definition and which eliminated the distinction between coastal and freshwater wetlands.¹⁸ On June 7, 1979, EPA issued revised regulations to implement the § 402 permitting program and specifying the requirements for state § 404 programs.¹⁹ These contained a new definition of navigable waters, which also included wetlands. In the May 1980 Consolidated Permit Regulations and the December 1980 § 404(b)(1) Guidelines, a more refined EPA definition of navigable waters appeared.²⁰ One and a half years later, in July 1981, the Corps adopted EPA’s wording in its own definition of waters of the United States.²¹ Both agencies presently define navigable waters as:

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

¹⁴40 Fed. Reg. 31324 (1975). For a discussion of the wetlands definition, see § 13:97.

¹⁵*See generally* § 13:95; *see also* *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121 (1985), 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20086 (1985) (isolated wetlands are within the scope of the CWA’s jurisdiction); *United States v. Akers*, 651 F. Supp. 320, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20702 (E.D. Cal. 1987) (wetlands created by manmade inundation covered by § 404); *United States v. Fabian*, 522 F. Supp. 2d 1078, 37 Env’tl. L. Rep. (Env’tl. L. Inst.) 20083 (N.D. Ind. 2007) (CWA governs isolated wetlands when the lands show characteristics of wetland soil and vegetation). But see discussion regarding *Rapanos v. United States*, 547 U.S. 715, 36 Env’tl. L. Rep. (Env’tl. L. Inst.) 20116 (2006), later in this section.

¹⁶40 Fed. Reg. 41291 (1975); 40 C.F.R. Part 230 (1975). *See* § 13:108. (discussion of Guidelines).

¹⁷40 Fed. Reg. 41291 (1975); 40 C.F.R. Part 230 (1975). *See* § 13:108. (discussion of Guidelines).

¹⁸42 Fed. Reg. 37125 (1977).

¹⁹44 Fed. Reg. 32854 (1979).

²⁰Consolidated Permit Regulations, 45 Fed. Reg. 33290 (1980); Guidelines, 45 Fed. Reg. 85336, 85346; 40 C.F.R. § 230. On April 1, 1983, the EPA’s Consolidated Permit Regulations were “de-consolidated.” 48 Fed. Reg. 14146 (1983). On June 6, 1988, EPA published a final rule essentially recodifying existing 404 program definitions. 53 Fed. Reg. 20764, 20773 (1988) (codified at 40 C.F.R. § 232.2).

²¹47 Fed. Reg. 31744, 31810 (1982).

- (2) All interstate waters including interstate wetlands;
- (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
 - (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
 - (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - (iii) Which are used or could be used for industrial purpose by industries in interstate commerce;
- (4) All impoundments of waters otherwise defined as waters of the United States under the definition;
- (5) Tributaries of waters identified in paragraphs (a)(1) through (4) of this section;
- (6) The territorial seas;
- (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1) through (6) of this section.²²

EPA and the Corps currently define wetlands as:

those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.²³

In the 1988 preamble to its revised definitions,²⁴ EPA adopted as its own a discussion contained in the Corps' 1986 regulatory preamble,²⁵ which provides examples of "waters of the United States" that are within the regulatory program.²⁶

²²33 C.F.R. § 328.3(a); 40 C.F.R. § 232.2. The implausibility of having two different regulatory definitions for the same statutory term was not squarely addressed until June 5, 1979, when Attorney General Civiletti opined that the Administrator of EPA has the ultimate administrative authority to determine "waters of the U.S." for all purposes under the Act. 43 Op. Atty. Gen. 15 (1979). *See also* Crawford v. EPA, No. 76-M-1148 (D. Col. 1979) (Matsch, J., ruling from the bench).

In 1977, the Act was amended without revision or modification of the statutory definition of "navigable waters." The legislative history contains numerous references to wetlands. *See, e.g.*, 3 Environmental Policy Division, Congressional Research Service; A Legislative History of the Water Pollution Control Act Amendments of 1972, 93d Cong., 1st Sess. 1495 at 417, 484, 494, 523 (Comm. Print 1978) (statements of Representative Dingell and Senators Stafford, Randolph, and Baker). Therefore, one can conclude that Congress endorsed the *Calloway* court's view of intended jurisdiction.

²³40 C.F.R. § 232.2; 33 C.F.R. § 328.3(b).

²⁴53 Fed. Reg. 20764, 20765 (1988).

²⁵51 Fed. Reg. 41206, 41217 (1986).

²⁶"Waters of the United States" typically include the following waters:

- Which are or would be used as habitat by birds protected by Migratory Bird Treaties; or
- Which are or would be used as habitat by other migratory birds which cross State lines; or
- Which are or would be used as habitat for endangered species; or
- Used to irrigate crops sold in interstate commerce.
- For clarification it should be noted that we generally do not consider the following waters to be "waters of the United States." However, EPA reserves the right on a case-by-case basis to determine that a particular water body within these categories of waters is a water of the United States. Pursuant to agreements with EPA, the permitting authority also has the right to determine on a case-by-case basis if any of these waters are "waters of the United States."
- Non-tidal drainage and irrigation ditches excavated on dry land.
- Artificially irrigated areas which would revert to upland if the irrigation ceased.
- Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing.
- Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons.

Despite the inclusion of wetlands within the scope of the § 404 program by July 1975, some wetlands did not become regulatable entities until July 19, 1977, five years after the Act's passage.²⁷ When it produced the new definition of "navigable waters," the Corps designated the various water body types as phase I, II, or III. Dates were assigned on which each group would be "phased in" for regulatory purposes.²⁸ Activities that occurred prior to the phase in date were "grandfathered" for purposes of subsequent § 404 permitting and enforcement.²⁹

On July 25, 1975, the regulations regarding discharges of fill materials became immediately effective for coastal waters and their adjacent wetlands, as well as for those inland waters already under Corps jurisdiction and their adjacent wetlands. On July 1, 1976, discharges of dredged and fill materials into all phase I waters became regulated, in addition to discharges into primary tributaries, their adjacent wetlands, and lakes. Discharges into all other waters, including all other wetlands, became regulated after July 1, 1977.³⁰ The terms phase I, II, and III waters technically became obsolete for all new discharges after July 1, 1977.

As noted above, the federal courts have consistently held that Congress intended that the term "waters of the United States" reach to the fullest extent possible under the Commerce Clause. In *Hoffman Homes, Inc. v. EPA*,³¹ for example, EPA assumed jurisdiction over an isolated, intrastate wetlands area of less than one acre on a claim that migratory birds could potentially use the area on an occasional basis. The wetlands had no connection to other aquatic ecosystems. The court held that, since millions of people throughout North America spend more than a billion dollars per year on hunting, trapping, and observing migratory birds, activities affecting any wetlands potentially used by such birds also affect interstate commerce.

The court went on to hold, however, that EPA must offer evidence that a wetland truly has the potential to be used by migratory birds before assuming CWA jurisdiction over it. EPA had presented no testimony that birds had been seen at the site, or that the site was similar to other sites used by migratory birds. There was, in fact, substantial evidence that the wetlands in question were unsuitable for migratory birds. Stating that "migratory birds are better judges of what is suitable for their welfare than are we," the court vacated the administrative penalty assessed against the defendant for having filled the wetlands.

However, in recent years, the Supreme Court has scrutinized the phrase "waters of the United States" to establish limitations. In *Solid Waste Agency of Northern Cook County (SWANCC) v. United States Army Corps of Engineers*,³² the Supreme Court held that the Corps incorrectly interpreted the Clean Water Act as permitting it to have jurisdiction over intrastate waters based on the presence of migratory birds. The Court decision prohibits federal agencies from claiming jurisdiction over non-navigable intrastate waters that are not adjacent to a navigable waterway. As a result of the decision, many states have begun to evaluate and institute protections

● Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States.

53 Fed. Reg. 20764, 20765 (1988).

²⁷42 Fed. Reg. 37122 (1977).

²⁸42 Fed. Reg. 37122, 37125-28 (1977).

²⁹42 Fed. Reg. 37122, 37125 (1977).

³⁰42 Fed. Reg. 37122, 37128-29 (1977).

³¹*Hoffman Homes, Inc. v. EPA*, 999 F.2d 256, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 21139 (7th Cir. 1993).

³²*Solid Waste Agency of Northern Cook Cty. (SWANCC) v. U.S. Army Corps of Eng'rs*, 531 U.S. 159, 121 S. Ct. 675, 31 Env'tl. L. Rep. (Env'tl. L. Inst.) 20382 (2001).

for isolated bodies of water.³³ In addition, the Department of Justice has begun urging federal courts to adopt a narrow interpretation of the decision by arguing for broad interpretation of the term “adjacent.” The Department of Justice has argued that wetlands that are “hydrologically connected” to navigable waters should remain under federal jurisdiction.³⁴

In *United States v. Riverside Bayview Homes*,³⁵ the Supreme Court upheld the Corps’ jurisdiction over wetlands adjacent to waters of the United States. The Supreme Court concluded that the Corps has jurisdiction over all adjacent wetlands, even those without a significant hydrological connection to the adjacent waters.

In *Rapanos v. United States*,³⁶ a plurality of the Supreme Court held that the Corps did not have jurisdiction under § 404 to require property owners to acquire permits before dredging and filling certain wetlands. To determine whether § 404 extends to certain wetlands, Justice Scalia, writing for the plurality, proposed a two-prong test. Under Scalia’s test, wetlands are governed by § 404 if the court finds that (1) the adjacent channel contains a “water of the United States,” and (2) “the wetland has a continuous surface connection with that water, making it difficult to determine where the ‘water’ ends and the ‘wetland’ begins.”

Justice Kennedy, in his concurrence, explicitly rejected Scalia’s test as inconsistent with the purpose of the Clean Water Act and instead proposed a “significant nexus” test. Under Kennedy’s test, “[w]etlands possess the requisite nexus . . . if the wetlands, either alone or in combination with similarly situated lands in the region, significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as ‘navigable.’ ” However, there is no jurisdiction over the land if its “effects on water quality are speculative or insubstantial.”

The dissent, emphasizing the ecological and hydrological nexus between the wetlands and “navigable waters,” opined that *United States v. Riverside Bayview*³⁷ should control the outcome and that § 404 governs the wetlands at issue because the wetlands are tributaries of navigable waters.

The EPA and the Corps issued a joint guidance on the scope of the Clean Water Act in June 2007 and issued a revised guidance in December 2008. The agencies’ position is that, in a case with no majority opinion, the controlling legal principle can be derived from principles adopted by five or more justices. Thus, a water body falls within § 404 jurisdiction if it satisfies the standard of either Scalia’s two-prong test or Kennedy’s significant nexus test.³⁸ However, most courts that have considered the

³³There were 26 states that defined wetlands to include areas that since the SWANCC decision are outside the jurisdiction of the Corps. However, only 15 of these states regulated dredging and filling in isolated wetlands; and of these 15 states, most had exemptions from the permitting requirements based on such criteria as size of the wetland, type of wetland, and/or activity performed on the wetland (such as agriculture).

³⁴The Department of Justice has filed amicus briefs arguing that the SWANCC decision does not bar other bases for federal jurisdiction over non-navigable intrastate waters. *See* *FD&P Enters., Inc. v. Army Corps of Eng’rs*, No. 99-3500 (D.N.J. May 30, 2001); *Rice v. Harken Exploration Co.*, 250 F.3d 264, 31 Env’tl. L. Rep. (Env’tl. L. Inst.) 20599 (5th Cir. 2001); and *San Francisco Baykeeper v. Cargill Salt Div.*, 263 F.3d 963 (9th Cir. 2001).

³⁵*United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121, 106 S. Ct. 455, 88 L. Ed. 2d 419, 23 Env’t Rep. Cas. (BNA) 1561, 16 Env’tl. L. Rep. 20086 (1985).

³⁶*Rapanos v. United States*, 547 U.S. 715, 36 Env’tl. L. Rep. (Env’tl. L. Inst.) 20116 (2006).

³⁷*United States v. Riverside Bayview Homes*, 474 U.S. 121, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20086 (1985). *See also* § 13:96, note 15.

³⁸Clean Water Act Jurisdiction Following the U.S. Supreme Court’s Decision in *Rapanos v. United States* and *Carabell v. United States*, http://water.epa.gov/lawsregs/guidance/wetlands/upload/2008_12_3_wetlands_CWA_Jurisdiction_Following_Rapanos120208.pdf.

issue since *Rapanos* either considered both tests³⁹ or considered solely Kennedy's "significant nexus" test.⁴⁰

On April 21, 2014, the EPA and the Corps jointly issued a proposed rule to clarify jurisdiction over streams and wetlands under the Clean Water Act.⁴¹ And, in June 2015, EPA published the final Clean Water Rule.⁴² Later that year, the U.S. Court of Appeals for the Sixth Circuit issued a nationwide stay of the rule, leaving the existing regulatory system and definitions in place.⁴³ After issuing the stay, the Sixth Circuit ruled that it had jurisdiction under the CWA to directly review challenges to the proposed Clean Water Rule.⁴⁴ The United States Supreme Court reversed and remanded, holding that challenges to the Clean Water Rule must be brought in the federal district courts.⁴⁵

³⁹See, e.g., *United States v. Gerke Excavating, Inc.*, 464 F.3d 723, 63 Env't Rep. Cas. (BNA) 1351, 36 Env'tl. L. Rep. 20200 (7th Cir. 2006); *Env'tl. Prot. Info. Ctr. v. Pacific Lumber Co.*, 469 F. Supp. 2d 803, 64 Env't Rep. Cas. (BNA) 1880 (N.D. Cal. 2007); *United States v. Pozsgai*, No. 88-6545 (E.D. Pa. Mar. 8, 2007).

⁴⁰See, e.g., *United States v. Johnson*, 467 F.3d 56, 36 Env'tl. L. Rep. 20218, 162 O.G.R. 1289 (1st Cir. 2006); *Simsbury-Avon Preservation Soc., LLC v. Metacon Gun Club, Inc.*, 472 F. Supp. 2d 219, 64 Env't Rep. Cas. (BNA) 2081 (D. Conn. 2007), *aff'd on other grounds*, 575 F.3d 199, 69 Env't Rep. Cas. (BNA) 1187 (2d Cir. 2009); *United States v. Cundiff*, 480 F. Supp. 2d 940, 65 Env't Rep. Cas. (BNA) 1346 (W.D. Ky. 2007), *aff'd*, 555 F.3d 200, 68 Env't Rep. Cas. (BNA) 1289 (6th Cir. 2009); and *United States v. Bailey*, 516 F. Supp. 2d 998 (D. Minn. 2007), *aff'd*, 571 F.3d 791, 69 Env't Rep. Cas. (BNA) 1135 (8th Cir. 2009); *N. Cal. River Watch v. City of Healdsburg*, 496 F.3d 993, 64 Env't Rep. Cas. (BNA) 2097 (9th Cir. 2007); *Precon Dev. Corp. v. U.S. Army Corps of Eng'rs*, 603 F. App'x 149, 80 ERC 1468 (4th Cir. Mar. 10, 2014); *United States v. Robertson*, No. CR 15-07-H-DWM, 2015 WL 7720480 (D. Mont. Nov. 30, 2015).

⁴¹Definition of "Waters of the United States" under the Clean Water Act, 79 Fed. Reg. 76,22188 (April 21, 2014) (to be codified at 40 C.F.R. § 110, 112, 116), <http://www2.epa.gov/sites/production/files/2014-04/documents/fr-2014-07142.pdf>.

⁴²Clean Water Rule: Definition of "Waters of the United States," 80 Fed. Reg. 37054 (June 29, 2015) (to be codified 33 C.F.R. Pt. 328, 40 C.F.R. Pts. 110, 112, 116, 117, 122, 230, 232, 300, 302, 401).

⁴³In re EPA and Department of Defense Final Clean Water Rule: Definition of "Waters of the United States," 80 Fed. Reg. 37054 (June 29, 2015), 803 F.3d 804 (6th Cir. Oct. 9, 2015) (finding that the petitions demonstrated a substantial possibility of success on the merits). The final rule defines "waters of the United States" as

All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters of which were subject to ebb and flow of the tide; (2) All interstate waters, including interstate wetlands; (3) the territorial seas; (4) All impoundments of waters otherwise identified as waters of the United States under this section; (5) All tributaries as defined in paragraph (c)(3) . . . (6) All waters adjacent to a water identified in (a)(1)-(5) of this section including wetlands, ponds, lakes, oxbows, impoundments, and similar waters[.]

80 Fed. Reg. 37054, 37104-105.

The definition also includes Prairie Potholes, Carolina and Delmarva Bays, Pocosins, Western Vernal Pools, and Texas Coastal Prairie Wetlands where such waters are determined on a case-specific basis to have a significant nexus to a water identified in (1) through (3) above. *Id.* at 37105. Moreover, under the final rule "waters of the United States" means

[a]ll waters located within the 100-year floodplain of a water identified in (a)(1) through (3) of this section and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in paragraphs (a)(1) through (5) of this section where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs (a)(1) through (3) of this section.

Id.

The final rule clarifies that where waters are adjacent to any waters identified in section (a)(6) of the rule, then the case-specific, significant nexus analysis is not required. *Id.*

⁴⁴In re U.S. Dept. of Defense, U.S. E.P.A. Final Rule: Clean Water Rule: Definition of Waters of U.S., 817 F.3d 261, 81 Env't. Rep. Cas. (BNA) 2165 (6th Cir. 2016), cert. granted, 137 S. Ct. 811, 196 L. Ed. 2d 595 (2017) and rev'd and remanded, 138 S. Ct. 617, 199 L. Ed. 2d 501, 85 Env't. Rep. Cas. (BNA) 2155, 2018 A.M.C. 29 (2018).

⁴⁵National Ass'n of Mfrs. v. Department of Defense, 138 S. Ct. 617, 199 L. Ed. 2d 501, 85 Env't. Rep. Cas. (BNA) 2155, 2018 A.M.C. 29 (2018).

§ 13:97 Jurisdiction of § 404—Application of the wetlands definition— Spatial

The first step in the regulatory process for a potential permit applicant is to ascertain precisely which areas are wetlands within the scope of the Act. Actual boundaries must be established. Under certain circumstances, maps indicating wetlands defined for other purposes may offer guidance, such as the U.S. Fish and Wildlife National Wetlands Inventory¹ and most states have programs that offer maps of wetland areas.² However, because the maps are not designed to reflect wetlands for Clean Water Act purposes, their designations are not determinative.

Delineation of the spatial perimeters of a wetland generally involves a field survey, based initially on the identification of wetland indicator plant species.³ These are species “typically adapted for life in saturated soil conditions.” The field survey first seeks to ascertain the presence or absence of true indicator species and by random sampling, using any of a variety of statistical techniques, (e.g., transects) seeks to ascertain whether the indicator species are the “prevalent” species. Where an area is characterized by a prevalence of species that must live in saturated soil conditions the analysis ends there. Such species are called “obligate hydrophytes.” If, however, the area is characterized not by species that require saturated soil conditions, but which are, nevertheless “typically adapted” for such life, the analysis goes further. In such cases, the applicability of the CWA is determined by assessing the three elements contained in the wetlands definition: vegetation, soils, and hydrology.⁴ Analysis of soil characteristics and hydrology (surface and groundwater movement) ensures that the presence of facultative hydrophytes does not yield a false wetland determination.

In *Avoyelles Sportsmen's League v. Alexander*,⁵ the Fifth Circuit Court of Appeals upheld EPA's use of the definition's three-part test to determine whether certain bottomland hardwood forests in Louisiana were wetlands regulated by the Clean Water Act. There, the Corps had performed the first field survey. Relying solely on the presence of obligate hydrophytes, without an assessment of soil characteristics or inundation patterns, the Corps determined that a small portion of the tract contained regulated wetlands. EPA subsequently reassessed the same tract and, applying an interdisciplinary approach, determined that nearly all of the tract was a regulated wetland. The court rejected the Corps' earlier approach ruling that the term “typically adapted for life in saturated soil conditions” was not limited in scope to vegetation that required constant inundation for survival, and that the agencies could, consistent with the regulatory definition, rely on soil characteristics and inundation patterns to confirm the dimensions of a wetland.⁶

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¹See also L. Cowardin, V. Carter, F. Volet & E. La Roe, *Classification of Wetlands and Deepwater Habitats of the United States*, U.S. Fish and Wildlife Services, Biological Service Program (FWS/OBS-79131, December, 1979).

²See, e.g., N.Y. Env'tl. Conserv. Law §§ 24-0101 to 24-0107 (Freshwater Wetlands Act).

³U.S. Army Corps of Engineers, *Regional Supplements to Corps Delineation Manual*, http://www.usace.army.mil/missions/civilworks/regulatoryprogramandpermits/reg_supp.aspx.

⁴33 C.F.R. § 328.3(b); 40 C.F.R. § 232.2.

⁵*Avoyelles Sportsmen's League, Inc. v. Alexander*, 511 F. Supp. 278, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20321 (W.D. La. 1981), *aff'd in part on other grounds sub nom.* *Avoyelles Sportsmen's League, Inc. v. Marsh*, 715 F.2d 897, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20942 (5th Cir. 1983).

⁶*Avoyelles Sportsmen's League v. Alexander*, 473 F. Supp. 525, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20315 (W.D. La. 1979). As a result of the controversy engendered by this case, Attorney General Civiletti opined in 1979 that EPA had the ultimate administrative authority to determine CWA jurisdiction over waters of the United States for all purposes under the CWA. 43 Op. Atty. Gen. 15 (1979).

**§ 13:98 Jurisdiction of § 404—Application of the wetlands definition—
Temporal**

Wetlands have some characteristics of dry land and some of open water. They often change over time, cyclically (as on an annual wet-dry seasonal cycle), or in an unidimensional mode resulting over time in the creation or destruction of a wetland.¹ For CWA purposes, the question is *when* is an area a regulated wetland.

In the extreme, cyclic (or intermittent) wetlands may have all the characteristics of a wetland in the wet season and none in the dry season. Wetlands that dry out completely in certain seasons are not uncommon. If their predictable cyclic pattern includes a season with a prevalence of wetland vegetation, they are subject to the Act's jurisdiction the whole year long. This applies even if the field survey or the discharge occurs in the dry season. There are two bases for this approach. First, the Act directs that pollution be controlled at its source.² Tributaries to larger water bodies and areas that serve as watersheds serve these purposes even when dry. Consequently, discharges there have implications for water quality. For this reason, discharges into ordinarily dry arroyos, which run with water only during short periods of the year, require permits.³ Similarly, spills of toxic substances into ordinarily dry areas were subject to the (then) § 311 reporting requirements.⁴

Second, certain classes of discharges, such as discharges of dredged or fill materials, have the effect of irrevocably changing the characteristics of a water body. Such changes remove whole classes of waters from the category of waters of the United States, preventing them from serving any of the water resource or water quality functions that the Act seeks to protect.⁵ Therefore, discharges are regulated even if they occur in the dry season.

One of the most extreme cases to date involved unpermitted discharges of fill materials into vernal (spring) pools on the mesas of San Diego.⁶ These pools are small (some only a few yards in diameter), and they dry out completely for all but a few weeks each spring. During those weeks, however, the pools provide habitat for aquatic life and are characterized by a prevalence of vegetation "typically adapted for life in saturated soil conditions." Discharges during the dry season, however, would have destroyed the wetlands' functions served in the wet season and would be prohibited absent a § 404 permit.

Noncyclic changes in wetlands occur catastrophically or gradually and can either create new wetlands or destroy others. Catastrophic changes include, for example, breaching of dikes or barriers during storms, which give rise to new wetlands, or digging of drainage ditches or blocking of streams, which destroy wetlands. Gradual changes include, for example, those caused by siltation, erosion, successional changes in vegetation, and small scale changes in stream flows or directions. For CWA purposes, the question is *when* any of these entities are regulated wetlands.

For wetlands that have already been irrevocably changed to dry or fast land, the

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¹See § 13:95.

²See, e.g., *United States v. Byrd*, 609 F.2d 1204, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20757 (7th Cir. 1979).

³*United States v. Phelps Dodge Corp.*, 391 F. Supp. 1181, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20308 (D. Ariz. 1975).

⁴*United States v. Texas Pipe Line Co.*, 611 F.2d 345, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20184 (10th Cir. 1979).

⁵See generally 33 U.S.C.A. § 1251.

⁶*United States v. Eastgate Miramar Assoc.*, Civ. No. 800756-E(M) (S.D. Cal. 1980) (consent decree in civil enforcement action acknowledged that vernal pools are wetlands regulated under the CWA).

Agency's approach is straightforward. If a water body was converted to dry land before 1972, it is no longer a regulated water body.⁷ If it was converted to dry land *legally* after 1972, it is not a regulated water body. If, however, any of these water bodies become re-inundated and characterized by a prevalence of vegetation typically adapted for life in saturated soil conditions, they resume the stature of a regulated entity and are fully subject to the Clean Water Act. In *USI Properties Corp. v. EPA*, for example, EPA sought to assert CWA jurisdiction over certain former wetlands in Puerto Rico.⁸ For several decades prior to 1972, these areas had been subject to continuous pumping, as a result of which they were rendered dry, and their characteristic vegetation dramatically changed. In the late 1970s, however, pumping ceased and waters reinvaded the land. The characteristic vegetation changed, becoming predominantly wetlands vegetation. The court ruled that the government was likely to succeed on the merits of its claim that CWA jurisdiction was properly asserted, even though a simple flick of the switch could have started the pumps at any time.

Wetlands subject to CWA jurisdiction can also be created from dry land, either by the intentional acts of men or incidents thereto, or by acts of nature. These include rerouting streams, beaver dams, and washouts of piles and dikes. In such cases the questions are whether the elements of a CWA wetland have come into existence (*i.e.*, requisite vegetation, soils, hydrology), and whether it is predictable that the new wetland is more than a passing phenomenon.⁹

§ 13:99 Jurisdiction of § 404—Application of the wetlands definition—The wetlands manual

Prior to 1989, each of the four federal agencies with wetland-related duties—the Corps, EPA, the Fish and Wildlife Service, and the Soil Conservation Service—employed its own procedures and criteria for identifying and delineating wetlands. Although the agencies' definitions of wetlands were conceptually the same, relying on the basic elements of hydrology, vegetation, and soils, their varied technical approaches to wetlands identification led to inconsistent determinations of wetland boundaries both within each agency and between agencies.

Finally, in 1989, without benefit of notice-and-comment procedures, the four agencies adopted the "Federal Manual for Identifying and Delineating Jurisdictional Wetlands" ("Manual"). Although the manual incorporated the traditional elements of hydrology, vegetation and soils, its relative emphasis on the presence of mapped hydric soil areas, which include tracts that were never wetland or are drained or dry, as a fundamental element of wetlands identification and delineation led a number of Manual users to conclude that the presence of hydraulic conditions, *e.g.*, saturated soil, was no longer a determinative factor in wetlands identification. Under this interpretation of the Manual, millions of drained former wetlands became subject to federal regulation.

In response to vigorous criticism of the Manual, primarily by farmers, developers,

⁷Wetlands are distinguishable from traditionally navigable "waters" in this regard. *See, e.g.*, *Kaiser-Aetna v. United States*, 444 U.S. 164, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20042 (1979). The Court held that waters that had been navigable-in-fact remained subject to the navigation servitude, even though they had been removed from navigation. The Court ruled that traditional concepts of navigation were so historic and deep-seated that all were deemed to have notice. This has not been deemed to be the case for wetlands which, as shown in § 13:97, did not come within the regulatory scope of the CWA until 1975 at the earliest.

⁸*USI Properties Corp. v. E.P.A.*, 517 F. Supp. 1235, 16 Env't. Rep. Cas. (BNA) 1408, 11 Env'tl. L. Rep. 20971 (D.P.R. 1981).

⁹Corps' regulations provide for emergency repairs of dikes, dams, and other barriers. 33 C.F.R. § 323.4(a)(2). *See also* EPA's regulation at 40 C.F.R. § 232.3(c)(2).

and the oil and gas industry, the four agencies proposed significant revisions to the Manual.¹ The revisions clarify the relationship between hydric soils and hydrology in wetlands identification by establishing wetland hydrology as a mandatory independent technical criteria for wetland determination.

The revisions also proposed certain other changes to the Manual, which had been the subject of intense internal debate within the Bush Administration. These included a new definition of the wetland hydrology criterion that would require an area to be inundated for fifteen or more consecutive days, or saturated from surface or groundwater to the surface for twenty-one or more consecutive days during the growing season in most years. Under the then-existing Manual, only seven days of saturation or inundation were required during the growing season to qualify an area as a wetland under the hydrology criteria.

Another controversial element of the proposal concerned the weight to be given under the hydrophytic vegetation criterion to facultative neutral plants, which are equally likely to occur in wetlands or nonwetlands. The agencies proposed the “prevalence index” approach, which assigns relative values to five types of indicator species, including facultative neutral species, measures each as a percentage of the total community, and multiplies the percentages by the assigned value. The agencies had also asked for comment, however, on a more easily executed, but possibly less reliable method: the Facultative Neutral test. Under the Facultative Neutral test, an area would qualify as a wetland for purposes of the hydrophytic vegetation criterion if, after discounting all dominant facultative plants, the number of dominant obligate wetland and facultative wetland species (those frequently or usually associated with wetlands) exceeded the number of dominant facultative upland and obligate upland species (those more likely to be found, or almost exclusively found, in nonwetland areas).

In August 1991, the Corps returned to using its 1987 Corps of Engineers Wetlands Delineation Manual (1987 Manual).² The Energy and Water Development Appropriations Act of 1993³ requires the Corps to continue using the 1987 Manual “until a final wetlands delineation manual is adopted.” In order to avoid inconsistent wetland delineation determinations between the Corps and EPA, EPA agreed to also use the 1987 Manual in delineating wetlands.⁴ The Corps has developed regional supplements on water delineation.⁵

§ 13:100 Section 404 permit program and administration

Section 404 provides that the Secretary of the Army (by and through the Corps) may issue permits for the discharge of dredged and fill materials into “navigable waters.”¹ Corps’ regulations provide procedures for permit application and process-

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¹56 Fed. Reg. 40446 (Aug. 14, 1991). Although the agencies contend that the Manual is a technical guidance that is not subject to notice-and-comment rulemaking requirements, the proposal states that portions of the final manual may be promulgated as a final rule and published in the Code of Federal Regulations.

²Waterways Experiment Station Technical Report Y-87-1, Jan. 1987. See 58 Fed. Reg. 4995 (Jan. 19, 1993).

³Pub. L. No. 102-337, 106 Stat. 1315 (1992).

⁴58 Fed. Reg. 4995 (Jan. 19, 1993).

⁵U.S. Army Corps of Engineers, Regional Supplements to Corps Delineation Manual, http://www.usace.army.mil/missions/civilworks/regulatoryprogramandpermits/reg_supp.aspx.

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¹33 U.S.C.A. § 1344(a).

ing as well as for interagency coordination and enforcement.² The substantive criteria for permit evaluation are established by EPA in consultation with the Corps.³

§ 13:101 Section 404 permit program and administration—Dredged and fill materials

The terms dredged materials and fill materials are not defined in the CWA. They are defined by EPA and the Corps in their implementing regulations.

Dredged material is defined as material that is excavated or dredged from waters of the United States.¹ Along with excavated slurries and muds traditionally viewed as “dredged” materials, the term has also been construed to include vegetal matter uprooted from a wetland² and could include crushed seashells.³ In many cases, the material in question is also being used for “fill.” In such cases, it is immaterial for the threshold regulatory question whether the material is also “dredged.” However, dredged materials are subject to special testing to determine suitability for discharge into water.⁴ Therefore, the distinction does have some import in practice.

The term “fill material” has been defined differently in the EPA and Corps regulations. Until 2002, the Corps’ definition employed what came to be known as the “primary purpose test.” Thus, the Corps defined fill material as:

[A]ny material used for the primary purpose of replacing an aquatic area with dry land or of changing the bottom elevation of waterbody. The term does not include any pollutant discharged into the water primarily to dispose of waste, as that activity is regulated under Section 402 of the Clean Water Act.⁵

EPA, however, rejected the primary purpose test as unworkable, in part because it was dependent on the subjective motivations of the discharger and, therefore, had no bearing on the environmental consequences of the discharge. Thus, EPA defines fill material as any “pollutant” whose discharge has the *effect* of replacing an aquatic area with dry land or of changing the bottom elevation of a waterbody.⁶ The Corps adopted this definition in 2002.⁷

Until 2002, the choice of definition dictated which agency issued the permits. EPA was authorized to issue permits under its § 402 authority for all discharges of pollutants, except discharges of dredged or fill material. Thus, if an activity was not a discharge of “fill,” under the Corps’ definition, the prospective discharger was required to seek a permit from EPA (or an implementing state) rather than the Corps, even if the activity is identical to another where the discharger has expressed a “primary purpose” to fill, thereby invoking the Corps’ jurisdiction. The result was

²See generally 33 C.F.R. §§ 323 to 330.

³See § 13:108. EPA also provides regulatory guidance letters. See Laws, Regulations, Treaties: Policy and Technical Guidance Documents, <http://water.epa.gov/lawsregs/lawsguidance/cwa/wetlands/>.

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¹33 C.F.R. § 323.2(c); 40 C.F.R. § 232.2.

²*Avoyelles Sportsmen’s League v. Alexander*, 473 F. Supp. 525, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20315 (W.D. La. 1979), *aff’d in part, rev’d in part*, 715 F.2d 897, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20942 (5th Cir. 1983).

³See *United States v. Lambert*, 695 F.2d 536, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20436 (11th Cir. 1983).

⁴See generally 40 C.F.R. § 230.

⁵See 42 Fed. Reg. 37130 (1977).

⁶40 C.F.R. § 232.2.

⁷33 C.F.R. § 323.2(e); Final Revisions to the Clean Water Act Regulatory Definitions of “Fill Material” and “Discharge of Fill Material,” 67 Fed. Reg. 31129 (May 9, 2002).

forum shopping, review of identical activities under different standards (*i.e.*, § 402 technology based effluent limitations and § 404 water-quality-based guidelines),⁸ and public confusion.

EPA and the Corps entered into a Memorandum of Agreement (MOA) in 1986 in which they tried to come to terms with their long-standing definitional difference, which centers on a different view of where jurisdiction lies for regulation of discharges of solid waste into water bodies. Under the MOA, the agencies decided that ultimate resolution of the issue should be tied to the EPA study of the matter required by the Hazardous and Solid Waste Amendments of 1984. In the meantime, the interim arrangement contemplated by the MOA has EPA using § 309 to enforce the CWA in relation to most solid or semisolid waste discharges and draws a distinction between homogeneous and heterogeneous wastes for permitting purposes, the former generally being subject to § 402 and the latter to § 404.⁹ This issue was resolved in 2002 when EPA and the Corps adopted a definition of “fill material” that dispenses with the primary purpose test.¹⁰ The term “fill material” includes, among other things, earth, ash, shells and vegetal debris moved with discers and graders for the purpose of leveling.¹¹

EPA and the Corps reconciled their differing regulations and issued a final rule to amend the definition of “fill material” in 2002.¹² According to the amended definition, “fill material” is material that “has the effect of: (i) Replacing any portion of a water of the United States with dry land; or (ii) Changing the bottom elevation of any portion of a water of the United States.”¹³ The rule provides examples of fill material¹⁴ and explicitly excludes trash.¹⁵

In *Coeur Alaska v. Southeast Alaskan Conservation Council*, the Supreme Court concluded that the CWA gives authority to the Corps rather than to EPA to issue a permit for the discharge of slurry that meets the agencies’ regulatory definition of fill.¹⁶ The Court noted that Section 402 gives the EPA authority to issue “permit[s] for the discharge of any pollutant,” with one important exception: the EPA may not issue permits for fill material that falls under the Corps’ Section 404 permitting authority. Thus, the Court concluded “[t]he Act is best understood to provide that if the Corps has authority to issue a permit for a discharge under § 404, then the EPA lacks authority to do so under § 402.”¹⁷

§ 13:102 Section 404 permit program and administration—Discharges of dredged materials and fill materials

The term “discharge of dredged materials” is defined in the Corps’ regulations:

- (1) Except as provided below in paragraph (2), the term **discharge of dredged ma-**

⁸See § 13:95; § 13:108.

⁹See 53 Fed. Reg. 20764 (1988) (explaining the MOA); *West Virginia Coal Ass’n v. Reilly*, 932 F.2d 964, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 20092 (4th Cir. 1991) (applying the MOA to support EPA’s authority over placement of fill and water treatment ponds in streams for disposal of surface coal mining waste).

¹⁰See 67 Fed. Reg. 31129 (May 9, 2002).

¹¹See, *e.g.*, § 13:93.

¹²67 Fed. Reg. 31129 (May 9, 2002).

¹³33 C.F.R. § 323.2(e)(1); 40 C.F.R. § 232.2.

¹⁴33 C.F.R. § 323.2(e)(2); 40 C.F.R. § 232.2.

¹⁵33 C.F.R. § 323.2(e)(3); 40 C.F.R. § 232.2.

¹⁶*Coeur Alaska, Inc. v. Southeast Alaska Conservation Council*, 557 U.S. 261, 129 S. Ct. 2458, 174 L. Ed. 2d 193, 68 Env’t Rep. Cas. (BNA) 1513 (2009).

¹⁷*Coeur Alaska, Inc. v. Southeast Alaska Conservation Council*, 557 U.S. 261, 274, 129 S. Ct. 2458, 174 L. Ed. 2d 193, 68 Env’t Rep. Cas. (BNA) 1513 (2009).

terial means any addition of dredged material into, including redeposit of dredged material other than incidental fallback within, the waters of the United States. The term includes, but is not limited to, the following:

- (i) The addition of dredged material to a specified discharge site located in waters of the United States;
 - (ii) The runoff or overflow from a contained land or water disposal area; and
 - (iii) Any addition, including redeposit other than incidental fallback, of dredged material, including excavated material, into waters of the United States which is incidental to any activity, including mechanized landclearing, ditching, channelization, or other excavation.
- (2) The term **discharge of dredged material** does not include the following:
- (i) Discharges of pollutants into waters of the United States resulting from the onshore subsequent processing of dredged material that is extracted for any commercial use (other than fill). These discharges are subject to section 402 of the Clean Water Act even though the extraction and deposit of such material may require a permit from the Corps or applicable State section 404 program.
 - (ii) Activities that involve only the cutting or removing of vegetation above the ground (e.g., mowing, rotary cutting, and chainsawing) where the activity neither substantially disturbs the root system nor involves mechanized pushing, dragging, or other similar activities that redeposit excavated soil material.
 - (iii) Incidental fallback.
- (3) Section 404 authorization is not required for the following:
- (i) Any incidental addition, including redeposit, of dredged material associated with any activity that does not have or would not have the effect of destroying or degrading an area of waters of the United States as defined in paragraphs (d)(4) and (d)(5) of this section; however, this exception does not apply to any person preparing to undertake mechanized landclearing, ditching, channelization and other excavation activity in a water of the United States, which would result in a redeposit of dredged material, unless the person demonstrates to the satisfaction of the Corps, or EPA as appropriate, prior to commencing the activity involving the discharge, that the activity would not have the effect of destroying or degrading any area of waters of the United States, as defined in paragraphs (d)(4) and (d)(5) of this section. The person proposing to undertake mechanized landclearing, ditching, channelization or other excavation activity bears the burden of demonstrating that such activity would not destroy or degrade any area of waters of the United States.
 - (ii) Incidental movement of dredged material occurring during normal dredging operations, defined as dredging for navigation in navigable waters of the United States, as that term is defined in part 329 of this chapter, with proper authorization from the Congress and/or the Corps pursuant to part 322 of this Chapter; however, this exception is not applicable to dredging activities in wetlands, as that term is defined at section 328.3 of this Chapter.
 - (iii) Certain discharges, such as those associated with normal farming, silviculture, and ranching activities, are not prohibited by or otherwise subject to regulation under section 404. See 33 C.F.R. 323.4 for discharges that do not required permits.
- (4) For purposes of this section, an activity associated with a discharge of dredged material destroys an area of waters of the United States if it alters the area in such a way that it would no longer be a water of the United States.¹

The term “discharge of fill material” is also defined by the Corps:

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¹33 C.F.R. § 323.2(d). EPA regulations now contain a virtually identical definition. See 40 C.F.R. § 232.2(e).

The term discharge of fill material means the addition of fill material into waters of the United States. The term generally includes, without limitation, the following activities: Placement of fill that is necessary for the construction of any structure or infrastructure in a water of the United States; the building of any structure, infrastructure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, or other uses; causeways or road fills; dams and dikes; artificial islands; property protection and/or reclamation devices such as riprap, groins, seawalls, breakwaters, and revetments; beach nourishment; levees; fill for structures such as sewage treatment facilities, intake and outfall pipes associated with power plants and subaqueous utility lines; placement of fill material for construction or maintenance of any liner, berm, or other infrastructure associated with solid waste landfills; placement of overburden, slurry, or tailings or similar mining-related materials; and artificial reefs. The term does not include plowing, cultivating, seeding and harvesting for the production of food, fiber, and forest products (See § 323.4 for the definition of these terms). See § 323.3(c) concerning the regulation of the placement of pilings in waters of the United States.²

The regulatory definition underscores that CWA regulatory jurisdiction extends only to point source discharges of pollutants, including dredged or fill materials. Surface runoff does not constitute a discharge of dredged or fill material even if it is silt laden and would have the effect of changing the bottom elevation of the receiving water body. However, if the runoff is channeled through a ditch, fissure, pipe, or other “point source” conduit, it could constitute a regulated discharge. This concept has taken on significance, mostly in Midwestern farming areas, as a result of certain stream-straightening or channelization practices in which scoured (dredged) material is carried downstream by the confined water body.³ These practices sometimes cause flooding downstream. No court has ruled on whether such scour, by itself, is a discharge of dredged or fill material.

Other point sources for the discharge of dredged or fill materials include the following: dredging equipment, pipes, ditches, bulldozers, dump and garbage trucks, backhoes, graders, rakers, discers, and other earth-moving or leveling equipment.⁴ Mere removal of vegetation, without more, does not constitute a point source discharge.⁵

In 1993, EPA and the Corps issued a final rule that provides that any addition or redeposition of dredged material associated with any activity, including mechanized landclearing, ditching, channelization, and other excavation, that destroys or degrades waters of the United States requires a § 404 permit.⁶ “Destroy” is defined as engaging in an activity that “alters [an] area in such a way that it would no longer be a water of the United States.” It is noted in the rule that the “destruction” of waters of the United States does not eliminate CWA jurisdiction. “Degrade” is defined as engaging in an activity that “has more than a de minimis (i.e., inconsequential) effect on [an] area by causing an identifiable individual or cumulative adverse effect on any aquatic function.” The individual conducting the mechanized land clearing, ditching, channelization, or other excavation activity bears the burden of demonstrating that the activity will not destroy or degrade waters of the United States.⁷

Pursuant to a final rule issued on May 10, 1999, EPA and the Corps must evalu-

²33 C.F.R. § 323.2(f). EPA regulations contain a virtually identical definition, except that the EPA version omits the final sentence of the Corps’ definition. 40 C.F.R. § 232.2.

³*E.g.*, Charitan River, Missouri, U.S. EPA Region VII.

⁴*See generally* 33 U.S.C.A. § 1362.

⁵*See* § 13:93.

⁶58 Fed. Reg. 45008 (Aug. 25, 1993). But see the discussion of the courts’ treatment of this rule later in this section at note 11.

⁷*United States v. Deaton*, 209 F.3d 331, 30 Env’tl. L. Rep. (Env’tl. L. Inst.) 20508 (4th Cir. 2000)

ate, on a case-by-case basis, whether a particular redeposit of dredged material requires a § 404 permit.⁸ Specifically, the final rule indicates that redeposits associated with mechanized landclearing, redeposits at various distances from point of removal, and redeposits of bottom sediments onto adjacent waterways would require a permit.⁹

Between 1986 and 1993, the Corps defined the discharge of dredged material as “any addition of dredged material into the waters of the United States” while expressly excluding “de minimis, incidental soil movement occurring during normal dredging operations,” or incidental fallback.¹⁰ In 1993, however, the Corps promulgated a new rule that eliminated the de minimis exception (known as the “Tulloch Rule” or “Tulloch I”).¹¹ This rule defined the discharge of dredged material as “any addition of dredged material into, including redeposit of dredged material within, the waters of the United States.”¹²

The D.C. Circuit has addressed whether incidental fallback triggers CWA jurisdiction in a series of decisions. In response to industry challenges, the district court for the District of Columbia invalidated the Tulloch Rule.¹³ The Court of Appeals affirmed,¹⁴ agreeing with plaintiffs and the district court that “the straightforward statutory term ‘addition’ cannot reasonably be said to encompass the situation in which material is removed from the waters of the United States and a small portion of it happens to fall back.”¹⁵ The Court of Appeals was careful, however, to make clear that it was not prohibiting the regulation of any redeposit, but only incidental fallback.

In 2001, the Corps and EPA promulgated a rule that defined “incidental fallback” as “the redeposit of small volumes of dredged material that is incidental to excavation activity in waters of the United States when such material falls back to

(holding that sidecasting, which involves deposit of dredged or excavated material from a wetland back into that same wetland, constitutes discharge of a pollutant that violates the CWA when conducted without a permit); *Greenfield Mills, Inc. v. O'Bannon*, 189 F. Supp. 2d 893, 912 (N.D. Ind. 2002), *aff'd in part, rev'd in part and remanded by* 361 F.3d 934, 34 Env'tl. L. Rep. (Env'tl. L. Inst.) 20022 (7th Cir. 2004) (finding that discharge and movement of soil incident to dam maintenance does not amount to the addition of a pollutant).

⁸64 Fed. Reg. 25119 (1999). By issuing this final rule, EPA and the Corps sought to conform their regulations with the rulings issued by the District of Columbia District and Circuit courts that had invalidated the Tulloch Rule. Under the final rule, the definition of the term “discharge of dredged material” was modified to explicitly exclude “incidental fallback.”

⁹EPA and the Corps have redefined the term “discharge of dredged material” by establishing a presumption that the use of heavy mechanized equipment and conducting certain activities (e.g., mechanized landclearing, ditching, channelization) will lead to more than incidental fallback and thus result in a discharge of dredged material that would be subject to § 404 permit requirements. A developer may rebut this presumption by showing that the activity was designed and conducted so as to result only in incidental fallback. 66 Fed. Reg. 4550 (Jan. 17, 2001).

¹⁰51 Fed. Reg. 41,232 (1986).

¹¹*See American Min. Congress v. U.S. Army Corps of Eng'rs*, 951 F. Supp. 267, 269, 43 Env't Rep. Cas. (BNA) 2057, 27 Env'tl. L. Rep. 20589 (D.D.C. 1997), *judgment aff'd*, 145 F.3d 1399, 46 Env't Rep. Cas. (BNA) 1769, 1999 A.M.C. 908, 28 Env'tl. L. Rep. 21318, 141 O.G.R. 198 (D.C. Cir. 1998) (explaining the Tulloch Rule).

¹²*American Min. Congress v. U.S. Army Corps of Eng'rs*, 951 F. Supp. 267, 269, 43 Env't Rep. Cas. (BNA) 2057, 27 Env'tl. L. Rep. 20589 (D.D.C. 1997), *judgment aff'd*, 145 F.3d 1399, 46 Env't Rep. Cas. (BNA) 1769, 1999 A.M.C. 908, 28 Env'tl. L. Rep. 21318, 141 O.G.R. 198 (D.C. Cir. 1998).

¹³*American Min. Congress v. U.S. Army Corps of Eng'rs*, 951 F. Supp. 267, 43 Env't Rep. Cas. (BNA) 2057, 27 Env'tl. L. Rep. 20589 (D.D.C. 1997), *judgment aff'd*, 145 F.3d 1399, 46 Env't Rep. Cas. (BNA) 1769, 1999 A.M.C. 908, 28 Env'tl. L. Rep. 21318, 141 O.G.R. 198 (D.C. Cir. 1998) (Harris, J.).

¹⁴*Nat'l Min. Ass'n v. U.S. Army Corps of Eng'rs*, 145 F.3d 1399, 46 Env't Rep. Cas. (BNA) 1769, 1999 A.M.C. 908, 28 Env'tl. L. Rep. 21318, 141 O.G.R. 198 (D.C. Cir. 1998).

¹⁵*Nat'l Min. Ass'n v. U.S. Army Corps of Eng'rs*, 145 F.3d 1399, 1404, 46 Env't Rep. Cas. (BNA) 1769, 1999 A.M.C. 908, 28 Env'tl. L. Rep. 21318, 141 O.G.R. 198 (D.C. Cir. 1998).

substantially the same place as the initial removal” (known as the “Tulloch II rule”). The rule provides that incidental fallback may include, for example, “soil that is disturbed when dirt is shoveled and the back-spill that comes off a bucket when such small volume of soil or dirt falls into substantially the same place from which it was initially removed.”

In *National Association of Home Builders v. U.S. Army Corps of Engineers*, the district court for the District of Columbia issued an order enjoining the Corps and EPA from enforcing and applying the Tulloch II rule.¹⁶ The court concluded that the rule was contrary to the CWA on its face because the rule defined incidental fallback partly in terms of the volume of material. The court stated that the difference between incidental fallback and redeposit is better understood in terms of two other factors: (1) the time the material is held before being dropped to earth; and (2) the distance between the place where the material is collected and the place where it is dropped. The *NAHB* decision reinstated the text of the 1999 Tulloch I rule,¹⁷ which prohibited the regulation of incidental fallback.

In 2008, the Corps and EPA promulgated a final rule that amended the definition of “discharge of dredged material” in Section 404 to be consistent with the court’s order.¹⁸ Until the EPA and Corps address the definition of discharge, the 1999 rule will control.

In addition, the Corps and EPA decide whether a particular redeposit is jurisdictional on a case-by-case basis.¹⁹ The Corps and EPA have clarified that the redeposit’s associated with the following actions are subject to CWA jurisdiction: “mechanized land clearing, redeposit at various distances from the point of removal (e.g., side casting), and removal of dirt and gravel from a streambed and its subsequent redeposit in the waterway after segregation of minerals.”²⁰

§ 13:103 Section 404 permit program and administration—Interagency dynamics

Despite the CWA design that the Corps be the permitting authority for § 404 permits,¹ the Act requires that the Corps coordinate permit review with EPA and other federal agencies.² Memoranda of Understanding set out the procedures for interagency consultation and dispute resolution.

The Act also provides that EPA may, under certain circumstances, prohibit an area for specification as a discharge site for dredged or fill materials.³ EPA may exercise this authority in advance of any permit application for a specific site and

¹⁶Nat’l Ass’n of Home Builders v. U.S. Army Corps of Eng’rs, 64 Env’t Rep. Cas. (BNA) 2050, 2007 WL 259944 (D.D.C. 2007).

¹⁷See *Georgetown University Hosp. v. Bowen*, 821 F.2d 750, 757, 18 Soc. Sec. Rep. Serv. 136 (D.C. Cir. 1987), *judgment aff’d*, 488 U.S. 204, 109 S. Ct. 468, 102 L. Ed. 2d 493, 23 Soc. Sec. Rep. Serv. 511 (1988) (“the effect of invalidating an agency rule is to ‘reinstat[e] the rules previously in force’”).

¹⁸73 Fed. Reg. 79641 (Dec. 30, 2008).

¹⁹64 Fed. Reg. 25120 (May 10, 1999).

²⁰Nat’l Min. Ass’n v. U.S. Army Corps of Eng’rs, 145 F.3d 1399, 1407, 46 Env’t Rep. Cas. (BNA) 1769, 1999 A.M.C. 908, 28 Env’tl. L. Rep. 21318, 141 O.G.R. 198 (D.C. Cir. 1998); *see also* *Am. Min. Congress v. U.S. Army Corps of Eng’rs*, 120 F. Supp. 2d 23, 51 Env’t Rep. Cas. (BNA) 1773 (D.D.C. 2000).

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¹33 U.S.C.A. § 1344(a). Section 404 also provides for state administration of the § 404 permit program with regard to nontraditionally navigable waters. 33 U.S.C.A. §§ 1344(g) to (l). To date, only two states—Michigan and New Jersey—have assumed this responsibility. 40 C.F.R. §§ 233.70, 233.71.

²33 U.S.C.A. § 1344(q).

³33 U.S.C.A. § 1344(c).

may also exercise it *after* the Corps has actually issued a § 404 permit for a specific site.⁴ Thus, EPA retains an effective veto power over Corps permits when, in EPA's view, the discharge will have an unacceptable adverse impact on "municipal water supplies, shellfish beds and fishery areas . . . , wildlife, or recreation areas."⁵ However, EPA has rarely exercised this authority.⁶

In 1992, EPA and the Department of the Army entered into a Memorandum of Agreement (MOA) setting forth procedures for resolving disputes over § 404 policy and administrative issues. In addition, the MOA limits EPA's authority to challenge specific individual permit decisions to those cases in which EPA believes the project, taking into account mitigation measures, will involve substantial and unacceptable impacts on "aquatic resources of national importance."⁷

In 2006, the Corps and EPA proposed regulations standardizing compensatory mitigation for impacts to wetlands under the CWA § 404.⁸

§ 13:104 Section 404 permit program and administration—General permits and exemptions

Recognizing that certain discharge activities are *de minimis* or of limited environmental impact, § 404 exempts certain discharge activities from CWA permit requirements and provides for the establishment of general permits by rulemaking for certain types of activities.¹

§ 13:105 Section 404 permit program and administration—General permits and exemptions—Exemptions—Normal farming and silvicultural activities

Section 404(f) provides, *inter alia*, that "normal" agriculture and silvicultural activities are exempt from CWA permitting requirements, unless they will have the effect of converting a water of the United States to a new use. In *Avoyelles Sportsmen's League v. Alexander*, the court determined that the term "normal" encompassed only ongoing, extant farming or silvicultural activities and did not include the preparatory activities necessary to put an area to agricultural use for the first time.¹ Largely as a result of the controversy generated by this case, Attorney General Civiletti opined in 1979 that EPA, not the Corps, has the ultimate

⁴33 U.S.C.A. § 1344(c).

⁵As EPA may exercise veto power over Corps permits, the Corps may exercise veto power over the actions of other federal agencies. In *Monongahela Power Co. v. Marsh*, 809 F.2d 41, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20422 (D.C. Cir. 1987), *cert. denied*, 484 U.S. 816 (1987), the court held that a Corps permit was required to discharge fill material into navigable waters during construction of a hydroelectric power facility, even though the project had previously been licensed by the Federal Power Commission (now the Federal Energy Regulatory Commission).

⁶*See, e.g.*, Final Determination of the Administrator concerning North Miami Landfill site pursuant to § 404(c) of the Clean Water Act (January 19, 1981); Recommendation of the Regional Administrator (Region I) concerning the Sweeden's Swamp Site in Attleboro, Massachusetts, pursuant to § 404(c) of the Clean Water Act (March 1986), 50 Fed. Reg. 8383 (1985); *see also* *Bersani v. Deland*, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20001 (N.D.N.Y. 1987); *Newport Galleria Group v. Deland*, 618 F. Supp. 1179, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20033 (D.D.C. 1985).

⁷Clean Water Act § 404(q); Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army (Aug. 11, 1992).

⁸*See* 40 C.F.R. § 230.91.

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¹33 U.S.C.A. § 1344(f), (e).

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¹*See* § 13:93; *see also* 33 C.F.R. §§ 232.3, 323.4.

administrative authority to determine which activities are exempt under § 404(f) because the exemptions apply to all activities requiring permits under the CWA, including discharges of pollutants governed by § 402.² Corps and EPA regulations provide further guidance on the nature of activities exempt under § 404(f).³

EPA proposed to “clarify” the agricultural and silvicultural exemption in a regulatory proposal issued in 1984.⁴ It did not promulgate most of the clarifying language, however, concluding that the regulated community seemed to understand the scope of the exemption.⁵ It did promulgate an amendment to an exemplary note in Part 232, stating clearly that a “conversion of Section 404 wetland to a non-wetland is a change in use of an area of waters of the U.S.,” and therefore deprives the converter of the exemption.⁶

Aside from *Avoyelles*, those courts that have been called upon to construe § 404(f) have tended to construe it narrowly and have placed the burden on the person seeking refuge under the subsection to demonstrate its applicability to the activity at issue.⁷

§ 13:106 Section 404 permit program and administration—General permits and exemptions—Exemptions—Other exemptions and recapture

Other exempt activities include maintenance and emergency replacement of recently damaged aquatic structures,¹ construction or maintenance of farm or stock ponds or maintenance of drainage ditches,² construction at a construction site of temporary sedimentation basins that do not involve the discharge of fill material into waters of the United States,³ and activities subject to a state permit in a delegated state.⁴

Section 404(f)(2) also contains an important exception to the enumerated 404(f)(1) permitting exemptions. The so-called “recapture provision” states that, notwithstanding an applicable permitting exemption, a CWA permit is required for discharges of dredged or fill material that bring “an area of the navigable waters into a use to which it was not previously subject, where the flow or circulation of navigable waters may be impaired or the reach of such waters be reduced.”⁵

²43 Op. Atty. Gen. 15 (1979).

³See 33 C.F.R. § 323.4(a); 40 C.F.R. § 232.3.

⁴49 Fed. Reg. 39012 (proposed Oct. 2, 1984).

⁵See 53 Fed. Reg. 20764, 20765 (1988).

⁶40 C.F.R. § 232.3(b) note.

⁷*United States v. Larkins*, 657 F. Supp. 76, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20783 (W.D. Ky. 1987), *aff'd*, 852 F.2d 189, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21416 (6th Cir. 1988), *cert. denied sub nom. Larkins v. United States*, 489 U.S. 1016 (1989); *cf. United States v. Cumberland Farms of Conn., Inc.*, 647 F. Supp. 1166, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20301 (D. Mass. 1986), *aff'd on other grounds*, 826 F.2d 1151, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 21270 (1st Cir. 1987), *cert. denied*, 484 U.S. 1061 (1988); *United States v. Brace*, 41 F.3d 117, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 20343 (3d Cir. 1994), *cert. denied*, 115 S. Ct. 2610 (1995).

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¹40 C.F.R. § 232.3(c)(2).

²40 C.F.R. § 232.3(c)(3).

³40 C.F.R. § 232.3(c)(4).

⁴40 C.F.R. § 232.3(c)(5).

⁵33 U.S.C. § 1344(f)(2). *See e.g., Borden Ranch Partnership v. U.S. Army Corps of Engineers*, 261 F.3d 810, 52 Env't. Rep. Cas. (BNA) 2025, 32 Env'tl. L. Rep. 20011 (9th Cir. 2001), judgment *aff'd*, 537 U.S. 99, 123 S. Ct. 599, 154 L. Ed. 2d 508, 55 Env't. Rep. Cas. (BNA) 1417 (2002).

§ 13:107 Section 404 permit program and administration—General permits and exemptions—General permits and nationwide permits

Section 404(e) provides that the Corps may establish general permits on a nationwide or regional basis for certain classes of discharge activities. Establishment of these permits is subject to formal notice-and-comment provisions. In all cases, the Corps retains the discretion to require an individual permit, and predischARGE notice to the Corps of intent to discharge is required in certain cases.¹

Despite the fact that the Act's express grant of authority to issue general permits is limited to certain classes of *activities*, the Corps has seen fit to implement a wide range of nationwide permits addressing classes of *water bodies*. As a result of citizen challenge in *National Wildlife Federation v. Marsh*,² the nationwide permits were revised in 1985 and made more limited in scope. Nevertheless, nationwide permits for discharges into certain classes of waters continue to exist, even absent any express statutory authority for their establishment.³

In late 1996, the Corps reissued the existing nationwide permits, but significantly lowered the threshold for coverage under the so-called Nationwide Permit (NWP) 26, which permits the discharge of dredged or fill material into headwaters and isolated waters.⁴ The new NWP 26 allowed for the discharge of dredged or fill material that causes the loss of less than three acres of headwaters or isolated waters, whereas the old NWP 26 allowed for discharges causing the loss of up to ten acres.⁵ In addition, the Corps committed to phase out NWP 26 within two years and replace it with a series of activity-specific general permits.⁶

In March 2000, the Corps replaced the NWP 26 with five new and six modified permits that were activity-specific.⁷ Most of the new NWPs authorize activities in nontidal waters, excluding nontidal wetlands adjacent to tidal waters. The new and existing NWPs allow for the discharge of dredged or fill material that causes the loss of less than half an acre of water. In addition, a preconstruction notification must be provided to a Corps district engineer for discharges of dredged or fill material resulting in the loss of greater than one-tenth of an acre of water.⁸

In an effort to combat the perceived unfairness of the wetlands regulatory process

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¹See generally 33 C.F.R. § 330. PredischARGE notice is required for discharges causing the loss or substantial adverse modification of greater than one-third acre and less than three acres of certain nontidal waters. 61 Fed. Reg. 65874 (Dec. 13, 1996). A Corps decision to allow an activity to proceed pursuant to a general permit is not ripe for judicial review unless there are no other regulatory obstacles to the commencement of the activity. *New Hanover Twp. v. U.S. Army Corps of Eng'rs*, 992 F.2d 470, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20836 (3d Cir. 1993).

²*National Wildlife Fed'n v. Marsh*, Civ. No. 82-3632 (D.D.C. Feb. 10, 1984).

³See CWA §§ 403(b), 404(b); 33 U.S.C.A. §§ 1343(b), 1344(b). Two nationwide permits, the "headwaters" permit and the "unasserted jurisdiction" permit, were discussed in the context of specific set of facts in *United States v. Cumberland Farms of Conn., Inc.*, 826 F.2d 1151, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 21270 (1st Cir. 1987).

⁴See 61 Fed. Reg. 65874 (Dec. 13, 1996).

⁵61 Fed. Reg. 65874 (Dec. 13, 1996).

⁶61 Fed. Reg. 65874 (Dec. 13, 1996).

⁷65 Fed. Reg. 12818 (March 9, 2000). In a case triggered by the 2000 amendments to NWP 26, *Nat'l Ass'n of Home Builders v. U.S. Army Corps of Eng'rs*, 453 F. Supp. 2d 116 (D.D.C. 2006), the U.S. District Court for the District of Columbia upheld NWP 26, concluding that it rationally achieved the purposes of the CWA.

⁸The Corps reissued the nationwide permits on March 12, 2007, and on March 19, 2012, with some modifications. The permits are expected to be reissued in 2017. See 81 Fed. Reg. 35186 (June 1, 2016) (proposing to reissue permits in 2017).

to small landowners, the Corps has also issued a nationwide general permit for residential development activities in wetlands. This general permit endeavors to strike a balance between minimizing the regulatory burden on landowners intending to build or expand residential developments and maintaining environmental safeguards designed to protect wetlands. The general permit allows discharges of dredged or fill material into wetlands for the construction or expansion of a single-family home provided that, among other things, (1) the discharge does not cause the loss of more than one-half acre of nontidal wetlands, including the loss of no more than 300 linear feet of stream bed, (2) the landowner notifies the Corps, (3) the single-family home is a personal residence, and (4) the permit is used only once per parcel of land.⁹

The Corps also issues regulatory guidance letters that are available on the Corps website.¹⁰

§ 13:108 Section 404 permit program and administration—Substantive criteria for § 404 permit issuance

The substantive evaluation of applications for § 404 is based on the § 404(b)(1) Guidelines (“Guidelines”).¹ The Guidelines were developed and promulgated by EPA, in conjunction and consultation with the Corps. First issued by EPA in interim final form on September 5, 1975, they were revised after public notice and comment and issued in final form on December 24, 1980.²

The Guidelines mandate four restrictions on discharges.³ Thus, proposals may only be permitted if there is no practicable alternative,⁴ if there will be no significant adverse impacts,⁵ if all reasonable mitigation is employed,⁶ and if no other statutory violations will occur.⁷

The heart of the analysis under the Guidelines is the evaluation of alternatives. To issue a permit, the Corps must determine there is not a “less environmentally damaging practical alternative” to the discharge. In 1990, the Corps and EPA entered into a memorandum of agreement regarding the determination of mitigation under the CWA. In that memorandum, the Corps and EPA clarify that the Guidelines are intended to maintain the integrity of the waters of the United States,

⁹72 Fed. Reg. 11092, 11186 (March 12, 2007). *See* *Sierra Club v. U.S. Army Corps of Eng’rs*, 508 F.3d 1332, 37 Env’tl. L. Rep. (Env’tl. L. Inst.) 20299 (11th Cir. 2007) (narrowly upholding a general permit as within the scope of § 404(e) because the permit was specifically designed to cabin the scope of activity in the permit area and minimize separate and cumulative impacts on the environment); *see also* U.S. Army Corps of Eng’rs, Nationwide General Permits, <http://www.swf.usace.army.mil/Missions/Regulatory/Permitting/NationwideGeneralPermits.aspx> (list of current nationwide permits). District engineers may also adopt regional conditions for nationwide permits. *See* 77 Fed. Reg. 34,10188 (Feb. 21, 2012).

¹⁰U.S. Army Corps of Engineers, Regulatory Guidance Letters, <http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/GuidanceLetters.aspx>.

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¹33 U.S.C.A. § 1344(b). The settlement agreement entered in *Nat’l Wildlife Fed’n v. Marsh* indicates that the Guidelines are binding on the permitting authority. Civ. No. 82-3632, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20261 (D.D.C. Feb. 10, 1984).

²40 Fed. Reg. 41292 (1975); 40 C.F.R. Part 230.

³40 C.F.R. § 230.10(a)-(d).

⁴40 C.F.R. § 230.10(a).

⁵40 C.F.R. § 230.10(c).

⁶40 C.F.R. § 230.10(d).

⁷40 C.F.R. § 230.10(b).

including wetlands.⁸ The Corps and EPA also issued a field memorandum recognizing that the appropriate level of analysis may vary depending on the nature of the project.⁹ The Guidelines “envision a correlation between the scope of the evaluation and the potential extent of adverse impacts.” As such, the level of analysis required “will vary to reflect the seriousness of the potential for adverse impacts on the aquatic ecosystems posed by the specific dredged or fill material.”¹⁰

To apply the Guidelines, the permitting authority analyzes three aspects of a discharge activity: the source and composition of the material to be discharged, the nature of the discharge activity, and the characteristics of the receiving water.¹¹

The first Guidelines restriction on discharges is that discharges of dredged or fill materials shall not be permitted if there exists a practicable alternative that would have “less adverse impact” on the aquatic ecosystem and that does not have other adverse environmental consequences.¹² “What is practicable depends on cost, technical and logistical factors . . . , [the Agency’s] intent is to consider those alternatives which are reasonable in terms of the overall scope/cost of the proposed project.”¹³ Further, “to be practicable, an alternative must be capable of achieving the basic purpose of the proposed activity.”¹⁴

The Guidelines establish a rebuttable presumption that practicable alternatives do exist, if the proposed discharge is for a non-water-dependent activity in a wetland or other “special aquatic site.”¹⁵ The burden is on the applicant to “clearly demonstrate” that practicable alternatives do not exist.¹⁶

Although it considered establishing an irrebuttable presumption against discharge in such areas for such purposes, EPA concluded that the rebuttable presumption would avoid the “unreasonable hardships” on applicants that an irrebuttable presumption would have posed.¹⁷

In *National Audubon Society v. Hartz Mountain Development Corp.*, the court reviewed the Corps’ application of the Guidelines’ criteria.¹⁸ There, citizens’ groups challenged the Corps’ issuance of a § 404 permit for a large development project in the New Jersey meadowlands. The meadowlands are waters of the United States

⁸Memorandum of Agreement between the Corps and the EPA, The Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines (Feb. 6, 1990), <http://water.epa.gov/lawsregs/guidance/wetlands/mitigate.cfm>.

⁹Memorandum to the Field, Appropriate Level of Analysis Required for Evaluating Compliance with the Section 404(b)(1) Guidelines Alternatives Requirements, <http://www.usace.army.mil/Portals/2/docs/civilworks/mous/flexible.pdf>.

¹⁰40 C.F.R. § 230.10(a); *see also* Greater Yellowstone Coal. v. Flowers, 359 F.3d 1257, 58 Env’t Rep. Cas. (BNA) 1008, 34 Env’t. L. Rep. 20019 (10th Cir. 2004).

¹¹40 C.F.R. §§ 230.6(a), 230.11.

¹²40 C.F.R. § 230.10(a).

¹³45 Fed. Reg. 85339 (1980).

¹⁴45 Fed. Reg. 85339 (1980); *see also* Conservation Law Found. v. FHA, 827 F. Supp. 871, 24 Env’t. L. Rep. (Env’t. L. Inst.) 20039 (D.R.I. 1993), *aff’d*, 24 F.3d 1465, 24 Env’t. L. Rep. (Env’t. L. Inst.) 21196 (1st Cir. 1994).

¹⁵40 C.F.R. § 230.3(g) to (l).

¹⁶40 C.F.R. § 230.10(a)(3); *see also* 40 C.F.R. §§ 230.40-.45; Greater Yellowstone Coal. v. Flowers, 359 F.3d 1257, 58 Env’t Rep. Cas. (BNA) 1008, 34 Env’t. L. Rep. 20019 (10th Cir. 2004).

¹⁷45 Fed. Reg. 85338-85339 (1980).

¹⁸*Nat’l Audubon Soc’y v. Hartz Mountain Dev. Corp.*, 14 Env’t. L. Rep. (Env’t. L. Inst.) 20724 (D.N.J. Oct. 24, 1983). In this unreported decision, the court reviewed the Corps’ issuance of a § 404 permit with analysis of the substantive provisions of the EPA Guidelines as applied by the Corps. The court found that issuance of the permit was reasonable. *See* Compton & Hackett, District Court Upholds Corps’ Interpretation of EPA’s Dredge and Fill, Env’t. Forum, Feb. 1984, at 24; *see also* 1902 Atlantic Ltd. v. Hudson, 574 F. Supp. 1381 (D.C. Va. 1983).

under the Clean Water Act.¹⁹ The plaintiffs asserted, *inter alia*, that defendant Hartz Mountain had failed to satisfy the Guidelines burden of clearly demonstrating a lack of practicable alternatives to its proposed project.²⁰ The parties agreed that the project was not water-dependent²¹ and that the rebuttable presumption applied to the proposal.²²

The court concluded that Hartz Mountain had clearly demonstrated a lack of practicable alternatives,²³ emphasizing Hartz Mountain's need for a unified parcel of land in proximity to Manhattan large enough to accommodate its proposed multiuse project at a single "core" location.²⁴

In determining whether an alternative is available, and therefore practicable, the Corps may consider sites not owned by the permit applicant. Specifically, 40 C.F.R. § 230.10(a)(2) provides that "an area not presently owned by the applicant which could reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity may be considered" if it is otherwise a practicable alternative.

In *Bersani v. Robichaud*,²⁵ another case involving application of the "practicable alternatives" Guidelines to a non-water-dependent project, developers challenged an EPA decision to veto the Corps' approval of a permit to build a shopping mall on certain wetlands in Massachusetts known as Sweeden's Swamp. The veto was based on a finding by EPA that an alternative site had been available to the developer at the time it entered the market to search for a site for the mall. Despite the fact that the alternative site was arguably no longer available by the time the plaintiffs applied for a permit, EPA found that the applicants had not overcome the Guidelines' presumption that practicable alternatives to developing the wetlands property were available.

The Second Circuit upheld EPA's veto, holding that the Agency's so-called "market entry" theory, under which EPA considered the availability of alternative sites at the time the developer entered the market for the site instead of at the time it applied for a permit, was consistent with both the regulatory language and past practice,²⁶ and was not an unreasonable interpretation of the Guidelines.²⁷ The court concluded that any other interpretation would thwart the purpose of the regulations, which it found was "to create an incentive for developers to avoid choosing wetlands when they could choose an alternative upland site."²⁸

When evaluating alternatives, the Corps has a duty to consider the purpose of the

¹⁹EPA's regulation, 40 C.F.R. § 125.63, requires the applicant to secure a determination from the state agency responsible for wasteland allocations to this effect. See § 13:31.

²⁰Plaintiff's Memorandum of Points and Authorities in Support of Plaintiff's Motion for Preliminary Injunction at 2, *Nat'l Audubon Soc'y v. Hartz Mountain Dev. Corp.*, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20724 (D.N.J. Oct. 24, 1983); see also Plaintiff's Exhibit G at 2.

²¹40 C.F.R. § 230.10(a)(3).

²²*Nat'l Audubon Soc'y v. Hartz Mountain Dev. Corp.*, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20724, 49, 52, 53, 55, 56, 57, 85, 86 (D.N.J. Oct. 24, 1983).

²³*Nat'l Audubon Soc'y v. Hartz Mountain Dev. Corp.*, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20724, 91 (D.N.J. Oct. 24, 1983).

²⁴*Nat'l Audubon Soc'y v. Hartz Mountain Dev. Corp.*, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20724, 88, 89 (D.N.J. Oct. 24, 1983).

²⁵*Bersani v. Robichaud*, 850 F.2d 36, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20874 (2d Cir. 1988), *cert. denied sub nom. Bersani v. EPA*, 489 U.S. 1089 (1989).

²⁶*Bersani v. Robichaud*, 850 F.2d 36, 44–45, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20874 (2d Cir. 1988), *cert. denied sub nom. Bersani v. EPA*, 489 U.S. 1089 (1989).

²⁷*Bersani v. Robichaud*, 850 F.2d 36, 45–46, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20874 (2d Cir. 1988), *cert. denied sub nom. Bersani v. EPA*, 489 U.S. 1089 (1989).

²⁸*Bersani v. Robichaud*, 850 F.2d 36, 44, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20874 (2d Cir. 1988),

project.²⁹

If an alternative is unreasonably expensive, it is not a reasonable alternative. The Corps intends to “consider those alternatives which are reasonable in terms of the overall scope/cost of the proposed project.”³⁰ A project’s purpose must be sufficiently defined to allow the Corps to analyze alternatives.³¹ But an applicant cannot define the purpose of a project so narrowly as to foreclose all alternatives.³²

The second Guidelines restriction provides that a discharge permit may not be issued if the proposed activity would, individually or collectively, cause or contribute to significant degradation of the nation’s waters.³³ The term “significant” is described in the Preamble:

Section 230.10(c) provides that discharges are not permitted if they will have significantly adverse effects on various aquatic resources. In this context, “significant” and “significantly” mean more than “trivial,” that is, significant in a conceptual rather than a statistical sense. Not all effects which are statistically significant in the laboratory are significantly adverse in the field.³⁴

The Guidelines provide that “[f]indings of significant degradation shall be based upon appropriate factual determinations, evaluations, and tests.”³⁵ Compliance with the restriction may be determined by procedures “appropriate” to the circumstances of the proposal.³⁶

Evaluating significant degradation in practice involves the sometimes quantitative comparison of “before” and “after.” In *Hartz Mountain*, for example, the Corps derived a numerical score for the pre-project wetland values on the site and another for the wetland values predicted for the site after completion of the entire project including all mitigation and enhancement efforts.³⁷ The Corps compared the two scores and determined that the “degradation” was not “significant.”³⁸

In *Hartz Mountain*, the wetlands at issue were the severely degraded Hackensack meadowlands in northern New Jersey. The Corps’ evaluation of the pre-project values was based on a consensus reached by a team of experts.³⁹ Each expert evaluated the wetlands present functional abilities in terms of eleven factors, including

cert. denied sub nom. Bersani v. EPA, 489 U.S. 1089 (1989).

²⁹Greater Yellowstone Coal. v. Flowers, 359 F.3d 1257, 58 Env’t Rep. Cas. (BNA) 1008, 34 Env’tl. L. Rep. 20019 (10th Cir. 2004).

³⁰Guidelines Preamble, “Regulation versus Guidelines,” 45 Federal Register 85336 (December 24, 1980).

³¹Sierra Club v. Flowers, 423 F. Supp. 2d 1273, 62 Env’t Rep. Cas. (BNA) 1265 (S.D. Fla. 2006), order supplemented, 495 F. Supp. 2d 1188, 65 Env’t Rep. Cas. (BNA) 2082 (S.D. Fla. 2007), *vacated*, 526 F.3d 1353, 66 Env’t Rep. Cas. (BNA) 1904 (11th Cir. 2008).

³²Nat’l Wildlife Federation v. Whistler, 27 F.3d 1341, 1346, 39 Env’t Rep. Cas. (BNA) 1090, 24 Env’tl. L. Rep. 21609 (8th Cir. 1994).

³³40 C.F.R. § 230.10(c).

³⁴45 Fed. Reg. 85343 to 85344 (1980).

³⁵40 C.F.R. § 230.10(c).

³⁶40 C.F.R. § 230.10(c).

³⁷Nat’l Audubon Soc’y v. Hartz Mountain Dev. Corp., 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20724, 58, 59, 61–67 (D.N.J. Oct. 24, 1983).

³⁸Nat’l Audubon Soc’y v. Hartz Mountain Dev. Corp., 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20724, 66–67 (D.N.J. Oct. 24, 1983). In *Hartz Mountain*, the Corps applied with modifications the methodology set forth in Reppert, Wetlands Values, Concepts and Methods for Wetlands Evaluation (1979). Nat’l Audubon Soc’y v. Hartz Mountain Dev. Corp., 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20724, 58 (D.N.J. Oct. 24, 1983).

³⁹Nat’l Audubon Soc’y v. Hartz Mountain Dev. Corp., 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20724, 58 (D.N.J. Oct. 24, 1983).

wildlife habitat, pollution control, sediment trapping, and aesthetics.⁴⁰ The record showed that the wetlands were highly stressed and many of the “present” values selected were low.⁴¹ Consequently, the Corps found no “significant degradation.”⁴²

The Guidelines require consideration of the significant degradation attributable to the individual effects of the proposed activity and also to the cumulative effects on the aquatic ecosystem of other “known and/or probable” activities.⁴³ “Cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill materials.”⁴⁴ In evaluating the significance of cumulative impacts, the permitting authority must assess “the probable impacts of other activities [on] the ecosystems of concern.”⁴⁵

The third important Guidelines restriction provides that a § 404 permit may not be issued unless “appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem.”⁴⁶ “Aquatic ecosystem” means “waters of the United States, including wetlands, that serve as habitat for interrelated and interacting communities and populations of plants and animals.”⁴⁷ EPA and the Corps have entered into a MOA to clarify the policies and procedures that they will use to determine the appropriate type and level of mitigation necessary.⁴⁸ The three general types of mitigation are avoidance, minimization, and compensatory mitigation.⁴⁹ “The term ‘minimize’ indicate[s] that all reasonable reduction in impact be obtained. As indicated by the ‘appropriate and practicable’ provision, steps which would be unreasonably costly or would be infeasible or which would accomplish only inconsequential reductions in impact

⁴⁰Nat'l Audubon Soc'y v. Hartz Mountain Dev. Corp., 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20724, 84 (D.N.J. Oct. 24, 1983).

⁴¹See Nat'l Audubon Soc'y v. Hartz Mountain Dev. Corp., 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20724, 58–67 (D.N.J. Oct. 24, 1983) (discussion of the Corps' “present” value methodology).

⁴²For a discussion of the appropriateness of this approach, see Ferretti, *Restoring the Nation's Wetlands*, 1 Pace Env'tl. L. Rev. 105 (1983).

⁴³40 C.F.R. §§ 230.1, 230.11(a), (b), (c), (e), (g).

⁴⁴40 C.F.R. § 230.11(g).

⁴⁵40 C.F.R. § 230.1(c).

⁴⁶40 C.F.R. § 230.10(d). Subpart H, 40 C.F.R. §§ 230.70 to 230.77, lists some of the actions that may be undertaken to minimize the adverse effects of discharges of dredged or fill material. These sections involve the location of the discharge, controlling the material after discharge, the method of dispersion, the choice of technology, the effect on plant and animal populations, and the effects on human use. For example, 40 C.F.R. § 230.70(a) to (c) provides:

The effects of the discharge can be minimized by the choice of the disposal site. Some of the ways to accomplish this are by: (a) Locating and confining the discharge to minimize smothering of organisms; (b) Designing the discharge to avoid a disruption of periodic water inundation patterns; (c) Selecting a disposal site that has been used previously for dredged material discharge;

and 40 C.F.R. § 230.75(a) to (c) provides:

Minimization of adverse effects on populations of plants and animals can be achieved by: (a) Avoiding changes in water current and circulation patterns which would interfere with the movement of animals; (b) Selecting sites or managing discharges to prevent or avoid creating habitat conducive to the development of undesirable predators or species which have a competitive edge ecologically over indigenous plants or animals; (c) Avoiding sites having unique habitat or other value, including habitat of threatened or endangered species.

⁴⁷40 C.F.R. § 230.3(c).

⁴⁸EPA, Memorandum of Agreement: The Determinations of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines (Feb. 6, 1990), <http://water.epa.gov/lawsregs/guidance/wetlands/mitigate.cfm>.

⁴⁹EPA, Memorandum of Agreement: The Determinations of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines (Feb. 6, 1990), <http://water.epa.gov/lawsregs/guidance/wetlands/mitigate.cfm>.

need not be taken.”⁵⁰

The final Guidelines restriction on discharge is designed to ensure that discharges under § 404 do not violate certain other federal or state statutes, such as those involving sanctuaries, endangered species, coastal zones, and discharges of toxics.⁵¹

In *Environmental Defense v. U.S. Army Corps of Engineers*,⁵² the U.S. District Court for the District of Columbia addressed the three Guidelines restrictions described above. The case concerned a permit issued by the Corps for a flood control project on the Mississippi River. The Corps relied on a number of environmental studies to support the project plan, including two Revised Environmental Impact Statements (REIS) and a subsequent Record of Decision (ROD). A citizen group challenged the permit in part on grounds that the Corps’ REIS and ROD provided insufficient support for the Corps’ conclusion that the plan would fully mitigate impacts to fisheries’ habitat. The court agreed, adding that the Corps’ fish mitigation model appeared to be an exercise in “result-oriented decision-making.” The court held that the Corps’ scientifically unsound analysis was in violation of National Environmental Policy Act and that the Corps’ fish mitigation proposal was arbitrary and capricious in violation of the Administrative Procedures Act and the CWA. It enjoined the Corps from proceeding with the project and ordered the Corps to deconstruct the portion of the project that was already built.

§ 13:109 Section 404 permit program and administration—Permit decision-making issues

Although the Corps is required to base its § 404 decisions on the Guidelines, its regulatory approach has been to include the Guidelines evaluation within the framework of its “public interest review” standard developed initially to implement the Rivers and Harbors Act permit program, although compliance with the Guidelines is the primary criterion.¹ In *Fox Bay Partners v. United States Corps of Engineers*,² the court determined that the Corps may look not only at the direct impact of the discharges but at the entire impact of a proposed project when considering whether to grant a CWA § 404 permit.

⁵⁰45 Reg. 85344 (1980).

⁵¹The statutory violation provision specifies at 40 C.F.R. § 230.10(b)(1) to (4):

(b) No discharge of dredged or fill material shall be permitted if it: (1) Causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable State water quality standard; (2) Violates any applicable toxic effluent standard or prohibition under § 307 of the Act; (3) Jeopardizes the continued existence of species listed as endangered or threatened under the Endangered Species Act of 1983, as amended, or results in likelihood of the destruction or adverse modification of a habitat which is determined by the Secretary of Interior or Commerce, as appropriate, to be critical habitat under the Endangered Species Act of 1973, as amended. If an exemption has been granted by the Endangered Species Committee, the terms of such exemption shall apply in lieu of this subparagraph; (4) Violates any requirement imposed by the Secretary of Commerce to protect any marine sanctuary designated under Title III of the Marine Protection, Research, and Sanctuaries Act of 1972.

⁵²Envtl. Def. v. U.S. Army Corps of Eng’rs, 515 F. Supp. 2d 69 (DDC 2007), *appeal dismissed* 2008 WL 4562202 (D.C. Cir. Sep. 22, 2008), and *appeal dismissed*, 2008 WL 4561439 (D.C. Cir., Oct. 10, 2008).

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¹See 33 C.F.R. § 320.4; 33 C.F.R. § 323.6. The public interest will not authorize issuance of a permit the denial of which would be a consequence of application of the Guidelines, but a permit authorizable under the Guidelines may nevertheless be denied on the basis of public interest factors.

²*Fox Bay Partners v. U.S. Corps of Eng’rs*, 831 F. Supp. 605, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20671 (N.D. Ill. 1993) (Corps’ review of a permit application for a marina and associated facilities included consideration of the oversaturation of boat traffic that project would cause).

In addition, the Corps must comply with the National Environmental Policy Act,³ obtain a water quality certification, under § 401 of the Act, from the affected State,⁴ and must, in areas covered by a coastal zone management plan, secure a consistency determination from the appropriate agency before issuing a final § 404 permit.

The Corps has made a number of interpretive policy judgments that affect its permit process. It has taken a restrictive view of the scope of its obligation under NEPA and has generally been successful in looking only at the impacts of the specific activity for which a permit has been sought, rather than the broader impacts of the larger project of which the permit activity is a part.⁵ The Corps also does not typically question the purpose and need for private activities for which permits are sought in its NEPA analysis. A proposal to codify that position was opposed by EPA in 1984.⁶

The Corps has historically been willing to accept mitigation efforts by permit applicants as a trade-off for wetland areas damaged or destroyed by permitted activities. In other words, the Corps was willing to grant a permit to fill a wetland area if the permit applicant was able to create habitat of equal or greater value elsewhere. In one of its rare § 404(c) vetoes, EPA vetoed a permit in May 1986 that had been issued by the Corps for construction of a shopping mall in Attleboro, Massachusetts.⁷ When EPA does invoke its authority under 404(c), it is generally after the Corps has made a decision to issue a permit.⁸ However, EPA has used its authority under 404(c) to proactively assess and initiate proceedings that would restrict the discharge of mining wastes into waters of the United States.⁹

In vetoing the Attleboro permit, the Agency stated that it encouraged mitigation

³The Corps' NEPA regulations are published at 33 C.F.R. Part 230.

⁴At least one state, Wisconsin, has utilized its § 401 authority to effectively nullify certain types of nationwide permits. See 33 C.F.R. § 330.5 (notes).

⁵See, e.g., *Wetlands Action Network v. U.S. Army Corps of Eng'rs*, 222 F.3d 1105, 51 Env't Rep. Cas. (BNA) 1106, 47 Fed. R. Serv. 3d 1417, 31 Env'tl. L. Rep. 20051 (9th Cir. 2000), *abrogated on other grounds by* *Wilderness Soc'y v. U.S. Forest Service*, 630 F.3d 1173, 72 Env't Rep. Cas. (BNA) 1629, 78 Fed. R. Serv. 3d 680 (9th Cir. 2011) (stating that it was proper for the Corps to consider only the environmental impact of a project on federally delineated wetlands and not consider the impact on upland areas); *Save Our Wetlands v. Sands*, 711 F.2d 634, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20851 (5th Cir. 1983); *Save the Bay v. Corps of Eng'rs*, 610 F.2d 322, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20185 (5th Cir. 1980); *Winnebago Tribe of Neb. v. Ray*, 621 F.2d 269, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20243 (8th Cir. 1980). *But cf.* *Sierra Club v. Sec'y of Transp.*, 779 F.2d 776, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20487 (1st Cir. 1985); *Colorado River Indians v. Marsh*, 605 F. Supp. 1425 (C.D. Col. 1985). For a full explanation of the Corps' view, not shared by EPA, see 49 Fed. Reg. 1387 (1984). On a related front, one court has held that the Corps improperly required an applicant to include a fully developed forty-four acre plot in its application for permission to fill a contiguous, partially developed thirteen-and-one-half acre parcel on the grounds that the two parcels were clearly not the "same project" within the meaning of 33 C.F.R. § 325.1(d)(2) since they were developed separately. *Russo Dev. Corp. v. Thomas*, 735 F. Supp. 631, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20290 (D.N.J. 1989).

⁶See 46 Fed. Reg. 18027 (1981) (discussing Corps initial policy regarding alternatives); 49 Fed. Reg. 1397 (1984) (proposal); 50 Fed. Reg. 12629 (1985) (EPA opposition).

⁷The veto was upheld in *Bersani v. Deland*, 18 Env'tl. L. Rep. (Env'tl. L. Inst. 20001 (N.D.N.Y. 1987); see also *Bersani v. Deland*, 640 F. Supp. 716 (D. Mass. 1986) and *Galleria Group v. Deland*, 618 F. Supp. 1179 (D.D.C. 1985) (each dealing with procedural aspects).

⁸See e.g. *Mingo Logan Coal Co. v. U.S. E.P.A.*, 714 F.3d 608, 76 Env't. Rep. Cas. (BNA) 1213 (D.C. Cir. 2013) (holding that EPA did not exceed its authority under CWA § 404(c) when it invalidated an existing U.S. Army Corps of Engineer permit authorizing a mining company to discharge fill material from its mountaintop coal mine into two nearby streams).

⁹U.S. EPA, *An Assessment of Potential Mining Impacts of Salmon Ecosystems of Bristol Bay, Alaska* (2014), available at https://www.epa.gov/sites/production/files/2014-07/documents/pebble_pd_071714_final.pdf. However, in *Pebble Limited Partnership v. EPA*, the district court held that EPA's decision to initiate 404(c) proceedings was not "final agency action" subject to judicial review. 155 F. Supp. 3d 1000 (D. Alaska 2014), *aff'd*, 604 Fed. Appx. 623 (9th Cir. 2015).

“for unavoidable losses of wetlands where the project did not cause or contribute to significant degradation of waters of the United States,” leaving the door open for mitigation where, for example, poor-quality wetlands were impacted.

The *Attleboro Mall* matter also was a forum for EPA to announce its views on another issue relating to Corps permitting practices. The Guidelines provide that a project that is not water dependent may not receive a § 404 permit unless there is a showing by the applicant that there are no upland alternatives available to meet its objective.¹⁰ The Corps had been willing to assume the nonexistence of upland alternatives where the application involved a private development and the developer did not own upland areas suitable for the activity. In the *Attleboro Mall* decision, EPA made it clear that the regulatory presumption that upland alternatives exist is not rebutted merely by virtue of the fact that the applicant owns no such areas—it is the activity rather than a specific applicant’s undertaking of the activity that is the focus of the inquiry.¹¹

On November 15, 1989, EPA and the Corps entered into a long-awaited Memorandum of Agreement (MOA) on the subject of mitigation.¹² For the first time, the agencies explicitly stated their commitment to “no net loss” of wetlands¹³ and mandated the use of “sequencing” in evaluating mitigation requirements applicable to any given project.¹⁴

Sequencing—the approach successfully advocated by EPA in the *Attleboro Mall* case—involves the sequential application of the requirements that impacts be avoided, unavoidable impacts be minimized, and remaining unmitigated impacts be compensated.¹⁵ Although the MOA allows for some exceptions to sequencing,¹⁶ the agencies took a firm stand on the basic requirements that (1) no discharge will be permitted if there is a practicable alternative that would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental impacts; (2) compensatory mitigation may not be used as a method to reduce environmental impacts; and (3) appropriate and practicable compensatory mitigation will be required for those unavoidable adverse impacts remaining after all appropriate and practicable minimization has been accomplished.

The MOA also formally announces several other important policies, among them

¹⁰40 C.F.R. § 230.10(a)(3).

¹¹See also *Bersani v. Robichaud*, 850 F.2d 36, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20874 (2d Cir. 1988), *cert. denied sub nom. Bersani v. EPA*, 489 U.S. 1089 (1989) (applicant must show no practicable alternatives existed at time it entered market for site as well as at time it applied for permit).

¹²Due to considerable opposition from the regulated community, the effective date of the MOA was delayed several times pending the completion of essentially cosmetic revisions. The final version was published at 55 Fed. Reg. 9210 (Mar. 12, 1990). For a fairly detailed discussion of the genesis and significance of the MOA by the Assistant to the General Counsel, Department of the Army, see “The Army-EPA Mitigation Agreement: No Retreat from Wetlands Protection,” 20 Env’tl. L. Rep. (Env’tl. L. Inst.) News & Analysis 10337.

¹³The Domestic Policy Council’s Inter-Agency Task Force on Wetlands has been formally tasked by the President to develop proposals and recommendations for attaining the goal of no net loss, and EPA and the Corps are careful to state in the MOA—somewhat disingenuously, perhaps—that neither the § 404 program nor the MOA establishes a no-net-loss policy for the nation’s wetlands. See 55 Fed. Reg. at 9210.

¹⁴55 Fed. Reg. at 9211 to 9212.

¹⁵Adoption of the sequencing approach constitutes a rejection of the trade-off or “buy-down” method used by some Corps districts pursuant to which permits were issued for projects despite the existence of a less damaging alternative.

¹⁶See 55 Fed. Reg. at 9212 (“[i]t may be appropriate to deviate from the sequence when EPA and the Corps agree the proposed discharge is necessary to avoid environmental harm . . . or . . . agree that the proposed discharge can reasonably be expected to result in environmental gain or insignificant environmental losses”).

presumptions in favor of on-site over off-site compensatory mitigation, in-kind over out-of-kind mitigation, and wetlands restoration over wetlands creation.¹⁷ The MOA also expresses tentative approval of the concepts of mitigation banking (the creation or restoration of wetlands in advance of their use as credit for development)¹⁸ and mitigation monitoring (to be imposed as a permit condition and used as an aid in enforcement of mitigation conditions).¹⁹

Finally, and perhaps most significantly, the MOA provides that “[i]n the absence of more definitive information on the functions and values of specific wetlands sites, a minimum of 1 to 1 acreage replacement may be used as a reasonable surrogate for no net loss of functions and values.”²⁰ Although there is some qualifying language to the effect that this ratio may not be appropriate and practicable in every case,²¹ and that the replacement requirements may be greater or less depending on the functional value of the impacted area and the likelihood of success associated with the mitigation proposal,²² the MOA nevertheless announces an explicit commitment to, and establishes a specific method for, implementing a goal of no net loss of wetlands.

In 2008, the EPA finalized regulations governing methods of mitigation that were explored in the MOA.²³ To satisfy permit mitigation requirements, the new regulations allow for “mitigation banking” (restoring, establishing or enhancing aquatic resources in advance in exchange for credit that can be applied toward future projects), on-site and off-site “permittee-responsible mitigation” (restoring, establishing or enhancing aquatic resources to mitigate a permittee’s responsibility with regard to a specific project), and “in-lieu fee” mitigation (restoring, establishing or enhancing aquatic resources through funds paid to a government or nonprofit natural resources management entity).²⁴

¹⁷55 Fed. Reg. at 9212.

¹⁸55 Fed. Reg. at 9212.

¹⁹55 Fed. Reg. at 9213.

²⁰55 Fed. Reg. at 9213.

²¹The final version of the MOA includes the following hotly contested footnote, which was added after certain government and private interests expressed concern that the MOA would require one-for-one acreage replacement in areas of the country that have a high proportion of wetlands, such as Alaska:

There are certain areas where, due to hydrological conditions, the technology for restoration or creation of wetlands may not be available at present, or may otherwise be impracticable. In addition, avoidance, minimization and compensatory mitigation may not be practicable where there is a high proportion of land which is wetlands.

55 Fed. Reg. 9213, n.7. Although this language may fairly be viewed as a mere reminder that the Guidelines require mitigation only when it is “appropriate and practicable,” the ultimate significance of these statements, as with the rest of the policies enunciated in the MOA, will depend on the manner in which they are implemented in particular cases. A challenge to the MOA based on EPA’s and the Corps’ failure to follow notice-and-comment rulemaking procedures in issuing it was rejected as not ripe in *Municipality of Anchorage v. Reilly*, 32 Env’t Rep. Cas. (BNA) 1199, 21 Env’tl. L. Rep. 20119, 1990 WL 260246 (D. Alaska 1990), *on reconsideration*, 32 Env’t Rep. Cas. (BNA) 2007, 1991 WL 12801 (D. Alaska 1991) and *judgment aff’d*, 980 F.2d 1320, 37 Env’t Rep. Cas. (BNA) 1017, 23 Env’tl. L. Rep. 20302 (9th Cir. 1992).

²²55 Fed. Reg. at 9213.

²³See 73 Fed. Reg. 19594 (Apr. 10, 2008); 40 C.F.R. §§ 230.91 to 230.98.

²⁴See *Nat’l Mitigation Banking Ass’n v. U.S. Army Corps of Eng’rs*, 2007 WL 495245, No. 06-cv-2820 (N.D. Ill. Feb. 14, 2007) (upholding in-lieu mitigation fees); *Sierra Club, Inc. v. St. Johns River Water Management District*, 81 Env’t. Rep. Cas. (BNA) 2065, 2015 WL 6814566 (M.D. Fla. 2015) (holding that Sierra Club stated a claim for relief and had standing where it alleged that the owner of mitigation bank proposed to develop land that was designated for preservation).

§ 13:110 Procedural matters¹

The Corps regulatory program is administered within the Civil Works division, and initial permit decisions are the province of the District Engineer. Permits are ordinarily processed by a permitting unit, and enforcement managed by an enforcement unit within a regulatory functions branch. Although the Corps maintains staff biologists and other professionals in its district offices, the number and expertise of these employees varies from district to district. In addition, many districts cooperate closely with technical personnel from the EPA regional office, from the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service, and, occasionally, from other agencies.² Since § 404 permits are federal licensing activities and state certification is, therefore, required under § 401 of the Act, state environmental agencies are always included in the process and can prohibit issuance of a permit that is inconsistent with a state environmental regulation, such as a coastal zone management regulation.

The Corps permit processing is done by means of informal rulemaking that combines a notice-and-comment process with informal, legislative-type hearings.³ The informal process has been upheld as consistent with the language of the Act and the legislative history of § 404.⁴

Since the Corps is not exempt from compliance with the National Environmental Policy Act,⁵ its permitting process must make room for preparation of an EIS or a negative declaration.⁶ The Corps maintains NEPA compliance regulation codified at 33 C.F.R. Part 230 and Appendix B. Much of the litigation under the National Environmental Policy Act has involved Corps permit decisions.

Where the “discharge” involves dredged material being dumped into the ocean, the provisions of the Marine Protection Research and Sanctuaries Act affect the Corps proceedings.⁷

§ 13:111 Enforcement—Penalties and actions

Section 404 is a fairly self-contained regulatory program within the framework of the Act. As such, enforcement is not exclusively pursuant to § 309 of the Act, but rather stems both from § 309, which provides authority for EPA to enforce the § 404 program directly, and from § 404(s), a separate grant of enforcement authority to the Corps, although the two provisions contain similar civil penalties.¹ Civil penal-

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¹The following sections were written by **Donald W. Stever**.

²EPA, as discussed heretofore, has a significant direct role in § 404. The other two agencies are brought into the process primarily via the Fish and Wildlife Coordination Act and the National Environmental Policy Act. The Corps regulations require these agencies to be included in the administrative process and provides them with the power to force decisions to higher levels within the Army. *See generally* 33 C.F.R. §§ 320.3, 325.2, 325.4, 325.8.

³*See generally* 33 C.F.R. § 325.3 and Part 327.

⁴*Buttrey v. United States*, 690 F.2d 1170, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20085 (5th Cir. 1982). *See also* *AJA Assocs. v. U.S. Army Corps of Eng'rs*, 817 F.2d 1070, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20657 (3d Cir. 1987) (holding that a hearing is not mandatory in the absence of a request for one).

⁵Section 511(c)(1) exempts § 402 permits and certain other actions by EPA, but makes no mention of the Corps.

⁶In NEPA parlance, a negative declaration involves a “finding of no significant impact” (FONSI).

⁷*See* § 13:132.

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¹Civil penalties are \$25,000 per day. *See* CWA § 404(s)(4), 33 U.S.C.A. § 1344(s)(4); CWA § 309(c)(1), (d), 33 U.S.C.A. § 1319(c)(1), (d).

ties are calculated pursuant to a judicial “civil penalty policy” found in § 404(s)(4),² which sets forth general considerations for calculating penalties.

In 1989, the Corps and EPA entered into an Enforcement Memorandum of Agreement allocating responsibility for enforcing Section 404 between the agencies.³ Pursuant to the MOA, the Corps will conduct most initial field investigations. Once the violation is investigated, the lead enforcement agency will complete the enforcement action. The EPA will act as lead enforcement agency when a violation involves repeat violators, flagrant violations, when EPA requests a case, and where the Corps recommends that EPA take the case.⁴ The Corps will act as lead enforcement agency in all other enforcement actions.⁵

Section 404 initially contained separate criminal penalty provisions that were different from those contained in § 309 in several respects. The separate sections were repealed in 1987, and subsequently § 404-related crimes are lumped in with other Clean Water Act crimes under § 309(c).⁶

Injunctive or civil penalty relief is available on application by either the Corps or EPA⁷ and is discretionary.⁸ Although it has generally been assumed that the citizen suit provision of the CWA, § 505, affords private plaintiffs an opportunity for direct enforcement of § 404,⁹ the statutory language of § 505 does not clearly provide such a right. *California v. Sierra Club*,¹⁰ which held that there is no implied private right of action for citizens to enforce §§ 9 or 10 of the Rivers and Harbors Act, and *Middlesex County v. National Sea Clammers Association*,¹¹ in which the Supreme Court refused to imply private enforcement rights not specifically provided under the CWA, are not helpful to a claim that § 505 impliedly encompasses citizen suits to enforce § 404. Nevertheless, the court in *National Wildlife Federation v. Hanson*¹² found such a right, ruling that a citizen challenge to a Corps determination not to regulate wetlands was properly brought under § 505(a)(2) because the Corps¹³ has a nondiscretionary duty to regulate dredged or fill material and to make reasoned

²33 U.S.C.A. § 1344(s)(4), amended by Pub. L. No. 100-4, § 313(d), 101 Stat. 45–46 (1987).

³Memorandum of Agreement between the Department of the Army and the EPA Concerning Federal Enforcement of the Section 404 Program of the CWA (1989), <http://www.usace.army.mil/Portals/2/docs/civilworks/mous/enfmoa.pdf>.

⁴Memorandum of Agreement between the Department of the Army and the EPA Concerning Federal Enforcement of the Section 404 Program of the CWA (1989), <http://www.usace.army.mil/Portals/2/docs/civilworks/mous/enfmoa.pdf>.

⁵Memorandum of Agreement between the Department of the Army and the EPA Concerning Federal Enforcement of the Section 404 Program of the CWA (1989), <http://www.usace.army.mil/Portals/2/docs/civilworks/mous/enfmoa.pdf>.

⁶The fact that criminal liability is thereby predicated on the agency-derived definitions of “wetlands” and “navigable waters” does not represent an unconstitutional delegation of congressional power. *United States v. Mills*, 817 F. Supp. 1546, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 21096 (N.D. Fla. 1993), *aff’d*, 36 F.3d 1052, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 20278 (11th Cir. 1994), *cert. denied*, 115 S. Ct. 1966 (1995).

⁷See CWA §§ 309(b), 404(s)(3), 33 U.S.C.A. §§ 1319(b), 1344(s)(3).

⁸See *United States v. Malibu Beach, Inc.*, 711 F. Supp. 1301, 29 Env 1920 (D.N.J. 1989); *Harmon Cove Condominium Ass’n v. Marsh*, 815 F.2d 949, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20747 (3d Cir. 1987).

⁹See Want, *Federal Wetlands Law: The Cases and the Problems*, 8 Harv. Env’tl. L. Rev. 1, 24 (1984).

¹⁰*California v. Sierra Club*, 451 U.S. 287, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20357 (1981).

¹¹*Middlesex County v. Nat’l Sea Clammers Ass’n*, 453 U.S. 1, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20684 (1981).

¹²*Nat’l Wildlife Fed’n v. Hanson*, 859 F.2d 313, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 21509 (4th Cir. 1988).

¹³The Fourth Circuit also rejected the government’s argument that § 505 authorizes suits only

determinations concerning its jurisdiction.¹⁴ Indigent citizen plaintiffs may proceed in forma pauperis under the CWA.¹⁵

The Water Quality Act of 1987 added administrative penalties to § 404 through the addition of § 309(g)(1). The new provision authorizes either EPA or the Corps to levy an administrative penalty upon a finding that a permit holder has violated a “limitation” or “condition” contained in a § 404 permit. EPA’s § 404 penalty authority is limited to violations of state-issued permits, while the Corps authority includes only violations of federally issued permits. The penalty scheme is identical to the one employed for violations of NPDES permits, including applicability of statutory penalty policy factors.¹⁶ The Conference Report states that the two agencies are to work out the program interface in an interagency agreement.¹⁷

Civil liability in the event of noncompliance with the statute is strict.¹⁸ Defendants are responsible whether or not they were aware of the requirements of the law.¹⁹ Reliance on a contractor or other person to secure necessary permits is not a defense, and both an owner and a contractor may be liable for the latter’s placement of fill in a wetland area without a permit.²⁰

The Supreme Court decided in *Tull v. United States*²¹ that a jury trial must be afforded to defendants as to the question of their liability in Clean Water Act cases in which a claim for civil penalties is made.

Section 309(c) imposes criminal liability on any “responsible corporate officer” whose conduct satisfies the requisite scienter requirements. The government has occasionally sought to impose personal civil liability on individual officers or shareholders, although some courts have been reluctant to go behind the corporate shell.²²

against EPA, not the Corps, finding that both the Corps and EPA are responsible for the administration of § 404 and further upheld the lower court’s award of attorney’s fees to the plaintiff. *Nat’l Wildlife Fed’n v. Hanson*, 859 F.2d 313, 18 Env’t. L. Rep. (Env’t. L. Inst.) 21509 (4th Cir. 1988). *Contra* Alliance to Save the Mattaponi v. U.S. Army Corps of Eng’rs, 515 F. Supp. 2d 1 (2007) (rejecting citizen groups’ argument that § 505 authorizes suit against the Corps in absence of an express statutory provision to that effect); *Preserve Endangered Areas of Cobb’s History, Inc. v. U.S. Army Corps of Eng’rs*, 87 F.3d 1242, 26 Env’t. L. Rep. (Env’t. L. Inst.) 21449 (11th Cir. 1996) (same); *Cascade Conservation League v. M.A. Segale, Inc.*, 921 F. Supp. 69226, 26 Env’t. L. Rep. 21164 (W.D. Wash. 1996) (same).

¹⁴*But see* *Golden Gate Audubon Soc’y, Inc. v. U.S. Army Corps of Eng’rs*, 717 F. Supp. 1417, 28 ERC 1007, 18 Env’t. L. Rep. (Env’t. L. Inst.) 21, 401 (N.D. Cal. 1988) (court lacks jurisdiction under § 505(a)(2) to review Corps’ decision not to exercise jurisdiction over filling of wetlands area, but does have jurisdiction under Administrative Procedure Act to determine if Corps abused its discretion). *See also* *Avoyelles Sportsmen’s League, Inc. v. Marsh*, 715 F.2d 897, 13 Env’t. L. Rep. (Env’t. L. Inst.) 20942 (5th Cir. 1983); *Walther v. United States*, 2015 WL 9700347 (D. Alaska 2015) (declining to follow *Hanson* and finding the court lacked subject-matter jurisdiction in a citizen suit against the Corps).

¹⁵*Tannenbaum v. United States*, 1993 WL 243399, No. 93 C 3595 (N.D. Ill. 6–30–93).

¹⁶*See* § 13:121.

¹⁷H.R. Rep. No. 1004, 99th Cong., 2d Sess. 139 (1986).

¹⁸*See* *In re Oil Spill by the Oil Rig “Deepwater Horizon” in the Gulf of Mexico, on April 20, 2010*, 148 F. Supp. 3d 563, 81 Env’t. Rep. Cas. (BNA) 2205, 2015 A.M.C. 2921 (E.D. La. 2015) (noting the purpose of the penalty is to place the financial burden for achieving and maintaining clean water on the polluting party and thus “liability for a civil penalty is strict, arising irrespective of knowledge, intent, or fault”).

¹⁹*See* *United States v. Board of Trustees, Fla. Cmty. Coll.*, 531 F. Supp. 267, 274, 12 Env’t. L. Rep. (Env’t. L. Inst.) 20391, 20393 (S.D. Fla. 1981); *United States v. Bradshaw*, 541 F. Supp. 880, 883, 12 Env’t. L. Rep. (Env’t. L. Inst.) 20629, 20630 (D. Md. 1981).

²⁰*United States v. Board of Trustees, Fla. Cmty. Coll.*, 531 F. Supp. 267, 12 Env’t. L. Rep. (Env’t. L. Inst.) 20391 (S.D. Fla. 1981).

²¹*Tull v. United States*, 481 U.S. 412, 107 S. Ct. 831, 17 Env’t. L. Rep. (Env’t. L. Inst.) 20667 (1987).

²²*See, e.g., United States v. Marks Dev. Corp.*, No. 79-2323-Civ-SMA (S.D. Fla. Jan. 15, 1982), *aff’d*

§ 13:112 Enforcement—Defenses

Defendants have tended to raise one of several defenses to § 404 enforcement actions. The most frequently raised defenses are that either the area involved or the actions of the defendant are not within § 404 jurisdiction.¹ Frequently the Corps will make a formal “jurisdictional determination” that is embodied in a loosely compiled administrative record. Landowners have ordinarily sought *de novo* jurisdictional review by federal district courts when the issue is raised either in defense of a government or citizen enforcement action² or in an action for declaratory judgment brought by the landowner to contest jurisdiction.³ The government has resisted such attempts, arguing that the Corps should be able to compile a wetlands determination, which is then subject to review on the record. The government’s position has met with a mixed judicial reception.⁴ Until recently there was a circuit split regarding whether a jurisdictional determination by the Army Corps is a final agency ac-

sub nom. United States v. Context-Marks Corp., 729 F.2d 1294 (11th Cir.1984). *But see* United States v. Iverson, 162 F.3d 1015, 29 Env’t Rep. Cas. (BNA) 1865, 22 Env’t L. Rep. 21148 (7th Cir. 1992), *reh’g granted, order vacated*, 975 F.2d 1554, 35 Env’t Rep. Cas. (BNA) 1328, 22 Env’t L. Rep. 21547 (7th Cir. 1992), *on reh’g*, 999 F.2d 256, 36 Env’t Rep. Cas. (BNA) 2098, 23 Env’t L. Rep. 21139 (7th Cir. 1993); Weiszmann v. District Eng’r, 526 F.2d 1302, 6 Env’t L. Rep. (Env’t L. Inst.) 20219 (5th Cir. 1976) (§ 10, RHA case); United States v. Holland, 373 F. Supp. 665, 4 Env’t L. Rep. (Env’t L. Inst.) 20710 (M.D. Fla. 1974); Avoyelles Sportsmen’s League, Inc. v. Marsh, 715 F.2d 897, 13 Env’t L. Rep. (Env’t L. Inst.) 20710 (5th Cir. 1983) (counterclaim). As to activity jurisdiction, see Avoyelles Sportsmen’s League, Inc. v. Marsh, 715 F.2d 897, 13 Env’t L. Rep. (Env’t L. Inst.) 20710 (5th Cir. 1983) (claim that cutting trees and windrowing them not a discharge of fill material rejected); United States v. Carter, Nos. 81-0981, 12 Env’t L. Rep. (Env’t L. Inst.) 20682 (S.D. Fla. 1982) (farming and silviculture exemption); United States v. Lambert, 695 F.2d 536, 13 Env’t L. Rep. (Env’t L. Inst.) 20436 (11th Cir. 1983) (incidental discharge); United States v. M.C.C. of Florida, Inc., 772 F.2d 1501, 23 Env’t Rep. Cas. (BNA) 1318, 3 Fed. R. Serv. 3d 49, 15 Env’t L. Rep. 21091 (11th Cir. 1985), *cert. granted, judgment vacated*, 481 U.S. 1034, 107 S. Ct. 1968, 95 L. Ed. 2d 809, 25 Env’t Rep. Cas. (BNA) 1984 (1987) (unsuccessful claim that “dredging by tugboat propeller,” whereby tugs dug up bottom sediments and moved them onto adjacent sea grass beds, not a discharge).

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¹With respect to area jurisdiction, see, e.g., Hoffman Homes, Inc. v. Administrator, U.S. E.P.A., 961 F.2d 1310, 34 Env’t Rep. Cas. (BNA) 1865, 22 Env’t L. Rep. 21148 (7th Cir. 1992), *reh’g granted, order vacated*, 975 F.2d 1554, 35 Env’t Rep. Cas. (BNA) 1328, 22 Env’t L. Rep. 21547 (7th Cir. 1992), *on reh’g*, 999 F.2d 256, 36 Env’t Rep. Cas. (BNA) 2098, 23 Env’t L. Rep. 21139 (7th Cir. 1993); Weiszmann v. District Eng’r, 526 F.2d 1302, 6 Env’t L. Rep. (Env’t L. Inst.) 20219 (5th Cir. 1976) (§ 10, RHA case); United States v. Holland, 373 F. Supp. 665, 4 Env’t L. Rep. (Env’t L. Inst.) 20710 (M.D. Fla. 1974); Avoyelles Sportsmen’s League, Inc. v. Marsh, 715 F.2d 897, 13 Env’t L. Rep. (Env’t L. Inst.) 20710 (5th Cir. 1983) (counterclaim). As to activity jurisdiction, see Avoyelles Sportsmen’s League, Inc. v. Marsh, 715 F.2d 897, 13 Env’t L. Rep. (Env’t L. Inst.) 20710 (5th Cir. 1983) (claim that cutting trees and windrowing them not a discharge of fill material rejected); United States v. Carter, Nos. 81-0981, 12 Env’t L. Rep. (Env’t L. Inst.) 20682 (S.D. Fla. 1982) (farming and silviculture exemption); United States v. Lambert, 695 F.2d 536, 13 Env’t L. Rep. (Env’t L. Inst.) 20436 (11th Cir. 1983) (incidental discharge); United States v. M.C.C. of Florida, Inc., 772 F.2d 1501, 23 Env’t Rep. Cas. (BNA) 1318, 3 Fed. R. Serv. 3d 49, 15 Env’t L. Rep. 21091 (11th Cir. 1985), *cert. granted, judgment vacated*, 481 U.S. 1034, 107 S. Ct. 1968, 95 L. Ed. 2d 809, 25 Env’t Rep. Cas. (BNA) 1984 (1987) (unsuccessful claim that “dredging by tugboat propeller,” whereby tugs dug up bottom sediments and moved them onto adjacent sea grass beds, not a discharge).

²See United States v. Akers, 651 F. Supp. 320, 17 Env’t L. Rep. (Env’t L. Inst.) 20702 (E.D. Cal. 1987).

³See Leslie Salt Co. v. United States, 660 F. Supp. 183, 17 Env’t L. Rep. (Env’t L. Inst.) 21006 (N.D. Cal. 1987).

⁴Compare Avoyelles Sportsmen’s League, Inc. v. Marsh, 715 F.2d 897, 13 Env’t L. Rep. (Env’t L. Inst.) 20942 (5th Cir. 1983) (review of COE wetlands determination on the administrative record) and Hoffman Group, Inc. v. U.S.E.P.A., 29 Env’t Rep. Cas. (BNA) 1180, 20 Env’t L. Rep. 20002 (N.D. Ill. 1989), *judgment aff’d*, 902 F.2d 567, 31 Env’t Rep. Cas. (BNA) 1409, 20 Env’t L. Rep. 20884 (7th Cir. 1990) (framing issue in terms of whether preenforcement review is available, held court may not review property owner’s challenge to § 404 administrative compliance order) with United States v. Akers, 15 Env’t L. Rep. (Env’t L. Inst.) 20243 (E.D. Cal. 1985), *aff’d*, 785 F.2d 814, 16 Env’t L. Rep. (Env’t L. Inst.) 20538 (9th Cir. 1986) (neither review on the record nor *de novo* trial appropriate, but COE to provide landowner with discovery into its methodology) and Leslie Salt Co. v. United States, 660 F. Supp. 183, 17 Env’t L. Rep. (Env’t L. Inst.) 20942 (N.D. Cal. 1987) (holding that a trial *de novo* is available on the jurisdictional issue when it is raised in a declaratory judgment proceeding or in defense of an enforcement action—apparently decided in ignorance of *Akers*, since the decision is not mentioned).

tion subject to judicial review.⁵ The Supreme Court in an 8-0 opinion recently upheld the Eighth Circuit's determination that a jurisdictional determination is a final agency action subject to judicial review.⁶

Defendants have also claimed estoppel on the grounds that Corps officials indicated that no permit was needed, though this has been mostly unsuccessful.⁷ Rarely, however, are defenses to liability successful. The principal issue litigated in wetland enforcement cases has been the remedy.

A very effective device utilized by the Corps is its refusal to process any permit applications involving related work until an outstanding violation of the law has been remedied.⁸ Thus, a marina developer who has placed unauthorized fill in a regulated area, whose project also involves dredging permits, may face significant delays in processing the dredging application unless the fill problem is remedied quickly.

Enforcement actions under the CWA are subject to the five year statute of limitations in 28 U.S.C.A. § 2462. The statute of limitations, however, does not begin to run until the enforcing party discovers, or through the use of reasonable diligence should have discovered, the violation, so this defense will rarely be successful.⁹

§ 13:113 Enforcement—Remedial issues and restoration plans

Once fill or dredged material has been discharged in violation of § 404, and the government initiates an enforcement action,¹ the primary issue becomes the nature of the remedy. The government ordinarily seeks a civil penalty and either restora-

⁵*Compare* Hawkes Co., Inc. v. U.S. Army Corps of Engineers, 782 F.3d 994, 999-1000, 80 Env't. Rep. Cas. (BNA) 1265 (8th Cir. 2015), cert. granted, 136 S. Ct. 615, 193 L. Ed. 2d 495 (2015) and *aff'd*, 136 S. Ct. 1807, 195 L. Ed. 2d 77, 82 Env't. Rep. Cas. (BNA) 1465 (2016) (finding that a jurisdictional determination is a the consummation of the Army Corps' decision-making process, and as such is a final agency action subject to judicial review) *with* Belle Co., L.L.C. v. U.S. Army Corps of Engineers, 761 F.3d 383, 394, 78 Env't. Rep. Cas. (BNA) 1933 (5th Cir. 2014), cert. denied, 135 S. Ct. 1548, 191 L. Ed. 2d 636 (2015) (finding that because a jurisdictional determination does not determine rights or obligations, it is not a final agency action and thereby is not subject to judicial review). The Supreme Court ultimately decided whether a jurisdictional determination is a final agency action subject to judicial review. *U.S. Army Corps of Engineers v. Hawkes Co., Inc.*, 136 S. Ct. 1807, 195 L. Ed. 2d 77, 82 Env't. Rep. Cas. (BNA) 1465 (2016).

⁶*U.S. Army Corps of Engineers v. Hawkes Co., Inc.*, 136 S. Ct. 1807, 195 L. Ed. 2d 77, 82 Env't. Rep. Cas. (BNA) 1465 (2016).

⁷*See generally* Want, *Federal Wetlands Law: The Cases and the Problems*, 8 Harv. Envtl. L. Rev. 1, 37-41 (1984); *see also* *United States v. Lewis*, 355 F. Supp. 1132, 3 Envtl. L. Rep. (Envtl. L. Inst.) 20500 (S.D. Ga. 1973) (§ 10 case); *United States v. Tull*, 615 F. Supp. 610, 20 Env't Rep. Cas. (BNA) 2198 (E.D. Va. 1983), *decision aff'd*, 769 F.2d 182, 24 Env't Rep. Cas. (BNA) 1495, 15 Envtl. L. Rep. 21061 (4th Cir. 1985), *judgment rev'd*, 481 U.S. 412, 17 Envtl. L. Rep. 20667 (1987).

⁸*See* 33 C.F.R. § 326.3. The Federal Circuit Court has held that the Corps' denial of a § 404 permit does not constitute a regulatory taking when the affected property is part of larger parcel of property that may be developed without a permit. *See Forest Prop. Inc. v. United States*, 177 F.3d 1360, 29 Envtl. L. Rep. (Envtl. L. Inst.) 21174 (Fed. Cir. 1999) (finding that the plaintiff had no investment-backed expectation in developing the wetland and that the total parcel did not suffer a substantial loss in economic value). *But see* *Lost Tree Village Corp. v. U.S.*, 707 F.3d 1286, 76 Env't. Rep. Cas. (BNA) 1078 (Fed. Cir. 2013) (finding that for the purposes of Fifth Amendment takings analysis, "relevant parcel" included wetlands plat only, not developed plats).

⁹*See, e.g., United States v. Windward Props., Inc.*, 821 F. Supp. 690, 23 Envtl. L. Rep. (Envtl. L. Inst.) 21182 (N.D. Ga. 1993).

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¹The Corps usually attempts to resolve violations administratively through the issuance of a "cease-and-desist order" and a negotiated remedy. If these efforts fail, or if the violation is considered sufficiently serious to warrant a penalty, the Corps will refer it to the Justice Department for judicial enforcement. *See* 33 C.F.R. § 326.1.

tion of the affected area, or mitigation, or both.² Most enforcement cases are settled, with the defendant paying a penalty and undertaking an agreed restoration plan, after which he seeks an after-the-fact permit to legitimize material the government has allowed to remain in place.³ The restoration remedy is derived from the injunctive authority of the Act.⁴

The former Fifth Circuit⁵ developed an elaborate series of guidelines for establishing the remedy in § 10 and § 404 cases, which it first elaborated in two companion cases, *United States v. Sexton Cove Estates*⁶ and *United States v. Joseph G. Moretti, Inc.*⁷ Under the Fifth Circuit scheme, a restoration order must: (1) confer maximum environmental benefits; (2) be achievable as a practical matter; and (3) bear an equitable relationship to the degree and kind of wrong it intends to remedy.⁸ The Fifth Circuit test has been followed by several district courts outside of the Fifth Circuit,⁹ and has been approximated in the Seventh¹⁰ and Ninth¹¹ Circuits. Although the Fifth Circuit approach has not been addressed elsewhere, the government generally tries all of its wetland cases in a similar manner and appears to have acquiesced in the Fifth Circuit's approach.¹²

In practice, the Fifth Circuit scheme requires the government to tender a restoration plan as part of its case in chief.¹³ The defendant is permitted to proffer his own competing plan or simply examine the government on its plan. The district judge

²The Tenth Circuit held that the applicable statute of limitations for civil penalties does not apply to government claims for equitable relief. *See United States v. Telluride Co.*, 146 F.3d 1241, 28 Env'tl. L. Rep. (Env'tl. L. Inst.) 21334 (10th Cir. 1998). Specifically, the court stated that the statute of limitations applied only to penalties or fines. The court found that a restorative injunction that sought only to restore damaged wetlands to the status quo, or to create new wetlands for those that could not be restored, did not penalize the defendant and thus was not subject to the statute of limitations. *See United States v. Telluride Co.*, 146 F.3d 1241, 1246, 28 Env'tl. L. Rep. (Env'tl. L. Inst.) 21334, 21337 (10th Cir. 1998). *See also United States v. Hallmark Construction Co.*, 14 F. Supp. 2d 1069, 29 Env'tl. L. Rep. (Env'tl. L. Inst.) 20168 (N.D. Ill. 1998); *United States v. Banks*, 115 F.3d 916, 28 Env'tl. L. Rep. (Env'tl. L. Inst.) 20060 (11th Cir. 1997).

³*See* 33 C.F.R. § 326.3(c) (Corps rules respecting after-the-fact permits). EPA's issuance of a compliance order detailing the nature of a violation and specifying a time for compliance with the CWA does not obviate the requirement that the recipient of the order obtain a § 404 permit. *Orange Env't, Inc. v. County of Orange*, 811 F. Supp. 926, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20746 (S.D.N.Y. 1993), *aff'd*, 2 F.3d 1235 (2d Cir. 1993).

⁴*See United States v. Carter*, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20682 (S.D. Fla. 1982).

⁵In 1981, the Fifth Circuit was broken into the Fifth and Eleventh Circuits. The former Fifth Circuit law is the law of both new circuits. *Bonner v. City of Pritchard*, 661 F.2d 1206 (11th Cir. 1981).

⁶*United States v. Sexton Cove Estates*, 526 F.2d 1293, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20216 (5th Cir. 1976).

⁷*United States v. Joseph G. Moretti, Inc.*, 526 F.2d 1306, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20221 (5th Cir. 1976).

⁸*See, e.g., United States v. Weisman*, 489 F. Supp. 1331, 1341, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20698, 20703 (M.D. Fla. 1980).

⁹*See, e.g., United States v. Bradshaw*, 541 F. Supp. 884, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20630 (D. Md. 1982); *United States v. Hanna*, 1983 U.S. Dist. LEXIS 17314, 19 Env't Rep. Cas. (BNA) 1068 (D.S.C. 1983).

¹⁰*United States v. Huebner*, 752 F.2d 1235, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20083 (7th Cir. 1985), *cert. denied*, 474 U.S. 817 (1985).

¹¹*United States v. Sunset Cove, Inc.*, 514 F.2d 1089, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20407 (9th Cir. 1975) (§ 10 case).

¹²*But see United States v. Cumberland Farms of Ct. Inc.*, 826 F.2d 1151, n. 8, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 21270 (1st Cir. 1987) (the United States did not object to the three-part test in the district court, but argued for a less onerous burden to the court of appeals, which considered the government bound by its position in the trial court).

¹³*See United States v. Board of Trustees of Fla. Keys Cmty. Coll.*, 531 F. Supp. 267, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20391 (S.D. Fla. 1981). It has sometimes been proposed that a separate hearing

may either accept the government's plan or reject it in favor of the defendant's plan or reject both plans and require the parties to submit alternative plans.¹⁴

Although the government contends otherwise, it has been held that where the district court determines that on-site restoration is not feasible, mitigation is an appropriate remedy.¹⁵ Mitigation is a difficult issue in settlement of wetland cases, since equivalency is difficult to establish. The government has sometimes permitted defendants to restore other areas where the site has been irrevocably altered (such as one covered by structures owned by innocent third parties) and has accepted donations of land that would otherwise be developable, or required construction of marsh land in areas where no marsh previously existed.

Whether or not § 404 civil actions must under the Seventh Amendment provide a right to a jury trial has been litigated in several cases. The courts that have considered the issue have concluded that the restoration remedy is of equitable origin, and thus a jury trial as a matter of right is unavailable.¹⁶

§ 13:114 Judicial review of § 404 actions

Permit decisions are reviewable in the district courts, as are formal jurisdictional determinations made by the Corps under the 33 C.F.R. Part 329 procedures for making such determinations.¹ Although there is no barrier to the taking of testimony in such cases, the courts have generally been reluctant to hold *de novo* trials, although several cases in which permits have been challenged by environmental groups have involved extensive expert testimony.² Most reviewing courts, however, limit review to the Corps' administrative record, or permit only limited testimony.³ The difference may involve the prevalence of NEPA claims in cases in which citizens

be held on restoration. *See* Want, *Federal Wetlands Law: The Cases and the Problems*, 8 Harv. Envtl. L. Rev. 1, 50 (1984).

¹⁴*United States v. M.C.C. of Florida, Inc.*, 772 F.2d 1501, 23 Env't Rep. Cas. (BNA) 1318, 15 Envtl. L. Rep. 21091 (11th Cir. 1985), *cert. granted, judgment vacated*, 481 U.S. 1034, (1987).

¹⁵*United States v. M.C.C. of Florida, Inc.*, 772 F.2d 1501, 15 Envtl. L. Rep. 21091 (11th Cir. 1985), *cert. granted, judgment vacated*, 481 U.S. 1034 (1987). *See also* *United States v. Trustees of Fla. Keys Cmty. Coll.*, 531 F. Supp. 267, 12 Envtl. L. Rep. (Envtl. L. Inst.) 20391 (S.D. Fla. 1981) (concluding that restoration of the site would be too expensive and infeasible, and ordering the defendant to provide an alternate beneficial environmental area comparable to the one destroyed).

¹⁶*United States v. M.C.C. of Florida, Inc.*, 772 F.2d 1501, 1506, 15 Envtl. L. Rep. 21091, 21093 (11th Cir. 1985), *cert. granted, judgment vacated*, 481 U.S. 1034 (1987); *United States v. Tull*, 769 F.2d 182, 15 Envtl. L. Rep. (Envtl. L. Inst.) 21061 (4th Cir. 1985), *rev'd sub nom.* *Tull v. United States*, 481 U.S. 412 17 Envtl. L. Rep. (Envtl. L. Inst.) 20667 (1987).

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¹Section 509 of the Act confers district court jurisdiction "through the back door," by not including Corps decisions among those actions that are reviewable in the courts of appeals.

²*See, e.g.,* *Sierra Club v. Sigler*, 695 F.2d 957, 13 Envtl. L. Rep. (Envtl. L. Inst.) 20210 (5th Cir. 1983); *Action for Rational Transit v. West Side Highway Project*, 536 F. Supp. 1225, 12 Envtl. L. Rep. (Envtl. L. Inst.) 20519 (S.D. N.Y. 1982) (and subsequent sequels, culminating in *Sierra Club v. U.S. Army Corps of Eng'rs*, 772 F.2d 1043, 15 Envtl. L. Rep. (Envtl. L. Inst.) 20998 (2d Cir. 1985) (affirming permanent injunction)).

³*See, e.g.,* *Avoyelles Sportsmen's League, Inc. v. Marsh*, 715 F.2d 897, 13 Envtl. L. Rep. (Envtl. L. Inst.) 20942 (5th Cir. 1983) (wetlands determination should be reviewed on the administrative record); *Buttrey v. United States*, 690 F.2d 1170, 13 Envtl. L. Rep. (Envtl. L. Inst.) 20085 (5th Cir. 1982) (challenge to permit denial on the record). *But see* *United States v. Akers*, 651 F. Supp. 320, 17 Envtl. L. Rep. (Envtl. L. Inst.) 20702 (E.D. Cal. 1987) and *Leslie Salt Co. v. United States*, 660 F. Supp. 183, 17 Envtl. L. Rep. (Envtl. L. Inst.) 21006 (N.D. Cal. 1987) (both dealing with wetland jurisdictional determinations and rejecting government arguments that review is limited to the record compiled by the Corps informally).

are challenging permits.⁴

Dissatisfied permit applicants raising claims that the Corps has deprived them of their property within the meaning of the Fifth Amendment takings clause⁵ in the district court will usually have to respond to government motions to dismiss for lack of jurisdiction. The government has argued, with mixed success, that takings claims must be raised exclusively in the Claims Court by reason of the exclusivity of that remedy under the Tucker Act.⁶ With few exceptions, those district courts that have taken jurisdiction over wetland taking claims have done so where the plaintiff was seeking injunctive relief, rather than damages,⁷ apparently rejecting arguments proffered by the government that the equitable remedy should not be available where there is an available remedy at law in the Claims Court.⁸ Since most § 404 applicants are either authorized to fill at least a portion of the area, have other areas of the tract that are not subject to § 404 jurisdiction, or can make other uses of the area, takings claims have more often than not failed the test laid down by the Supreme Court in *Penn Central Transportation Co. v. City of New York*.⁹

In *Sackett v. EPA*, the Supreme Court analyzed whether EPA Section 309 compliance orders are judicially reviewable.¹⁰ The EPA has the authority to issue compliance orders for any violation of Section 402 or 404 of the CWA. EPA asserted that

⁴See Want, *Federal Wetlands Law: The Cases and the Problems*, 8 Harv. L. Rev. 1, 28 (1984).

⁵U.S. Const. amend. V.

⁶*Compare* *American Dredging Co. v. Dutchyshyn*, 480 F. Supp. 957 (E.D. Pa. 1979) (dismissing taking claim on jurisdictional grounds) *with* *Russo Dev. Corp. v. Thomas*, 735 F. Supp. 631, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20290 (D.N.J. 1989) (retaining jurisdiction over takings claim), *Smithwick v. Alexander*, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20343 (E.D.N.C.), *aff'd*, 673 F.2d 1317, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20790 (4th Cir. 1981), *and* *1902 Atlantic Ltd. v. Hudson*, 574 F. Supp. 1381, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20023 (E.D. Va. 1983) (both deciding taking claims on the merits).

⁷The exception is significant, however. In *Kaiser Aetna v. United States*, 444 U.S. 164, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20042 (1979), the Supreme Court upheld a lower court decision based on a complaint that alleged a monetary taking. The jurisdictional issue was, however, apparently never raised.

⁸One reason litigants may prefer the district courts is that the Federal Circuit has not been a terribly hospitable forum for wetland takings claims. *See, e.g.,* *Deltona Corp. v. United States*, 657 F.2d 1184, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20905 (Ct. Cl. 1981); *Jentgen v. United States*, 657 F.2d 1210, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20910 (Ct. Cl. 1981). *But see* *Florida Rock Indus., Inc. v. United States*, 21 Cl. Ct. 161, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 21201 (1990) on remand from 791 F.2d 893 (Fed. Cir. 1986); *Loveladies Harbor, Inc. v. United States*, 21 Cl. Ct. 153, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 21207 (1990); *Laney v. United States*, 661 F.2d 145, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20910 (Ct. Cl. 1981).

⁹*Penn Cent. Transp. Co. v. City of N.Y.*, 438 U.S. 104, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20528 (1978). *See, e.g.,* *Smithwick v. Alexander*, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20343 (E.D.N.C.), *aff'd*, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20790 (4th Cir. 1981) (plaintiff's property had not been rendered valueless for all reasonable uses, including uses in its natural state). *Cf.* *1902 Atlantic Ltd. v. Hudson*, 574 F. Supp. 1381, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20023 (E.D. Va. 1983) (taking found where area, an old borrow pit, was only marginally a technical wetland, of no environmental significance, and where essentially no use could be made of it unless filled). Subsequent Supreme Court decisions have elaborated on the regulatory takings principles enunciated in *Penn Central*. *See, e.g.,* *Keystone Bituminous Coal Ass'n v. DeBenedictus*, 480 U.S. 470 (1987); *First English Evangelical Lutheran Church v. City of Los Angeles*, 482 U.S. 304 (1987). For more recent decisions finding that a taking had occurred and that the plaintiff was entitled to compensation, see *Loveladies Harbor, Inc. v. United States*, 28 F.3d 1171, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21072 (Fed. Cir. 1994); *Formanek v. United States*, 26 Cl. Ct. 332, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20893 (1992). *Cf.* *Dolan v. City of Tigard*, 512 U.S. 374, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21083 (1994) (addressing the required degree of connection between exactions imposed by a city and the projected impacts of a proposed development); *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 21104 (1992) (addressing takings issue with regard to state regulation); *Nollan v. Cal. Coastal Comm'n*, 483 U.S. 825, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20918 (1987) (same).

¹⁰*Sackett v. E.P.A.*, 132 S. Ct. 1367, 42 ELR 20064 (2012).

these compliance orders are not subject to judicial review and that the EPA's determination cannot be challenged until it actually brings an enforcement action. The Supreme Court disagreed and held that compliance orders are judicially reviewable.

§ 13:115 State program delegation

Sections 404(g) and 404(h) contemplate delegation to states of the § 404 permit program, except in relation to federal traditionally "navigable waters."¹ EPA's Part 233 regulations, which lay the ground rules for state delegation of § 404 authority, were significantly revised in 1988.² The revision was motivated in part by the fact that in the sixteen years since enactment of the Act, only one state (Michigan) had received delegated authority to operate the § 404 program within its borders.³

The delegation regulatory scheme is generally straightforward, with the critical delegation documents being a Memorandum of Agreement (MOA) between EPA's regional office and the state and a similar MOA between the state and the Corps. Several elements of the delegation scheme are worthy of note. Partial delegations are not provided for. The states need not assume responsibility for general permits issued under the Corps regulations, and they may choose whether to issue their own general permits.⁴ The procedures for applying for and processing permits are otherwise basically identical to those followed by the Corps.

It is significant that EPA and the Corps retain the ability to act on individual permits. EPA may require a state to modify or deny a permit if, following review, EPA determines that the proposed permit either is the subject of an interstate dispute or would not meet the requirements of § 404 or the § 404(b)(1) guidelines.⁵

Environmental organizations are generally critical of delegation of the § 404 program,⁶ since delegation makes several other federal statutes, such as the National Environmental Policy Act of 1969 and the Fish and Wildlife Coordination Act, inapplicable.⁷

VII. JUDICIAL REVIEW

§ 13:116 Judicial Review of EPA actions

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¹See § 404(g), which excludes from state authority waters which are presently used, or are susceptible to use in their natural condition or by reasonable improvement as a means to transport interstate or foreign commerce shoreward to their ordinary high water mark, including all waters which are subject to the ebb and flow of the tide shoreward to their mean high water mark, or mean higher high water mark on the west coast, including wetlands adjacent thereto. Essentially, tidewaters and tidal wetlands are not subject to state delegation. A large number of inland waters also are not subject to delegation, because of the breadth of the Supreme Court's historic construction of the key terms of the navigability language. See discussion at § 13:96, of caselaw under the Rivers and Harbors Act of 1899.

²53 Fed. Reg. 20764 (1988). In 1993, EPA promulgated regulations allowing Native American tribes to be treated identically to states for purposes of § 404 of the Act. 58 Fed. Reg. 8172 (Feb. 11, 1993).

³Michigan has since been joined by New Jersey in receiving delegated authority for the § 404 program.

⁴40 C.F.R. § 233.21. Existing general permits are grandfathered; states may elect to enforce them or leave enforcement up to the Corps.

⁵40 C.F.R. § 233.50. Interstate effects are governed by § 233.31. EPA review of classes of state permits is subject to waiver in the MOA negotiated with the state.

⁶For an example of an environmental organization's challenge to EPA's approval of revisions to Michigan's delegated wetlands program, see *Nat'l Wildlife Fed'n v. Adamkus*, 936 F. Supp. 435 (W.D. Mich. 1996).

⁷These statutes are tied to federal actions, and delegation of permit authority to a state eliminates the "federal action" component of the regulatory activity.

Judicial review of EPA actions is governed by § 509(b) of the Act. The Act is facially simple, but as will be discussed below, it does not demark jurisdiction for review of a number of EPA actions as clearly as it might have.

The following actions are reviewable only in the United States court of appeals for the judicial circuit in which the petitioner “resides or transacts business which is directly affected by such action”:¹

1. promulgation of new source performance standards (NSPS) under § 306;²
2. issuing or denying an NPDES permit;³
3. making a determination with respect to a state program’s qualification for NPDES delegation under § 402(b);⁴
4. “approving or promulgating any effluent limitation or other limitation under §§ 301, 302, or 306”;⁵
5. promulgating an effluent standard, prohibition, or pretreatment standard under § 307.⁶

Petitions for review must be filed within 120 days of the challenged “determination, approval, promulgation, issuance or denial,” unless the grounds for the challenge arose after the 120th day.⁷ Under federal practice, petitions to review agency action are limited to the agency’s administrative record. Section 509(c) provides a limited basis for remand to EPA to reopen the record in cases where a permit decision or any other decision involving opportunity for an adjudicatory hearing is being challenged, and the party seeking the remand is able to convince the court that the new evidence is material and that there were “reasonable grounds” for the failure to present the information to EPA during its prior administrative proceeding.

The venue provision, allowing challenges to be mounted in any circuit court where the petitioner resides or transacts business, on occasion produced spirited “races to the courthouse”⁸ among litigants of differing persuasions seeking to secure review of generally applicable CWA regulations in what they each perceived as a

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¹The last seven words of the quoted material were added by the Water Quality Act of 1987, in order to curb the forum-shopping practices of certain industrial petitioners. Pub. L. No. 100-4, § 505(a), 101 Stat. 75.

²CWA § 509(b)(1)(A), 33 U.S.C.A. § 1369(b)(1)(A).

³CWA § 509(b)(1)(F), 33 U.S.C.A. § 1369(b)(1)(F). Vetoing a state permit would constitute denial of a permit.

⁴CWA § 509(b)(1)(D), 33 U.S.C.A. § 1369(b)(1)(D).

⁵CWA § 509(b)(1)(E), 33 U.S.C.A. § 1369(b)(1)(E). This provision has been construed broadly to include review of such matters as standard permit conditions and management practices, in addition to single-number effluent limitations.

⁶CWA § 509(b)(1)(C), 33 U.S.C.A. § 1369(b)(1)(C). CWA § 509(b)(1)(B), 33 U.S.C.A. § 1369(b)(1)(B), provides review of EPA action “in making any determination pursuant to section 306(b)(1)(C).” The referenced section is nonexistent, and in fact never was a part of the statute. It was a part of § 306 as reported by the Senate in S-2770. *See A Legislative History of the Water Pollution Control Act Amendments of 1972*, Serial No. 93-1, Vol. 2, p. 1626. The subsection provided for formal determinations to be made by EPA with respect to the applicability of NSPSs to individual sources. It apparently was deleted in conference.

⁷CWA § 509(b)(1), 33 U.S.C.A. § 1369(b)(1). At least one court has found that Congress did not provide a statute of limitations for bringing a challenge based on new grounds (grounds arising after the 120th day). *Chevron U.S.A. Inc. v. EPA*, 908 F.2d 468, 20 Env’t. L. Rep. (Env’t. L. Inst.) 21090 (9th Cir. 1990) (discussing the relative merits of borrowing the limitations period provided in § 509(b)(1) or an analogous state law limitations period but declining to decide the issue on the grounds that under either standard the challenge was time-barred).

⁸A recent example is the litigation over the EPA’s Clean Water Rule where over 27 states challenged the rule in federal court. *See e.g.*, *In re E.P.A.*, 803 F.3d 804, 81 Env’t. Rep. Cas. (BNA) 1389, 2015 A.M.C. 2409 (6th Cir. 2015) (finding that the petitions demonstrated a substantial possibility of

forum friendly to their point of view. Congress added a venue-selection provision to the statute in 1987, § 509(b)(3), to deal with this problem. This provision supplants 28 U.S.C.A. § 2112(a)⁹ with a lottery-selection process where more than one court of appeals has received a petition to review an EPA action within thirty days of the filing of the first petition challenging the action.

A significant provision of the statute, § 509(b)(2), prohibits a litigant in a civil or criminal enforcement action from challenging an EPA action as to which judicial review was available under § 509(b)(1).

A large number of CWA actions do not fall within the ambit of § 509(b). Such actions are reviewable by United States district courts.¹⁰

The standard of review is not set by § 509 and is therefore governed by the Administrative Procedure Act.¹¹ The statute contains a provision allowing for an award of attorney's fees or costs to a prevailing party or substantially prevailing party in a challenge to EPA action under the Act.¹²

§ 13:117 Supreme Court, the Clean Water Act, and the Constitution

An issue of primary significance is the jurisdictional scope of the CWA. Namely, (i) what constitutes “waters of the United States” under the Act and (ii) what are the constitutional limitations on the federal government's CWA jurisdiction under the Commerce Clause. The Supreme Court has waded into the issue on more than one occasion—in *Riverside Bayview*, *SWANCC*, and most recently *Rapanos*¹—and in 2015 EPA issued the Clean Water Rule, which has since been stayed by the Sixth Circuit.² Additional discussion of EPA's jurisdiction under the Act is located in Section 13:32 (Jurisdictional scope—Waters of the United States) and Section 13:96 (Jurisdiction of § 404—Waters of the United States). It will be important to follow the litigation surrounding the Clean Water Rule to see how courts and the agencies continue to interpret the jurisdictional scope of the Act.

§ 13:118 Judicial Review of State actions

Judicial review of actions taken by state regulators in states possessing delegated NPDES and other CWA authority is governed solely by state law. Some states

success on the merits).

⁹28 U.S.C.A. § 2112(a) provides that in such a race the court in which a petition is first timely filed has venue. In order to eliminate arguments over precisely when a rule is “promulgated” (i.e., on signing, on submission to the Federal Register, or upon publication), EPA generally specifies a date and time certain in its regulations as to when they become “effective.”

¹⁰*See, e.g.,* Mfg. Chemists Ass'n v. Costle, 455 F. Supp. 968, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20667 (W.D. La. 1978) (challenge to hazardous substance list promulgated under § 311); *see* Costle v. Pacific Legal Found., 445 U.S. 198, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20225 (1980). Review in such cases is governed by § 706 of the Administrative Procedure Act, 5 U.S.C.A. § 706.

¹¹5 U.S.C.A. § 706. Essentially, the standard for reviewing informal rulemaking is the “arbitrary and capricious” standard, and for review of actions following a formal hearing the “substantial evidence” standard. *See, e.g.,* Seacoast Anti-Pollution League v. Costle, 572 F. 2d 872, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20207 (1st Cir. 1978).

¹²CWA § 509(b)(3), 33 U.S.C.A. § 1369(b)(3).

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¹*U.S. v. Riverside Bayview Homes, Inc.*, 474 U.S. 121, 106 S. Ct. 455, 88 L. Ed. 2d 419, 23 Env't. Rep. Cas. (BNA) 1561, 16 Env'tl. L. Rep. 20086, 20089 (1985); *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159, 121 S. Ct. 675, 148 L. Ed. 2d 576, 51 Env't. Rep. Cas. (BNA) 1833, 31 Env'tl. L. Rep. 20382 (2001); *Rapanos v. U.S.*, 547 U.S. 715, 126 S. Ct. 2208, 165 L. Ed. 2d 159, 62 Env't. Rep. Cas. (BNA) 1481, 36 Env'tl. L. Rep. 20116 (2006).

²*In re E.P.A.*, 803 F.3d 804, 81 Env't. Rep. Cas. (BNA) 1389, 2015 A.M.C. 2409 (6th Cir. 2015) (finding that the petitions demonstrated a substantial possibility of success on the merits).

provide an elaborate administrative appellate process, others provide for direct appeals from agency decisions to one or another level of state court. Nothing in the Act dictates either the procedures for [either/or] the standard of state judicial review.

State actions taken with respect to federal facilities may, however, be reviewed in federal court¹ on application of the United States.

VIII. ENFORCEMENT

§ 13:119 Federal enforcement—In general

The Act's enforcement scheme is, except for wetland and oil pollution matters,¹ contained within §§ 308 and 309 of the statute. The enforcement approach adopted by Congress in Pub. L. No. 92-500 was much more of a straightforward "federal" enforcement approach than had been taken in the Clean Air Act, enacted two years earlier, and reflects the overall greater degree of federal control inherent in the water program.

EPA's enforcement of the Act has generally reflected the Agency's programmatic goals, although it is not an unfair assessment to say that the Act's enforcement has never been an Agency priority. Enforcement during the early years of the program focused on ensuring that all point sources were brought within the NPDES permit program.² Beginning in 1976, the enforcement focus shifted to industrial point sources that had not achieved BPT or would clearly not achieve it within the time established in the permit. Compliance with the phase 2 permit requirements (BCT and BAT) coincided with a significant decline in the Agency's enforcement resources³ and assumption of the NPDES program by a majority of the states.⁴

Municipal noncompliance has always presented a problem to EPA. State agencies are reluctant to sue their own municipalities to secure compliance, a malady that no less affects EPA regional administrators. Municipalities present a practical enforcement problem as well. They cannot be shut down. Moreover, after years of dependence on a significant level of federal grant funding, which in the 1980s began to dry up, states and often-impooverished municipalities have been able to mount politically potent arguments for compliance deferments on financial grounds.⁵

Neither EPA nor the states mounted a substantial enforcement drive against

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¹United States v. Puerto Rico, 721 F.2d 832, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20003 (1st Cir. 1983). Enforcement actions brought against federal facilities by states are subject to removal to federal courts. See CWA § 313(a), 33 U.S.C.A. § 1323(a). Federal facilities are generally not exempt from paying civil penalties assessed under state law. 42 U.S.C.A. § 6961.

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¹Section 404, 33 U.S.C.A. § 1344, contains its own enforcement scheme. Oil pollution is prohibited, and CWA § 311, 33 U.S.C.A. § 1321, contains its own penalty scheme.

²Remarkably, unpermitted sources of water pollution have continued to be found and identified during the years following the enactment of the statute.

³The Reagan Administration's priorities did not include basic pollution control enforcement, and the effects of the Gramm-Rudman-Hollings legislation imposing mandatory budget cuts in the years subsequent to 1984 exacerbated the Agency's enforcement woes. In addition, the Agency's internal priorities began to shift to hazardous waste and Superfund matters beginning in 1979, in response to perceived public demands.

⁴State program assumption carried with it primacy over enforcement. Although EPA retains the right to independently enforce the terms of state-issued permits, it is reluctant to do so except in the face of egregious inaction on the state's part. In one of the few instances when the agency sought to "overfile" a state, it received stern words from a reluctant federal judge. See United States v. Cargill, Inc., 508 F. Supp. 734, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20649 (D. Del. 1981).

⁵The tension between Title II and Title III enforcement has always been uncomfortable for EPA. Until 1980, when Congress finally recognized at least a limited nexus between the availability of grant

permit holders for exceedances of permit limits during the first twelve years of the program. Such enforcement is easy to mount, since the requirement of self-monitoring contained in all NPDES permits effectively has the discharger proving the enforcement case for the government; the DMRs are admissions against interest. These facts led two public interest organizations, Trial Lawyers for Public Justice and the Natural Resources Defense Council, to initiate a highly successful campaign of citizen suits early in 1984, focusing on permit violations. This initiative was quickly adopted by other citizen groups and has become a ubiquitous private enforcement effort.

Congress substantially overhauled the enforcement provisions of the Act in the 1987 reauthorization act, Pub. L. No. 100-4. The principal thrusts of the amendments were to align the criminal sanctions with those in the Resource Conservation and Recovery Act (RCRA), and to provide additional enforcement flexibility through allowing administrative penalty assessments.

§ 13:120 Federal enforcement—Inspections, monitoring, and entry

Section 308 of the Act contains the authority for the requirement of DMRs and other monitoring and recordkeeping requirements imposed upon dischargers,¹ authority for prescribing sampling and analytical methods,² and authority for EPA employees and “authorized representatives” to enter “upon, or through, any premises in which any effluent source is located or in which any records required to be maintained . . . are located” in order to inspect and copy records, inspect monitoring equipment, or sample effluents “which the owner or operator of such source is required to sample.”³ A 1987 amendment to § 308(b) makes it clear that EPA contractors are “authorized representatives,” overruling a judicial decision under the prior law, and provides criminal penalties for divulging confidential information

funds and the ability of municipalities to meet their costly CWA obligations, the government’s official position had been that the unavailability of grant funding to a municipality was not a defense to meeting the Title III deadlines. The political weakness of that position is perhaps best understood in terms of numbers. EPA brought less than twenty serious enforcement actions against municipalities between 1972 and 1980. By the mid-1980s, however, EPA had become somewhat more aggressive, particularly in seeking civil penalties. For example, the Puerto Rico Aqueduct and Sewer Authority was levied a \$32 million penalty for violation of a consent decree in *United States v. P.R.A.S.A.*, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20893 (D.P.R. May 4, 1987). During the Obama Administration, municipal discharges became a national enforcement initiative, and in the 2000s many major cities entered consent decrees with the federal government to address chronic noncompliance. See <https://www.epa.gov/enforcement/national-enforcement-initiative-keeping-raw-sewage-and-contaminated-stormwater-out-our>.

Section 309(e) of the Act, 33 U.S.C.A. § 1319(e), has not significantly alleviated the problem of municipal enforcement. That provision requires EPA to join the state in any enforcement action brought against a municipality within the state and makes the state liable for “the payment of any judgment, or any expenses incurred as a result of complying with any judgment, to the extent that the laws of that State prevent the municipality from raising revenues needed to comply with such judgment.” This provision is useful only if the state has statutes placing debt ceilings on municipalities or prohibits bonding for sewer improvements, or has some other legislative barrier. These are rare.

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¹See CWA §§ 308(a)(1), 308(a)(2), 33 U.S.C.A. §§ 1318(a)(1), 1318(a)(2).

²CWA § 308(a)(2)(A)(iv), 33 U.S.C.A. § 1318(a)(2)(A)(iv).

³CWA § 308(a)(2)(B), 33 U.S.C.A. § 1318(a)(2)(B). As with other federal agencies, EPA is required to secure a judicial warrant to enter premises for which no consent has been given, under the doctrine of *Marshall v. Barlow’s, Inc.*, 436 U.S. 307, 8 Env’tl. L. Rep. (Env’tl. L. Inst.) 20434 (1978). The language of the statute also limits EPA’s authority. It does not appear to have the authority to enter nonregulated premises for the purpose of getting to regulated premises and does not appear to have the authority to enter a property in order to take a sample from an effluent stream that is not subject to a sampling obligation contained in a permit.

without legal authorization.⁴

Records, reports, and other information generated pursuant to the Act's requirements are accessible by the public unless they satisfy the statutory test for confidential treatment,⁵ and even this limited confidentiality is not available for data that is considered "effluent data."⁶

States may request authority to perform inspection, monitoring, and entry with respect to point sources within the state (except for federal facilities),⁷ provided their procedures are approved by EPA.⁸

§ 13:121 Federal enforcement—Federal civil enforcement

Congress did not initially provide EPA with administrative penalty authority in the Act.¹ The Agency was limited to issuing an order requiring compliance,² which it had to ask a federal judge to enforce or seek judicial enforcement directly.

Administrative penalty authority was provided in 1987 with the addition of § 309(g) to the Act.³ The administrative penalty scheme is similar to the one adopted for RCRA in the 1984 amendments to that statute and is labyrinthine. There are different procedures and judicial review depending upon whether the violation alleged is per violation ("Class I" penalties) or per day ("Class II" penalties).⁴

The public has a right to comment on proposed penalties, which are also subject to a "penalty policy" that specifies factors to be considered in determining penalty amounts, and commenters may essentially force a negotiated penalty to a hearing.⁵

⁴Pub. L. No. 100-4, § 310, 101 Stat. 41 (1987).

⁵See CWA § 308(b)(2), 33 U.S.C.A. § 1318(b)(2). Only trade secret-related information is protected.

⁶"Effluent data" is defined by § 308(b)(1) of the Act, 33 U.S.C.A. § 1318(b)(1), as data "related to any applicable effluent limitations, toxic, pretreatment, or new source performance standards."

⁷Congress took the opposite tack in RCRA, specifically allowing states to monitor and enter federal facilities. See RCRA § 3007, 42 U.S.C.A. § 6927.

⁸See CWA § 308(c), 33 U.S.C.A. § 1318(c).

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¹Such authority was included in the 1970 Clean Air Act only in connection with the automobile engine and fuel program. When the CAA was amended in 1977, limited administrative penalty authority was included for stationary sources in § 208 of the Act. No such authority was provided in the Clean Water Act of 1977. Nearly every other federal environmental statute contains administrative penalty authority.

²The statute contained two types of delayed compliance orders, which are currently only of historical significance. Section 309(a)(5)(B) provided for an administrative extension of the July 1, 1977, compliance deadline to April 1, 1979, to dischargers whose facilities were under construction by the 1977 deadline date. Section 309(a)(6) allowed EPA to extend until July 1, 1983, the 1977 compliance deadline for industrial dischargers whose means of compliance was connection to a POTW that had not been completed by the 1977 deadline.

³The administrative penalty scheme also applies to § 404, with penalties leviable either by EPA or the Corps, following a finding of violation by the Corps. (EPA and the Corps are expected to adopt an interagency agreement to implement the enforcement scheme.) Penalty levies may range up to \$10,000 per Class I violation (not to exceed \$25,000 and up to \$10,000 per day for Class II violations (not to exceed \$125,000).

⁴CWA § 309(g)(2), 33 U.S.C.A. § 1319(g)(2), amended by Pub. L. No. 100-4, § 314, 101 Stat. 46 (1987). Informal hearings are afforded for Class I penalties and adjudicatory hearings for Class II penalties. See 52 Fed. Reg. 30671 (1987) for EPA's Interim Final Class II penalty procedures (codified as amendments to 40 C.F.R. Part 22). Appeals from Class I penalty assessments are to a federal district court (either in the District of Columbia or the district where the violation occurred), and appeals from Class II assessments are to a United States court of appeals (either the D.C. Circuit or the circuit wherein the violation occurred).

⁵See CWA §§ 309(g)(3), 309(g)(4), 33 U.S.C.A. §§ 1319(g)(3), 1319(g)(4). Penalty policy factors

Commenters, as well as the violator, may seek judicial review,⁶ a matter of importance to active citizen groups since a final administrative penalty may cut off their rights to file a citizen suit.⁷ This latter fact could produce bizarre consequences in the face of the bifurcated appeal process. For example, a multiple claim penalty assessment, including both per-violation and per-day violations, might be appealed by the violator as to a per-day assessment and by a commenter as to a per-violation assessment, with the result being two different courts reviewing the same EPA action.

The 1987 reauthorization also increased the maximum judicially levied civil penalty from \$10,000 per day to \$25,000 per day.⁸ In addition, a technical amendment ended the government's pre-1987 practice of charging multiple offenses for a single operational upset that caused a violation of more than one permit term.⁹

In states with NPDES authority, EPA retains the authority to enforce the state-issued permits directly or it may choose to notify the discharger and the state and defer enforcement for thirty days.¹⁰ EPA also retains the authority to enforce pretreatment requirements, but § 309(f) requires it to enforce primarily against the municipal POTW owner into whose facility the offending discharge is introduced, with the pretreater joined as a mandatory party to the action.

Although there is lower court authority to the contrary, the better view of § 309(a) is that enforcement is discretionary, in spite of the statute's use of the usually mandatory "shall" in describing EPA's response to a finding of noncompliance.¹¹ Enforcement has nearly always been viewed as a matter of discretion on the part of law enforcement authorities, and even when the statute uses words like "shall," the better view is that enforcement is discretionary unless Congress has inserted a

include the "gravity of the violation," the violator's ability to pay and prior compliance history, the degree of culpability, the economic savings that resulted from the period of violation, and "other matters as justice may require." The factors are similar to those used by EPA and the Department of Justice in the Clean Water Act Civil Penalty Policy adopted by the agencies in 1986. For a discussion of how EPA's Environmental Appeals Board calculates the economic benefit derived from a violation, see *In re B.J. Carney Indus., Inc.*, CWA Appeal No. 96-2 (EPA Env'tl. Appeals Bd. June 9, 1997) (remanding for recalculation of penalty).

⁶CWA § 309(g)(8), 33 U.S.C.A. § 1319(g)(8).

⁷See CWA § 309(g)(6), 33 U.S.C.A. § 1319(g)(6). Citizens who commence their actions prior to commencement of EPA's penalty action, or whose notice precedes that date and who file their lawsuits within 120 days, are not barred. See CWA § 309(g)(6)(B), 33 U.S.C.A. § 1319(g)(6)(B). A similar bar applies to civil penalty levies under § 311(b) (relating to oil and hazardous substance spills).

⁸CWA § 309(d), 33 U.S.C.A. § 1319(d). States need not replicate these amounts as a precondition to NPDES delegation. See Pub. L. No. 100-4, § 313(b), 101 Stat. 45 (1987).

⁹CWA § 309(c)(5), 33 U.S.C.A. § 1319(c)(5). Though part of the *criminal* sanction subsection, it is difficult to fathom this section not applying equally to civil violations.

¹⁰See CWA § 309(a)(1), 33 U.S.C.A. § 1319(a)(1). The alternate thirty-day notice provision is curious. It seems to be derived from the Clean Air Act enforcement scheme, which provides a mandatory thirty-day notice requirement as a prerequisite to federal enforcement. Congress appears to have had second thoughts in the Act, and left state notification to EPA's discretion.

¹¹*Compare* *Zemansky v. EPA*, No. A81-274-Civil (D. Alaska 3-4-82) (unpublished) (holding EPA must either issue an order or institute a judicial enforcement action once it has found a discharger to be in violation of a permit limit); *South Carolina Wildlife Fed'n v. Alexander*, 457 F. Supp. 118, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20757 (D.S.C. 1978) (duty mandatory); *and* *Illinois v. Hoffman*, 425 F. Supp. 71 (S.D. Ill. 1977) (duty mandatory) *with* *Caldwell v. Gurley Refining Co.*, 533 F. Supp. 252, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20759 (E.D. Ark. 1982), *aff'd on other grounds*, 755 F.2d 645, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20316 (8th Cir. 1985) (dismissing EPA from mandamus citizen suit on ground enforcement discretionary); *Sierra Club v. Train*, 557 F.2d 485, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20670 (5th Cir. 1977) (enforcement discretionary); *and* *Zemansky v. EPA*, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20862 (D. Alaska 1986) (reconsidering 1982 opinion and reversing judgment).

sanction for failure to act.¹² The Supreme Court's decision in *Weinberger v. Romero-Barcelo*,¹³ moreover, reaffirmed the availability of enforcement discretion under the Act.¹⁴

The Act's penalty scheme is straightforward. Federal courts may order injunctive relief and may levy civil penalties for violations of the Act's requirements, NPDES permit "conditions or limitations" violations, state-issued § 404 permit term violations,¹⁵ or violations of an order issued under § 309(a).¹⁶

In *Tull v. United States*,¹⁷ the Supreme Court decided that the Act's enforcement cases involving civil penalties are subject to the Seventh Amendment right to jury trial.

Defendants in CWA enforcement actions, and occasionally citizen plaintiffs in § 505 actions, have sought to substitute environmentally beneficial projects or trust fund donations for penalties. Such alternative relief, termed "credit projects" by EPA, is addressed in the government's CWA civil penalty policy in a way that discourages them.¹⁸ Congress seems to have tried to encourage EPA to do more along these lines with language in the Conference Report of the Water Quality Act of 1987.¹⁹

§ 13:122 Federal enforcement—Criminal enforcement

The Act's criminal violations were, until 1987, limited to "willful" and "negligent" violations of §§ 301, 302, 306, 307, and 308, permit conditions and limitations, and state § 404 permit conditions and limitations, along with "knowingly" making "any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained" under the Act and falsifying, tampering with or "knowingly render[ing] inaccurate any monitoring device or method required to be maintained."¹ In addition, the above were only misdemeanors

¹²See, e.g., *Sierra Club v. Train*, 557 F.2d 485, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20670 (5th Cir. 1977).

¹³*Weinberger v. Romero-Barcelo*, 456 U.S. 305, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20538 (1981).

¹⁴*Weinberger* involved the issue of judicial discretion to allow an unpermitted source to remain operating while EPA processes its application for a permit in the face of § 301(a), which appeared unequivocally to require immediate cessation of any unlawful discharge. The source in this case was the U.S. Navy, whose ordinance was found to be a pollutant requiring a permit, something which had never occurred to EPA. The plaintiffs sought an immediate halt to the Navy's use of its Puerto Rico gunnery range, citing § 301(a). The Court, rejecting the plain language of the statute, stated broadly that Congress had not spoken clearly enough to deprive the federal courts of their discretion in fashioning equitable remedies.

¹⁵Violations of federally issued § 404 permits are subject to the separate enforcement scheme under § 404, 33 U.S.C.A. § 1344.

¹⁶CWA § 309(d), 33 U.S.C.A. § 1319(d). Substantive violations are those of §§ 301, 302, 306, 318, and 405 of the Act.

¹⁷*Tull v. United States*, 481 U.S. 412, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20667 (1987).

¹⁸The penalty policy requires that a "substantial" up-front penalty be paid, and that "credit projects" may only be in mitigation of the amount of a penalty, not a substitution for a penalty. The Department of Justice testified before the House Merchant Marine and Fisheries Committee during November 1987, claiming that such remedies would violate the Miscellaneous Fees Act and/or the Anti-deficiency Act, though its arguments for either proposition do not withstand scrutiny. See Stever, *Environmental Penalties and Environmental Trusts—Constraints on New Sources of Funding for Environmental Preservation*, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 10356 (1987).

¹⁹See H.R. Rep. No. 99-1004, at 139 (1986).

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¹In proving that a defendant "knowingly" falsified, tampered with, or rendered inaccurate any monitoring device or method required to be maintained under the Act, the government must only show

under the federal sentencing scheme.² Thus, federal law enforcement personnel were less than enthusiastic about investigating CWA offenses.³ Although there are a number of Title 18 felony offenses available to prosecutors to deal with the “lying and concealing” type offenses,⁴ substantive violations were by many felt to be inadequately punishable.

The criminal enforcement provisions of the Act were substantially modified and upgraded by the Water Quality Act of 1987. Violations of §§ 318 and 405 were added to the list of criminal offenses, as were violations of Corps-issued § 404 permits and pretreatment permit violations.⁵ In addition, a new crime was created—either negligently or knowingly introducing a “pollutant” or “hazardous substance” into a sewer system where either the discharger knew or “reasonably should have known” it could cause personal injury or property damage, or, except where authorized, the substance causes the local POTW to violate any effluent limitation or condition in its NPDES permit.⁶

The 1987 amendments also doubled the criminal penalties, moving knowing violations into the felony range,⁷ and set the false statements and monitoring offense apart from the other substantive offenses.⁸ The Second, Eighth, and Ninth Circuits have held that in a prosecution for a “knowing” violation under § 309(c)(2)(A), the government is required to prove that individual defendants knew the nature of their acts and performed them intentionally, but need not prove that such defendants knew that their acts violated the Act, any particular provision of the law, or a regulatory permit.⁹ The Second Circuit has applied the same interpretation of “knowledge” to a prosecution for knowingly falsifying or tampering with discharge

that the defendant knew that he committed the prohibited act, not that the defendant knew that he violated the Act. *United States v. Hopkins*, 53 F.3d 533, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 21178 (2d Cir. 1995), *cert. denied*, 516 U.S. 1072, 116 S. Ct. 773 (1996); *United States v. Sinskey*, 119 F.3d 712, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 21468 (8th Cir. 1997).

²See CWA § 309(c), 33 U.S.C.A. § 1319(c).

³For example, FBI special agents receive less credit for time spent on misdemeanors than for time spent on felonies.

⁴*E.g.*, 18 U.S.C.A. § 1001.

⁵CWA §§ 309(c)(1)(A), 309(c)(2)(A), 33 U.S.C.A. §§ 1319(c)(1)(A), 1319(c)(2)(A).

⁶CWA §§ 309(c)(1)(B), 309(c)(2)(B), 33 U.S.C.A. §§ 1319(c)(1)(B), 1319(c)(2)(B). The term “hazardous substance” is defined very broadly by § 309(c)(7) to encompass the same range of substances covered by the definition of the term in § 101 of the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C.A. § 9601. This provision seems to have been intended to close the loophole created by the “domestic sewage exemption” in EPA’s RCRA regulations. For a discussion of this, see D. Stever, *Law of Chemical Regulation and Hazardous Waste*, ch. 5.

⁷Negligent violations are punishable by fines of between \$2,500 and \$25,000 per day and incarceration of up to a year, with doubling for repeat offenses. Knowing violations carry fines of between \$5,000 and \$50,000 per day and up to a year incarceration, with doubling for repeat offenses. A thorough understanding of the potential for fines or incarceration for CWA violations, however, requires resort to the Sentencing Guidelines promulgated pursuant to the Sentencing Reform Act of 1984, 18 U.S.C.A. §§ 3551 to 3559. The Guidelines are preemptive of the statutory penalties and provide an elaborate penalty matrix for sentence disposition. See Stever, *Environmental Penalties and Environmental Trusts—Constraints on New Sources of Funding for Environmental Preservation*, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 10356, 10366 (1987). In one unusual case, the court imposed severe restrictions on the defendant’s marine contracting operation when he violated probation following convictions under the Act and Rivers and Harbors Act. *United States v. Holland*, 874 F.2d 1470, 29 Env’t Rep. Cas. (BNA) 2041 (11th Cir. 1989). For more recent cases applying the guidelines in CWA cases, see *United States v. Ellen*, 961 F.2d 462, 35 Env’t Rep. Cas. (BNA) 1165, 22 Env’tl. L. Rep. 21282 (4th Cir. 1992), as amended, (Apr. 27, 1992), and *United States v. Goldfaden*, 959 F.2d 1324, 35 Env’t Rep. Cas. (BNA) 1177, 22 Env’tl. L. Rep. 21069 (5th Cir. 1992).

⁸CWA § 309(c)(4), 33 U.S.C.A. § 1319(c)(4). Penalties are fines of up to \$10,000 and imprisonment of up to two years, with doubling for repeat offenses.

⁹*United States v. Cooper*, 173 F.3d 1192, 29 Env’tl. L. Rep. (Env’tl. L. Inst.) 21044 (9th Cir. 1999);

monitoring methods under § 309(c)(4).¹⁰

Section 309(c)(6) specifically makes a “responsible corporate officer” criminally liable for the acts of the corporation by which the individual is employed. The statute does not indicate whether one can be criminally liable for corporate actions without actual knowledge or complicity.¹¹

A final addition of the Water Quality Act of 1987 is the “knowing endangerment” provision in § 309(c)(3), which is a virtual clone of the one that has been in RCRA since 1976. The provision is complex, and contains its own standards of proof and definitions.

Persons¹² found guilty of criminal violations of the Act (whether by plea or after trial) are automatically “listed” on the government contract debarment list.¹³ Once listed, one may not escape the list until the conditions giving rise to the violation have been eliminated.¹⁴ EPA takes the position that if one is found guilty of discharging without a permit, the violation is not corrected until a permit is issued.¹⁵

§ 13:123 State enforcement

There are widely varying state enforcement programs. All provide for judicial injunctive relief and civil and criminal penalties at least as stringent as those in § 309. Many states have given the agency enforcing the water pollution law extensive administrative penalty authority. Practitioners dealing with delegated states must become familiar with the procedural nuances of their state as well as the substantive state water pollution law.¹

§ 13:124 Citizen suits—History and overview

The citizen suit provision, § 505, was a part of the original 1972 Act. It was patterned on the earlier Clean Air Act (CAA) citizen suit provision, with the significant addition of specific authority for civil penalty levies not included in the CAA

United States v. Hopkins, 53 F.3d 533, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 21178 (2d Cir. 1995), *cert. denied*, 116 S. Ct. 773 (1996); United States v. Weitzenhoff, 35 F.3d 1275, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21504 (9th Cir. 1994), *cert. denied sub nom.* Mariani v. United States, 115 S. Ct. 939 (1995); United States v. Sinskey, 119 F.3d 712, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 21468 (8th Cir. 1997).

¹⁰United States v. Hopkins, 53 F.3d 533, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 21178 (2d Cir. 1995), *cert. denied*, 116 S. Ct. 773 (1996).

¹¹United States v. Hong, 242 F.3d 528, 31 Env'tl. L. Rep. (Env'tl. L. Inst.) 20509 (4th Cir. 2001) (affirming the conviction of the owner of a wastewater treatment facility for violations of the facility's NPDES permit, even though he did not formally serve as an officer of the company, because he controlled the facility's finances and played a substantial role in the facility's operations).

¹²Federal employees working within the scope of their employment can be criminally liable “persons” under the Act. United States v. Curtis, 988 F.2d 946, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20685 (9th Cir. 1993), *cert. denied*, 510 U.S. 862 (1993).

¹³CWA § 508, 33 U.S.C.A. § 1368.

¹⁴See 40 C.F.R. Part 15 (EPA's debarment regulations). The Agency also has discretion to list a noncriminal violator. 40 C.F.R. Part 15.

¹⁵That event may happen many months after a plea is entered and all fines have been paid.

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¹State laws in the area of water pollution generally must not conflict with either federal statutory or judge-made maritime law. See *Askew v. American Waterways Operations, Inc.*, 411 U.S. 325, 337-41, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20362, 20366-68 (1973); see also *In re Ballard Shipping Co. v. Beach Shellfish*, 32 F.3d 623, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 20140 (1st Cir. 1994) (holding that whether substantive state legislation is preempted by maritime law depends on a balancing of the state and federal interests in any given case).

provision.¹

Though hailed by citizens' groups as a significant grant of grassroots enforcement power, the first ten years of the Act saw § 505 used primarily as a vehicle for compelling EPA to act when it had failed to promulgate regulations that the plaintiff believed the Agency had a mandatory duty to adopt.² This pattern was in part the product of EPA's slowness in bringing the program up to speed and uncertainties produced by the 1977 amendments. It may also have had to do with a perception that the government's pre-1980 enforcement efforts were adequate.

Whatever the reasons, few citizen suits seeking direct enforcement of the Act were filed against dischargers until 1982. At that point, however, a veritable explosion of citizen suits occurred, fueled by a widespread perception within the environmental activist community that EPA's commitment to water and air pollution enforcement was less than vigorous,³ the belief that state enforcement programs were either woefully underfunded or suffered from the same sorts of political inertia that had plagued them prior to passage of the Act, and the availability of an award of attorneys fees to successful plaintiffs.

A number of issues raised by the language of § 505 thus lay unexposed until the lawsuits of the early and mid-1980s aired many of those issues, which are discussed below. In the one decision involving a constitutional challenge to CWA citizen suits, *Chesapeake Bay Found. v. Bethlehem Steel Corp.*,⁴ § 505 was held not to be in contravention of the separation of powers doctrine.

§ 13:125 Citizen suits—Jurisdiction and prerequisites

Section 505 authorizes any "citizen"¹ to commence a citizen suit "on his own behalf"² against any other "person"³ who is "alleged to be in violation of (A) an efflu-

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¹S. Rep. No. 92-414, at 79 (1971).

²See, e.g., *Nat. Res. Def. Council, Inc. v. Train*, 561 F.2d 904, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20547 (D.C. Cir. 1977) (toxic pollutants); *Nat. Res. Def. Council, Inc. v. Train*, 396 F. Supp. 1393, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20401 (D.D.C. 1975) (§ 208 planning).

³EPA's budget for water and air pollution enforcement was cut significantly during the first Reagan Administration, and EPA's enforcement program was reorganized in a way that critics claimed deemphasized enforcement. Few, if any, air pollution enforcement actions have been mounted by citizen groups, primarily because the Clean Air Act regulatory scheme does not produce easily provable cases of violation.

⁴*Chesapeake Bay Found. v. Bethlehem Steel Corp.*, 652 F. Supp. 620, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20623 (D. Md. 1987).

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¹Whether the phrase "citizen" encompasses a state as plaintiff has been addressed by several courts, with disparate results. Three courts have held that a state is a "citizen" for § 505 purposes. See *Massachusetts v. United States Veterans Admin.*, 541 F.2d 119, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20666 (1st Cir. 1976); *Illinois v. Outboard Marine Corp.*, 619 F.2d 623, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20323 (7th Cir. 1980), *vacated and remanded on other grounds*, 453 U.S. 917 (1981); *Nat'l Wildlife Fed'n v. Ruckelshaus*, 99 F.R.D. 558, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20845 (D.N.J. 1983). Two courts have held otherwise. See *United States v. City of Hopewell*, 508 F. Supp. 526, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20474 (E.D. Va. 1980); *California v. Department of the Navy*, 24 Env 1177 (N.D. Cal. 1986). The Supreme Court settled the issue in 1992 in *U.S. Dept. of Energy v. Ohio*, 503 U.S. 607, 112 S. Ct. 1627, 22 Env'tl. L. Inst. (Env'tl. L. Rep.) 20804 (1992). A state is a "citizen" under the Clean Water Act.

²This phrase was inserted to preclude class actions. See S. Rep. No. 92-414, at 91 (1971); *Brown v. Ruckelshaus*, 364 F. Supp. 258, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20834 (C.D. Cal. 1973). *But see* *New York City v. Ruckelshaus*, 358 F. Supp. 669, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20410 (D.D.C. 1973), *aff'd*, 494 F.2d 1033 (D.C. Cir. 1974), *aff'd* 420 U.S. 35 (1975).

³Section 505(a)(1)(i) provides that the term "person" includes the United States, and the courts

ent standard or limitation under this Act⁴ or (B) an order issued by the Administrator or a State with respect to such standard or limitation.”⁵ In addition, a suit may be brought against EPA to compel the performance of a nondiscretionary act.⁶ The Eleventh Circuit has held that such a suit may not be brought against the Corps, which is authorized to regulate the discharge of dredged or fill material into waters of the United States, including wetlands, because § 505(a)(2) does not clearly and unambiguously waive the Corps’ sovereign immunity.⁷

Section 505 citizen suits may be brought in the United States district courts⁸ without regard to jurisdictional amounts or diversity,⁹ although the term “citizen” is defined so as not to preclude the requirement that a plaintiff demonstrate the existence of standing to sue, requiring the plaintiff to demonstrate the existence of an

have not been hesitant to allow citizen suits against federal facilities. *See, e.g.*, *Sierra Club v. Department of the Interior*, 728 F. Supp. 1513, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20650 (D. Colo. 1990), *aff’d*, 931 F.2d 1421, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 21195 (10th Cir. 1991), *vacated and remanded*, *Lujan v. Sierra Club*, 504 U.S. 902 (1992). *See* § 13:144.

⁴Section 505(f) defines this phrase as

(1) . . . an unlawful act under subsection (a) of section 301 . . . ; (2) an effluent limitation or other limitation under § 301 or 302 . . . ; (3) standard or performance under § 306 . . . ; (4) prohibition, effluent standard or pretreatment standard under § 307 . . . ; (5) certification under § 401, or . . . ; (6) a permit or condition thereof issued under § 402 . . . which is in effect (including a requirement applicable by reason of § 313)

Discharges that contribute to violations of state water quality standards are subject to citizen suits. *See* *Montgomery Env’tl. Coal. v. Fri*, 366 F. Supp. 261, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20182 (D.D.C. 1973). *But see* *O’Leary v. Moyer’s Landfill, Inc.*, 523 F. Supp. 2d 642 (E.D. Pa. 1981). Indeed, § 505(a) has been held to confer jurisdiction for citizen suits to enforce water quality standards that are stated as conditions of an NPDES permit, even if those standards have not been expressed as effluent standards. *Northwest Env’tl. Advocates v. City of Portland*, 56 F.3d 979, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 21250 (9th Cir. 1995), *reh’g and suggestion for reh’g en banc denied*, 74 F.3d 945, 26 Env’tl. L. Rep. (Env’tl. L. Inst.) 20707 (9th Cir.1996), *cert. denied*, 116 S. Ct. 2550 (1996). CWA § 505(a) does not authorize citizen suits challenging the contents of a permit application. *See* *Mississippi River Revival v. Administrator*, 107 F. Supp. 2d 1008 (D. Minn. 2000). Although citizen suits seeking compliance with § 404 have been brought and adjudicated on the merits, there are linguistic and structural problems with the notion that a § 505 citizen suit may be brought to enforce a § 404 permit requirement. *See* § 13:93.

⁵CWA § 505(a)(1), 33 U.S.C.A. § 1365(a)(1). The court construed these provisions liberally in *Hudson River Fishermen’s Ass’n v. Cty. of Westchester*, 686 F. Supp. 1044, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 21451 (S.D.N.Y. 1988), holding that discharges from a drainage pipe leading from a county landfill are subject to citizen suits where plaintiffs can show that the pipe is the *type* of point source regulated under the Act. However, the Sixth Circuit in *Askins v. Ohio Dept. of Agriculture*, 809 F.3d 868, 874-75, 46 Env’tl. L. Rep. (Env’tl. L. Inst.) 20010 (6th Cir. 2016), held that there is no private cause of action under the CWA against regulators for violating procedural requirements, finding that the CWA did not permit a citizen suit for the agency’s violation of the notification requirement in 33 U.S.C.A. § 1342(i)(2).

⁶CWA § 505(a)(2), 33 U.S.C.A. § 1365(a)(2).

⁷*Preserve Endangered Areas of Cobb’s History, Inc. v. U.S. Army Corps of Eng’rs*, 87 F.3d 1242, 1249 (11th Cir. 1996). The court acknowledged that its holding disagrees with *Nat’l Wildlife Fed’n v. Hanson*, 859 F.2d 313, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 21509 (4th Cir. 1988), which upheld the validity of a § 505(a)(2) suit against the Corps. *Preserve Endangered Areas of Cobb’s History, Inc. v. U.S. Army Corps of Eng’rs*, 87 F.3d 1242, 1249 n.5 (11th Cir. 1996). In addition, the Eleventh Circuit held that § 505 does not apply to a suit alleging that EPA failed to overrule a Corps permit decision. The court concluded that the Act does not permit such a suit, because EPA’s power under § 404(c) to veto a Corps decision is discretionary. *Preserve Endangered Areas of Cobb’s History, Inc. v. U.S. Army Corps of Eng’rs*, 87 F.3d 1242, 1249 n.5, 26 Env’tl. L. Rep. (Env’tl. L. Inst.) 21449 (11th Cir. 1996).

⁸Venue is mandatory in the judicial district where the source is located. CWA § 505(c)(1), 33 U.S.C.A. § 1365(c)(1). One federal court has held that a citizen suit to enforce a failure of EPA to perform a nondiscretionary duty under § 505(a)(2), 33 U.S.C.A. § 1365(a)(2), is not subject to any statute of limitations. *Nat. Res. Def. Council, Inc. v. Fox*, 909 F. Supp. 153, 26 Env’tl. L. Rep. (Env’tl. L. Inst.) 20732 (S.D.N.Y. 1995).

⁹*Nat. Res. Def. Council, Inc. v. Fox*, 909 F. Supp. 153, 26 Env’tl. L. Rep. (Env’tl. L. Inst.) 20732 (S.D.N.Y. 1995).

interest that is or may be “adversely affected.”¹⁰

§ 13:126 Citizen suits—Jurisdiction and prerequisites—Standing

Organizational plaintiffs do not have a sufficient degree of interest to sue in their own right.¹ Thus, under the Act, citizen suits must be brought by individuals who satisfy the statutory “adverse interest” test and the constitutional “injury in fact” test,² or organizations suing as representatives of their members who satisfy these tests.³ They must also make a showing that the violations are “redressable.”⁴

The degree of “injury” required to be alleged has been litigated in a number of cases. The Second Circuit introduced a refinement of the general standing requirement applicable to CWA citizen suits in *Sierra Club v. SCM Corp.*⁵ The court required an organization to provide a “concrete indication” that one or more of its members used the water body that was being polluted or would otherwise somehow be affected by its pollution. Monetary harm or property or health impacts, however, need not be alleged or proven.⁶ However, the Third Circuit has held that an association member’s knowledge that effluent limits have been exceeded and lessened the enjoyment of recreational water bodies does not, by itself, demonstrate injury or threat of injury.⁷ The Third Circuit has further concluded that a defendant discharger’s failure to comply with monitoring and reporting requirements would not provide an independent basis for standing where the underlying exceedances

¹⁰CWA § 505(g), 33 U.S.C.A. § 1365(g), defines “citizen” as “a person having an interest which is or may be adversely affected.” See discussion of this point in *Chesapeake Bay Found. v. Bethlehem Steel Corp.*, 608 F. Supp. 440, 15 Env’t. L. Rep. (Env’t. L. Inst.) 20875 (D. Md. 1985).

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¹See, e.g., *Sierra Club v. Morton*, 405 U.S. 727, 2 Env’t. L. Rep. (Env’t. L. Inst.) 20192 (1972).

²*Sierra Club v. Morton*, 405 U.S. 727, 2 Env’t. L. Rep. (Env’t. L. Inst.) 20192 (1972); see also *Town of Abita Springs v. U.S. Army Corps of Engineers*, 153 F. Supp. 3d 894, 82 Env’t. Rep. Cas. (BNA) 1055 (E.D. La. 2015) (a municipality may not simply assert the injuries of its citizens, but must sue to protect its own proprietary interests); *National Wildlife Federation v. U.S. Army Corps of Engineers*, 82 Env’t. Rep. Cas. (BNA) 1540, 2016 WL 1048767 (D.D.C. 2016) (“[T]he conservation groups have put forth at least one member who stated a substantive injury-in-fact.”).

³*Conservation Law Foundation, Inc. v. Jackson*, 964 F. Supp. 2d 152, 77 Env’t. Rep. Cas. (BNA) 1664 (D. Mass. 2013) (finding that an environmental organization had standing on behalf of its members to assert claim against EPA under the CWA where organization asserted its members used the area for swimming, fishing, and boating); see also *Friends of Mariposa Creek v. Mariposa Public Utilities District*, 82 Env’t. Rep. Cas. (BNA) 1633, 2016 WL 1587228 (E.D. Cal. 2016), motion to certify appeal denied, 2016 WL 3746535 (E.D. Cal. 2016) (conservation group satisfies standing requirements if one member of the group has standing).

⁴See *Student Pub. Interest Research Group v. AT & T Bell Labs.*, 617 F. Supp. 1190, 1200-02, 15 Env’t. L. Rep. (Env’t. L. Inst.) 21051, 21055-21056 (D.N.J. 1985); see also *National Ass’n of Home Builders v. E.P.A.*, 786 F.3d 34, 80 Env’t. Rep. Cas. (BNA) 1757 (D.C. Cir. 2015). The courts have generally required only a general public benefit or deterrence effect. *Student Public Interest Research Group of New Jersey, Inc. v. Hercules, Inc.*, 23 Env’t. Rep. Cas. (BNA) 2081, 1986 WL 6380 (D.N.J. 1986); cf. *Gonzales v. Gorsuch*, 688 F.2d 1263, 13 Env’t. L. Rep. (Env’t. L. Inst.) 20072 (9th Cir. 1982), and *In re Wheeling-Pittsburgh Steel Corp.*, 1989 U.S. Dist. LEXIS 17415, 29 Env 1495 (Bankr. W.D. Pa. 1989) (citizen suit is not subject to automatic stay provision of 11 U.S.C.A. § 362 where suit relates to violations occurring after bankruptcy petition and debtor is likely to go through reorganization).

⁵*Sierra Club v. SCM Corp.*, 747 F.2d 99, 14 Env’t. L. Rep. (Env’t. L. Inst.) 20890 (2d Cir. 1984).

⁶See *Friends of the Earth v. Conrail*, 768 F.2d 57, 60-61, 15 Env’t. L. Rep. (Env’t. L. Inst.) 20674, 20676 (2d Cir. 1985); *Student Pub. Interest Research Group v. AT & T Bell Labs.*, 617 F. Supp. 1190, 15 Env’t. L. Rep. (Env’t. L. Inst.) 21051 (D.N.J. 1985) (aesthetic impact sufficient).

⁷See, e.g., *Public Interest Research Group of N.J., Inc. v. Magnesium Elektron, Inc.*, 123 F.3d 111, 27 Env’t. L. Rep. (Env’t. L. Inst.) 21340 (3d Cir. 1997). But see *PennEnvironment v. PPG Industries, Inc.*, 23 F. Supp. 3d 553 (W.D. Pa. 2014) (finding that plaintiffs alleged sufficient injury to satisfy the standing requirements where they not only alleged knowledge, but also submitted evidence that the pollution would affect the members’ recreational activities).

caused no harm.⁸

The Supreme Court dealt with the issue of citizen standing in *Friends of the Earth v. Laidlaw Environmental Service*.⁹ In *Laidlaw*, the Fourth Circuit had held that environmental groups lacked standing to bring suit against a corporation whose NPDES violations continued at the time the suit was filed because any penalties paid would benefit the United States Treasury and would not directly benefit the environmental groups. The Court rejected this argument noting that civil penalties provide a form of redress to the citizen plaintiffs because they may encourage defendants to discontinue current violations and may deter future ones. In addition, the Court stated that claims do not automatically become moot once the company has come into substantial compliance with its permit requirements. Rather, the company has the burden of persuading the court that the challenged conduct cannot reasonably be expected to recur.

Although the courts have required plaintiffs to provide a factual predicate for allegations for injury, that requirement has not hampered plaintiffs, and it has usually been satisfied by affidavits filed in response to interrogatories, without a requirement that specific personal harm be alleged or that specific names of members be identified.¹⁰

§ 13:127 Citizen suits—Jurisdiction and prerequisites—Notice to the government and the government enforcement bar

Section 505(b) precludes commencement of a citizen suit against a discharger prior to sixty days after the plaintiff has given written notice of the alleged violation to EPA,¹ the state in which the violation occurs, and the alleged violator. An amendment to the statute in 1987 added a requirement that the United States be served with the complaint when it is filed. The statute also bars a suit if EPA or the affected state “is diligently prosecuting a civil or criminal action in a court of the

⁸Public Interest Research Group of N.J., Inc. v. Magnesium Elektron, Inc., 123 F.3d 111, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 21340 (3d Cir. 1997).

⁹*Friends of the Earth v. Laidlaw Env'tl. Serv.*, 528 U.S. 167, 120 S. Ct. 693 (2000). *See also* *Friends of the Earth, Inc. v. Gaston Copper Recycling Corp.*, 179 F.3d 107 (4th Cir. 1999) (holding that citizens claiming that a facility had violated its NPDES permit would need to establish injury in fact by submitting tests and studies showing that the waters they used were polluted and that the pollutants could be traced to the alleged violator's facility), *rev'd en banc and rev'd*, 204 F.3d 149, 30 Env'tl. L. Rep. (Env'tl. L. Inst.) 20369 (4th Cir. 1999) (finding that the trial court had created an evidentiary barrier to standing that the Constitution did not require and that Congress did not embrace).

¹⁰*See* *Piney Run Preservation Ass'n v. Cty. Comm'rs of Carroll County, Md.*, 50 F. Supp. 2d 443, 29 Env'tl. L. Rep. (Env'tl. L. Inst.) 21424 (D. Md. 1999) (holding that citizens may bring suit for violations involving a pollutant that is not listed on the alleged polluter's NPDES permit); *Nat. Res. Def. Council, Inc. v. Outboard Marine Corp.*, 692 F. Supp. 801, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20279 (N.D. Ill. 1988); *Student Pub. Interest Research Grp. v. Tenneco Polymers, Inc.*, 602 F. Supp. 1394, 1397, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20309, 20311 (D.N.J. 1985); *see also* *Chesapeake Bay Found. v. Gwaltney of Smithfield, Ltd.*, 611 F. Supp. 1542, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20663 (E.D. Va. 1985), *aff'd*, 791 F.2d 304, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20636 (4th Cir. 1986), *rev'd in part*, 484 U.S. 49, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20142 (1987). *Cf.* *Proffitt v. Lower Bucks Cty. Joint Mun. Auth.*, 877 F.2d 57 (Table), 29 ERC 1696 (3d Cir. 1989) (plaintiffs failed at trial to prove facts establishing standing); *Pub. Interest Research Grp. of N.J., Inc. v. Magnesium Elektron, Inc.*, 123 F.3d 111, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 21340 (3d Cir. 1997) (vacating judgment and permanent injunction because plaintiff association failed to allege sufficient facts to establish standing).

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¹CWA § 505(b)(1)(A), 33 U.S.C.A. § 1365(b)(1)(A). EPA's citizen suit notice requirements are set forth at 40 C.F.R. Part 135. To satisfy those requirements, notice must contain, at a minimum, “some reasonably specific indication” of the time period in which the alleged violations occurred, though specific dates need not be included. *See, e.g., Hudson Riverkeeper Fund, Inc. v. Putnam Hosp. Ctr., Inc.*, 891 F. Supp. 152, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 21583 (S.D.N.Y. 1995).

United States of a State to require compliance with” the standard or limitation sought to be enforced,² and, as discussed below, a 1987 amendment to § 309 provides that citizen suits may be barred by certain types of administrative orders. Citizens may intervene as a matter of right in any pending government enforcement action, however,³ and they have a right to comment on, can force hearings with respect to, and appeal administrative penalty assessments.⁴

The sixty-day notice requirement is jurisdictional,⁵ and thus failure to provide the requisite notice is fatal to any proposed citizen suit.⁶ Moreover, the sixty-day notice must provide the defendant with a reasonable indication of when the alleged violations occurred.⁷ The time period alleged in the sixty-day notice does not, however, prevent a plaintiff from filing a complaint based on subsequently discovered monitoring, reporting, or recordkeeping claims of the same parameter, outfall, and time period not specifically mentioned in the sixty-day notice.⁸ Nor is a plaintiff prevented from filing a complaint based on discharges from a separate outfall not specifically identified in the notice, when the alleged polluter, upon receiving notice with respect to one offending outfall, simply redirects the stream of contaminated wastewater to another outfall.⁹

Just what sort of government enforcement action will bar a citizen suit has been the subject of significant controversy. The issue most frequently raised by defendants has been whether a federal or state *administrative* enforcement action will preclude a citizen suit. The issue has been dealt with in two different ways, both of which ultimately lead, however, to the same result.

The Second Circuit, in *Friends of the Earth v. Consolidated Rail Corp.*,¹⁰ taking a literal reading of the statute, held that under no circumstances could an administra-

²CWA § 505(b)(1)(B), 33 U.S.C.A. § 1365(b)(1)(B). A mandamus-type action may be brought against EPA within less than sixty days following notice if the suit seeks to compel action under §§ 306 or 307. *See Jones v. City of Lakeland*, 224 F.3d 518 (6th Cir. 2000) (holding that a state agency’s ten-year administrative enforcement action does not rise to the level of a federal or state court action nor is it “diligent prosecution”).

³CWA § 505(b)(1)(B), 33 U.S.C.A. § 1365(b)(1)(B).

⁴CWA §§ 309(g)(4), 309(g)(8), 33 U.S.C.A. §§ 1319(g)(4), 1319(g)(8), amended by Pub. L. No. 100-4, § 314, 101 Stat. 46-48 (1987).

⁵*See Middlesex Cty. Sewerage Auth. v. Nat’l Sea Clammers Ass’n*, 453 U.S. 1, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20684 (1981).

⁶*See City of Highland Park v. Train*, 519 F.2d 681, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20408 (7th Cir. 1975), *cert. denied*, 424 U.S. 927 (1976). *But cf. Susquehanna Valley Alliance v. Three Mile Island Nuclear Reactor*, 619 F.2d 231, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20235 (3d Cir. 1980), *cert. denied*, 449 U.S. 1096 (1981); *Hempstead Cty. & Nev. Cty. Project v. EPA*, 700 F.2d 459, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20385 (8th Cir. 1983). Occasionally, defendants have argued that a notice covering a pattern of violations is valid only to support a suit to redress those violations specifically listed, and will not support a suit addressing continuing violations. Such an argument was rejected in *Chesapeake Bay Found. v. Bethlehem Steel Corp.*, 608 F. Supp. 400, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20785 (D. Md. 1985).

⁷*Hudson Riverkeeper Fund, Inc. v. Putnam Hosp. Ctr., Inc.*, 891 F. Supp. 152, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 21583 (S.D.N.Y. 1995) (dismissing plaintiff’s citizen suit based on its failure to “indicate any time-frame during which the alleged violations occurred”).

⁸*See, e.g., Pub. Interest Research Grp. of N.J., Inc. v. Hercules, Inc.*, 50 F.3d 1239, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 20684 (3d Cir. 1995). *But see Little v. Louisville Gas and Elec. Co.*, 33 F. Supp. 3d 791, 79 Env’t. Rep. Cas. (BNA) 1807 (W.D. Ky. 2014), order *aff’d* in part, 805 F.3d 695, 81 Env’t. Rep. Cas. (BNA) 1565, 92 Fed. R. Serv. 3d 1551 (6th Cir. 2015) (rejecting *Hercules* and following the rule in the Sixth Circuit, “which requires plaintiff to strictly comply with all notice requirements”).

⁹*See, e.g., Atlantic States Legal Found., Inc. v. Stroh Die Casting Co.*, 116 F.3d 814, 27 Env’tl. L. Rep. (Env’tl. L. Inst.) 21087 (7th Cir. 1997), *cert. denied*, 522 U.S. 981, 118 S. Ct. 442 (1997).

¹⁰*Friends of the Earth v. Consolidated Rail Corp.*, 768 F.2d 57, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20674 (2d Cir. 1985).

tive enforcement proceeding bar a citizen suit.¹¹ The Ninth Circuit has adopted the Second Circuit's position.¹² The Third Circuit did not take such a clean approach, deciding that whether administrative action will bar a citizen suit must be decided on a case-by-case basis, considering whether the administrative action is equivalent to a lawsuit in court.¹³ The First Circuit appears to have concluded that state administrative action does constitute a bar, even where it takes the form of an administrative consent order that does not impose monetary penalties.¹⁴ Federal district courts in circuits other than the Second and Third have generally followed one or the other of these approaches, but few have barred a citizen suit because of administrative enforcement.¹⁵ The issue was addressed and resolved by Congress to some extent in 1987 with the enactment of § 309(g), which authorizes administrative penalties. A final § 309(g) order in a proceeding that was begun either before a citizen suit was filed, or after the expiration of 120 days following issuance of a citizen suit notice by the plaintiff, bars a citizen suit.¹⁶ By implication, any other administrative order would appear not to be a bar to a subsequent citizen suit.

Just when a federal or state enforcement action is *commenced*, for the purpose of determining whether a citizen suit is barred, has also been an issue. Although judicial attention to the issue is limited, the courts addressing it have unanimously concluded that the term relates to the actual filing dates of the respective actions and have refused to bar citizen suits that have beat the government to the

¹¹The Second Circuit subsequently held, in *Atlantic States Legal Found. v. Eastman Kodak Co.*, 933 F.2d 124, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 21047 (2d Cir. 1991), that a consent decree between the state and the violator precludes an environmental group from prosecuting its action, even though the citizen suit preceded the decree, on the theory that there was no likelihood of recurrence of the violations.

¹²*Sierra Club v. Chevron U.S.A., Inc.*, 834 F.2d 1517, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20237 (9th Cir. 1987).

¹³*Baughman v. Bradford Coal Co.*, 592 F.2d 215, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20147 (3d Cir. 1979), *cert. denied*, 441 U.S. 961 (1979); *cf.* *SPIRG v. Fritzche, Dodge & Olcott, Inc.*, 759 F.2d 1131, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20427 (3d Cir. 1985) (holding that EPA's administrative proceedings flunk the *Baughman* test because EPA possesses no authority to impose civil penalties, and its administrative proceedings do not afford the procedural safeguards found in court proceedings).

¹⁴*See North & S. Rivers Watershed Ass'n, Inc. v. Town of Scituate*, 949 F.2d 552, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20437 (1st Cir. 1991).

¹⁵*See, e.g., Md. Waste Coal. v. S.C.M. Corp.*, 616 F. Supp. 1474, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20158 (D. Md. 1985) (following *Conrail*); *Sierra Club v. Simkins Indus.*, 617 F. Supp. 1120, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 21012 (D. Md. 1985) (following *Baughman*); *Sierra Club v. Kerr-McGee Corp.*, 1985 U.S. Dist. LEXIS 14468, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20083 (W.D. La. 1985).

¹⁶CWA § 309(g)(6), 33 U.S.C.A. § 1319(g)(6). For cases interpreting these provisions, see, e.g., *Citizens for a Better Env't-Cal. v. Union Oil Co. of Cal.*, 83 F.3d 1111, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 21152 (9th Cir. 1996) (defendant's payment to regional NPDES permitting authority to avoid an enforcement action was not a "penalty" and therefore did not trigger the § 309(g)(6)(A)(iii) bar to citizen suits), *cert. denied*, 519 U.S. 1101, 117 S. Ct. 789 (1997); *Orange Env't, Inc. v. Cty. of Orange*, 923 F. Supp. 529, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 21383 (S.D.N.Y. 1996) (defendant's compliance with an EPA order requiring off-site remediation of wetlands rendered landfill in compliance with Act so as to bar citizen suit claims for injunctive relief, even though on-site wetlands that had been filled had not been restored), *aff'd* 2 F.3d 1235 (2d Cir. 1993); *Arkansas Wildlife Fed'n v. Bekaert Corp.*, 791 F. Supp. 769, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 21438 (W.D. Ark. 1992) (citizen suit is barred only where the federal government is in fact seeking to impose penalties, not where the government has merely issued a compliance order); *Conn. Coastal Fishermen's Ass'n v. Remington Arms*, 777 F. Supp. 173, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20483 (D. Conn. 1991) (citizen suit barred where a state agency conducting enforcement proceedings has authority to assess civil penalties, even if none are imposed), *aff'd in part & rev'd in part on other grounds*, 989 F.2d 1305, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20699 (2d Cir. 1993); *N.Y. Coastal Fishermen's Ass'n v. Dep't of Sanitation*, 772 F. Supp. 162, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20183 (S.D.N.Y. 1991); *Atl. States Legal Found. Inc. v. Tyson Foods, Inc.*, 682 F. Supp. 1186, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20924 (N.D. Ala. 1988).

courthouse by a few days¹⁷ or even a few hours.¹⁸

In such a circumstance, however, a defendant is likely to raise the abstention doctrine as an alternate ground for delaying action on the citizen suit. In such cases, the analysis used to determine whether to proceed is the so-called *Colorado River* doctrine.¹⁹

§ 13:128 Citizen suits—Jurisdiction and prerequisites—The “Gwaltney Bar”

In *Hamker v. Diamond Shamrock Chem. Co.*,¹ the Fifth Circuit held that the phrase “to be in violation” contained in § 505(a)(1) was jurisdictionally limiting and thus barred any citizen suit seeking to address violations that were not ongoing at the time the suit was filed. In other words, if the violator cured the problem, or ceased the discharge, or if the suit sought only penalties for past violations, it could not be brought.

Hamker was either expressly rejected or ignored in most federal district courts outside of the Fifth Circuit that addressed the issue.² Of the other courts of appeals, the First Circuit agreed with *Hamker*,³ and the Fourth Circuit disagreed, holding in *Chesapeake Bay Found. v. Gwaltney of Smithfield*⁴ that the phrase “is in violation” in § 505 encompasses the situation where a discharger has committed a violation that has not been redressed.

The difference between *Hamker* and the courts refusing to follow it is in part due to a difference in the role seen for citizen suits in the Act. The Fifth Circuit in *Hamker* viewed citizen suits as merely ancillary to government enforcement and as a vehicle to stop ongoing pollution. Courts declining to follow it have tended to view the citizen suit provision as more central to the Act’s scheme⁵ or have delved deeply

¹⁷See, e.g., *Connecticut Fund for the Env’t v. Upjohn Co.*, 660 F. Supp. 1397, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 21137 (D. Conn. 1987).

¹⁸See, e.g., *Chesapeake Bay Found. v. American Recovery Co.*, 769 F.2d 207, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20056 (4th Cir. 1985).

¹⁹See analysis in *Connecticut Fund for the Env’t v. Upjohn Co.*, 660 F. Supp. 1397, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 21137 (D. Conn. 1987).

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¹See, e.g., *Hamker v. Diamond Shamrock Chem. Co.*, 756 F.2d 392, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20385 (5th Cir. 1985); see also *Sierra Club v. Shell Oil Co.*, 817 F.2d 1169, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20767 (5th Cir. 1987).

²See, e.g., *Chesapeake Bay Found. v. Gwaltney of Smithfield, Ltd.*, 611 F. Supp. 1542, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20663 (E.D. Va. 1985), *aff’d*, 791 F.2d 304, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20636 (4th Cir. 1986), *vacated sub nom.* *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found.*, 484 U.S. 49, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20142 (1987); *Conn. Fund for the Env’t v. Job Plating Co.*, 623 F. Supp. 207, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20596 (D. Conn. 1985); *SPIRG v. Georgia-Pacific Corp.*, 615 F. Supp. 1419, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20039 (D.N.J. 1985); *SPIRG v. AT & T Bell Labs.*, 617 F. Supp. 1190, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 21051 (D.N.J. 1985); *Sierra Club v. Simkins Indus.*, 617 F. Supp. 1120, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 21012 (D. Md. 1985); *Ohio Valley Environmental Coalition, Inc. v. Hernshaw Partners, LLC*, 984 F. Supp. 2d 589 (S.D. W. Va. 2013). The only reported decisions outside of the Fifth Circuit following *Hamker* are *Pawtuxet Cove Marina, Inc. v. Ciba-Geigy Corp.*, 22 Env 1999 (D.R.I. 1985) and *Wilson v. Amoco Corp.*, 33 F. Supp. 2d 969 (D. Wyo. 1998).

³*Pawtuxet Cove Marina, Inc. v. Ciba-Geigy Corp.*, 807 F.2d 1089, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20374 (1st Cir. 1986) (holding no cause of action for violations of permit subsequently terminated); see also *Sierra Club v. Shell Oil Co.*, 817 F.2d 1169, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20767 (5th Cir. 1987) (following *Hamker*).

⁴*Chesapeake Bay Found. v. Gwaltney of Smithfield*, 791 F.2d 304, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20636 (4th Cir. 1986), *vacated*, 484 U.S. 49, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20142 (1987).

⁵See *SPIRG v. AT & T Bell Labs.*, 617 F. Supp. 1190, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 21051

into the legislative history of the Act to find language supporting the view that citizen suits can address past conduct.⁶

The Supreme Court addressed the issue in the appeal of the Fourth Circuit's *Gwaltney* decision. In *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found.*,⁷ the Supreme Court adopted the Fifth Circuit's view on the question of citizen suits based exclusively on past violations, concluding that such suits would be inconsistent with the syntax and structure of the Act's enforcement scheme. The Supreme Court's reasoning on this point is convincing.⁸

The Supreme Court agreed with the First Circuit, however, on a second issue, holding that section "505 confers jurisdiction over citizen suits when the citizen-plaintiffs make a good faith allegation of continuous or intermittent violations."⁹ In so ruling, the Supreme Court was persuaded by arguments made in a friend of the court brief by the federal government, which argued that "Congress's use of the phrase 'alleged to be in violation' reflects a conscious sensitivity to the practical difficulties of detecting and proving chronic episodic violations of environmental standards."¹⁰

In response to arguments that this ruling would give citizen litigants a license to avoid the past violations bar by making unsupported allegations, the Supreme Court indicated that either Rule 11¹¹ of the Federal Rules of Civil Procedure and the standing requirements of *United States v. SCRAP*¹² provide defendants with adequate protection against such suits. In the wake of *Gwaltney*, however, courts have held that the burden of coming forward with evidence to show the plaintiff's allegation is false rests on the defendant at the summary judgment stage.¹³

On appeal from the district court after the Supreme Court's remand of *Gwaltney*, the Fourth Circuit held that an action for penalties based on past violations of a particular NPDES permit parameter will only lie if there was an ongoing violation

(E.D. Va. 1985).

⁶See *Chesapeake Bay Found. v. Gwaltney of Smithfield, Ltd.*, 611 F. Supp. 1542, 15, 22 Env't Rep. Cas. (BNA) 2121, 15 Env't. L. Rep. 20663 (E.D. Va. 1985), *judgment aff'd*, 791 F.2d 304, 24 Env't Rep. Cas. (BNA) 1417, 16 Env't. L. Rep. 20636 (4th Cir. 1986) (rejected by, *Sierra Club v. Shell Oil Co.*, 817 F.2d 1169, 25 Env't Rep. Cas. (BNA) 2061, 17 Env't. L. Rep. 20767 (5th Cir. 1987)) and *judgment vacated*, 484 U.S. 49, 18 Env't. L. Rep. 20142 (1987) (viewing statutory language as ambiguous and relying on a statement made by Senator Muskie in the Senate floor debate, 118 Cong. Rec. 33700 (1972)).

⁷*Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found.*, 484 U.S. 49, 18 Env't. L. Rep. (Env't. L. Inst.) 20142 (1987).

⁸On this issue, the decision was unanimous.

⁹*Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found.*, 484 U.S. 49, 64, 18 Env't. L. Rep. (Env't. L. Inst.) 20142 (1987). Three justices—Scalia, Stevens, and O'Connor—disagreed with this conclusion, though upon a close reading of both the majority and concurring opinions, it is far from clear that their disagreement is truly one of substance.

¹⁰*Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found.*, 484 U.S. 49, 64, 18 Env't. L. Rep. (Env't. L. Inst.) 20142 (1987) (quoting Brief for United States as *Amicus Curiae* at 18). Interpreting *Gwaltney*, the court in *Pub. Interest Research Grp. of N.J. v. Carter-Wallace, Inc.*, 684 F. Supp. 115, 18 Env't. L. Rep. (Env't. L. Inst.) 21064 (D.N.J. 1988), held that a citizen suit may seek penalties for precomplaint violations of an expired permit on the basis of permit conditions that have been carried over to the current permit and are presently in force.

¹¹Rule 11 requires, inter alia, that pleadings be based on a good faith belief, formed after reasonable inquiry, that they are "well-grounded in fact."

¹²*United States v. SCRAP*, 412 U.S. 669, 3 Env't. L. Rep. (Env't. L. Inst.) 20536 (1973).

¹³*Alt. States Legal Found., Inc. v. Stroh Die Casting Co.*, 116 F.3d 814, 27 Env't. L. Rep. (Env't. L. Inst.) 21087 (7th Cir. 1997), *cert. denied*, 522 U.S. 981, 118 S. Ct. 442 (1997); *Carr v. Alta Verde Indus., Inc.*, 931 F.2d 1055, 21 Env't. L. Rep. (Env't. L. Inst.) 21005 (5th Cir. 1991).

of that specific parameter at the time the action was commenced.¹⁴

§ 13:129 Citizen suits—Jurisdiction and prerequisites—Statute of limitations

The practical effect of the *Gwaltney* decision, discussed above, would be to bar citizen suits in which no prospective injunctive relief is sought, essentially prohibiting actions for penalties for wholly past violations. The same result could be obtained, at least to limit the number of permit violations for which penalties are assessable, by application of a statute of limitations to past violations.

Whether any statute of limitations applies to § 505, and if so what statute, is a matter on which reasonable minds have differed. The federal courts in New Jersey have generally concluded that there is no statute of limitations applicable to § 505.¹ Federal courts in other states have tended to apply the five-year statute of limitations of 28 U.S.C.A. § 2462.² Although defendants have attempted to claim applicability of shorter state statutes of limitation, the arguments have uniformly been rejected on the grounds that a uniform period of limitation is more consistent with the Act's scheme.³

§ 13:130 Citizen suits—Defenses going to the merits

Citizen suit defendants have tended to proffer two “standard” defenses in CWA

¹⁴*Chesapeake Bay Found. v. Gwaltney of Smithfield, Ltd.*, 890 F.2d 690, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20341 (4th Cir. 1989). *Gwaltney* did not resolve all of the issues associated with the citizen suit bar. With regard to mootness, which generally becomes an issue when the defendant has completed upgrades during the pendency of the suit, *compare* *Atl. States Legal Found. v. Tyson Foods, Inc.*, 897 F.2d 1128, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20788 (11th Cir. 1990) (mootness doctrine applies only to claims for injunctive relief and does not affect claims to recover damages for justiciable violations) *and* *Atl. States Legal Found., Inc. v. Stroh Die Casting Co.*, 116 F.3d 814, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 21087 (7th Cir. 1997), *cert. denied*, 522 U.S. 981, 118 S. Ct. 442 (1997) (case does not become moot even though violation is cured while suit is pending because civil penalties are recoverable for any time period in which defendant is found to be in violation) *with* *Atl. States Legal Found., Inc. v. Eastman Kodak Co.*, 933 F.2d 124, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 21047 (2d Cir. 1991) (drawing no distinction between mootness of claims for injunctive relief versus claims for monetary relief). For other post-*Gwaltney* decisions, see *North & S. Rivers Watershed Ass'n, Inc. v. Town of Scituate*, 949 F.2d 552, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20437 (1st Cir. 1992) (bar extends to actions seeking injunctive relief as well as those seeking civil penalties); *Nat'l Res. Def. Council, Inc. v. Gould, Inc.*, 733 F. Supp. 8, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20815 (D. Mass. 1990) (penalty determination will be linked to proof that defendant committed post-complaint violations); *Student Pub. Interest Research Group of N.J. v. Monsanto Co.*, 727 F. Supp. 876, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20768 (D.N.J. 1989), *aff'd without opinion*, 891 F.2d 283 (3d Cir. 1989) (plaintiff may only recover penalties for violations occurring between filing of notice letter and filing of complaint).

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¹See *SPIRG v. AT & T Bell Labs.*, 617 F. Supp. 1190, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 21051 (D.N.J. 1985). *But see* *Public Interest Research Group v. Powell Duffryn Terminals*, 913 F.2d 64, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 21216 (3d Cir. 1990), *cert. denied*, 498 U.S. 1109 (1991).

²See *Atl. States Legal Found. v. Tyson Foods, Inc.*, 897 F.2d 1128, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20788 (11th Cir. 1990); *Sierra Club v. Chevron U.S.A., Inc.*, 834 F.2d 1517, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20237 (9th Cir. 1987); *Sierra Club v. Union Oil Co.*, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20005 (N.D. Cal. 1985), *rev'd on other grounds*, 813 F.2d 1480, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20547 (9th Cir. 1987); *Conn. Fund for the Env't v. Job Plating Co.*, 623 F. Supp. 207, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20596 (D. Conn. 1985); *Sierra Club v. Simkins Indus., Inc.*, 617 F. Supp. 1120, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 21012 (D. Md. 1985), *aff'd*, 847 F.2d 1109, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21053 (4th Cir. 1988); *Chesapeake Bay Found. v. Bethlehem Steel Corp.*, 608 F. Supp. 400, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20785 (D. Md. 1985); *Friends of the Earth v. Facet Enters., Inc.*, 618 F. Supp. 532, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20106 (W.D.N.Y. 1984).

³See *SPIRG v. AT & T Bell Labs.*, 617 F. Supp. 1190, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 21051 (E.D. Va. 1985).

citizen suits, the “upset” defense and the “analytical methods” defense. They are a product of the nature of citizen suits brought by environmental groups in the early 1980s. The plaintiffs have almost uniformly sought relief from violations of NPDES permit limitations, which are sought to be proved by the DMRs filed with EPA and the state water pollution agency in accordance with EPA’s NPDES permit regulations. If a citizen can prove his case using the defendant’s own DMRs as admissions, the litigation is cheap and efficient and can essentially be resolved by summary judgment.

The “upset” defense is predicated on 40 C.F.R. § 122.41(n), which allows permittees to raise upset as an affirmative defense to an enforcement action, provided certain conditions are adhered to at the time of the occurrence.¹ An upset is an exceedance caused by exceptional circumstances beyond the reasonable control of the discharger. If the discharger’s permit contains an upset provision, it can raise upset as a defense to the citizen suit just as it would in a government enforcement action. The burden of proof is, however, on the defendant to establish that its permit violation was caused by an upset.²

There are several significant limitations on the use of this defense.³ First, the defense is expressly limited to violations of technology-based limitations in NPDES permits. The upset defense was established by EPA in response to several cases that held that holding permittees to a standard of 100 percent compliance with technology-based limitations would require them to perform better than available technology was capable of achieving.⁴ The upset defense is not available for violation of limitations based on water quality standards.⁵ Second, most enforcement actions involve a pattern of violation of NPDES permit conditions; in the face of a large

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¹These include prompt notification of the permit issuer and prompt correction of the problem or shutdown if necessary.

²40 C.F.R. § 122.41(n)(4). The Fifth Circuit, in *American Petroleum Inst. v. EPA*, 661 F.2d 340, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20076 (5th Cir. 1981), upheld EPA’s upset regulation, including the placement of the burden of proof on the discharger. *See also SPIRG v. P.D. Oil & Chem. Storage Inc.*, 627 F. Supp. 1074, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20517 (D.N.J. 1986).

³The one district court that accepted the upset defense was reversed on all points by the Ninth Circuit in *Sierra Club v. Union Oil Co.*, 813 F.2d 1480, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20547 (9th Cir. 1987), *rev’g* 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 21051 (N.D. Cal. 1985). In *Union Oil Co. v. Sierra Club*, 108 S. Ct. 1102 (1988), the Supreme Court vacated and remanded that decision for reconsideration in light of *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found.*, 484 U.S. 49, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20142 (1987), but in *Sierra Club v. Union Oil Co.*, 853 F.2d 667, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 21299 (9th Cir. 1988), the Ninth Circuit reinstated its original decision with minor modifications. On remand, the district court granted summary judgment to the plaintiffs. 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20362 (N.D. Cal. 1988).

⁴*See Marathon Oil Co.* 564 F.2d 1253 (9th Cir. 1977); *FMC Corp. v. Train*, 539 F.2d 973, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20382 (4th Cir. 1976). *But cf.* *Corn Refiners Ass’n v. Costle*, 594 F.2d 1223, 9 Env’tl. L. Rep. (Env’tl. L. Inst.) 20233 (8th Cir. 1979); *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 9 Env’tl. L. Rep. (Env’tl. L. Inst.) 20284 (D.C. Cir. 1978).

⁵*See, e.g., Sierra Club v. Union Oil Co.*, 813 F.2d 1480, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20547 (9th Cir. 1987), *vacated*, 485 U.S. 931 (1988), *modified and reinstated*, 853 F.2d 667 (9th Cir. 1988); *SPIRG v. P.D. Oil & Chem. Storage Inc.*, 627 F. Supp. 1074, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20517 (D.N.J. 1986); *Atl. States Legal Found. v. Al Tech Specialty Steel Corp.*, 635 F. Supp. 284, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20125 (N.D.N.Y. 1986). *But see U.S. v. STABL, Inc.*, 800 F.3d 476, 80 Env’t. Rep. Cas. (BNA) 2205, 92 Fed. R. Serv. 3d 797 (8th Cir. 2015).

In 1982, EPA proposed to extend the upset defense to violations of water-quality-based effluent limitations if the discharger could prove that instream water quality criteria were not exceeded during the upset. 47 Fed. Reg. 52079 (1982). Soon after, the Agency withdrew the proposal, claiming that any such defense was illusory since a permittee would almost never be able to prove that an upset did not cause violations of instream water quality criteria. 49 Fed. Reg. 38038 (1984). In *Nat. Res. Def. Council v. EPA*, 859 F.2d 156, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20016 (D.C. Cir. 1988), the D.C. Circuit

number of violations it is difficult for a defendant to establish that violations were the result of “exceptional” circumstances.⁶ Third, there are strict reporting requirements at the time of the permit exceedance that must be satisfied as a prerequisite for assertion of the upset defense.⁷ Finally, the upset defense must have been included in the defendant’s NPDES permit.⁸ There has been a requirement for inclusion of upset provisions in federally issued permits since July 1980. However, states are free, under the provisions of § 510 and EPA regulations, to establish more stringent requirements that do not authorize the upset defense.⁹

Still, the upset defense can be raised successfully. In *P.I.R.G. of N.J., Inc. v. Hercules, Inc.*,¹⁰ the defendant raised the upset defense when electrical failures combined with excessively high rainfall caused violations of its NPDES permit. The defendant had notified the appropriate authorities of the permit violations. The state regulators had accepted the defense that the permit violations had been caused by upsets and had declined to assess penalties for them. The court concurred with the state regulators’ conclusion and granted the defendant summary judgment.

The “analytical methods defense” goes to the heart of the theory of the “cheap” citizen suit. Defendants have argued, in large part unsuccessfully, that they should be able to challenge the accuracy of their own DMRs that are proffered by the plaintiff as its evidence of violation of the permit. The courts that have addressed this defense have almost uniformly held that the DMRs can be relied upon and that dischargers are bound by them, regardless of their accuracy.¹¹

Several defendants have argued that their violations are *de minimis* or were au-

rejected industry arguments that the upset defense must be extended to violations of water-quality-based effluent limitations. The court held, however, that EPA’s explanation for withdrawing the proposed change to the upset regulations was inadequate and remanded the issue to EPA.

⁶See *SPIRG v. Jersey Cent. Power & Light Co.*, 642 F. Supp. 103, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20350 (D.N.J. 1986); *SPIRG v. Georgia-Pacific Corp.*, 615 F. Supp. 1419, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20039 (D.N.J. 1985).

⁷40 C.F.R. § 122.41(n)(3). These include prompt notification of the permit issuer and prompt correction of the problem or shutdown if necessary.

⁸See *SPIRG v. AT & T Bell Labs.*, 617 F. Supp. 1190, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 21051 (D.N.J. 1985); *SPIRG v. P.D. Oil & Chem. Storage Inc.*, 627 F. Supp. 1074, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20517 (D.N.J. 1986). *But cf.* *Conn. Fund for the Env’t v. Upjohn Co.*, 660 F. Supp. 1397, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 21137 (D. Conn. 1987) (opining in dictum that absence of upset defense in state regulations not necessarily fatal to the defense).

⁹Section 510, 33 U.S.C.A. § 1370 authorizes states to establish water pollution control requirements, including effluent limitations, that are more stringent than required by the Act. The court in *SPIRG v. P.D. Oil & Chem. Storage Inc.*, 627 F. Supp. 1074, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20517 (D.N.J. 1986), citing 40 C.F.R. § 123.25(a)(12), implied that EPA regulations require states to include the upset defense in state-issued permits. The introductory paragraph of that section provides, however, that “[s]tates are not precluded from omitting or modifying any provision to impose more stringent requirements.” 40 C.F.R. § 123.25(a). In *Sierra Club v. Port Townsend Paper Corp.*, 1988 WL 160580, 28 Env’t Rep. Cas. (BNA) 1676, 19 Env’tl. L. Rep. 20532 (W.D. Wash. 1988), the court held that the defendant could raise the upset defense provided for in its permit even though the state did not include the defense in its permit program.

¹⁰*Pub. Interest Research Grp. of N.J., Inc. v. Hercules, Inc.*, 830 F. Supp. 1525, 36 Env’t Rep. Cas. (BNA) 1833, 24 Env’tl. L. Rep. 20270 (D.N.J. 1993), *aff’d in part, rev’d in part*, 50 F.3d 1239, 40 Env’t Rep. Cas. (BNA) 1385, 25 Env’tl. L. Rep. 20684 (3d Cir. 1995) (rejected by, *Stephens v. Koch Foods, LLC*, 667 F. Supp. 2d 768, 71 Env’t Rep. Cas. (BNA) 1072 (E.D. Tenn. 2009)).

¹¹See *Nat. Res. Def. Council v. Outboard Marine Corp.*, 702 F. Supp. 690, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20731 (N.D. Ill. 1988); *SPIRG v. Georgia-Pacific Corp.*, 615 F. Supp. 1419, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20039 (D.N.J. 1985); *Conn. Fund for the Env’t v. Job Plating Co.*, 623 F. Supp. 207, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20596 (D. Conn. 1985); *Sierra Club v. Simkins Indus., Inc.*, 617 F. Supp. 1120, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 21012 (D. Md. 1985), *aff’d*, 847 F.2d 1109, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 21053 (4th Cir. 1988). *But see* *Friends of the Earth v. Facet Enters., Inc.*, 618 F. Supp. 532, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20106 (W.D.N.Y. 1984) (denying plaintiffs’ motion for summary judgment because “defendant offered a multitude of justifications for the alleged violations, along with

thorized by administrative waivers or forbearance by the governmental enforcement authorities. These arguments have uniformly been rejected as inconsistent with Congress's intent in including the citizen suit provision.¹² In addition, defendants have occasionally argued that good faith attempts at compliance should exculpate them from liability. Such attempts have largely been unsuccessful, though good faith may well be a useful argument when it comes to mitigating the penalty.¹³

Aside from these recurrent defenses that are peculiar to citizen suits, the citizen suit defendants raise the usual defenses involving construction of permit terms.¹⁴

Quite clearly, citizen enforcement of permit terms that are vaguer than single-number effluent limitations is a horse of a different color.¹⁵ Some water quality-related limitations, for example, could require a showing of actual violation of some ambient standard that could not be proved by documents generated by the defendant. The cost of such litigation makes much of it unlikely to occur.

§ 13:131 Citizen suits—Available relief

The forms of relief available in the context of a citizen suit are injunctive relief to “enforce such effluent standard or limitation, or such an order”¹ and “appropriate civil penalties under § 309(d).”² A prevailing plaintiff may also be entitled to costs

convincing arguments why many of the alleged violations should not actually constitute violations” (e.g., typographical mistakes in the DMRs)); *Pub. Interest Research Group of N.J., Inc. v. Elf Atochem N. Am., Inc.*, 817 F. Supp. 1164, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 21225 (D.N.J. 1993) (denying in part plaintiffs' motion for summary judgment because defendant proffered valid defense of laboratory error for alleged violations of discharge limits).

¹²*Proffitt v. Rohm & Haas*, 850 F.2d 1007, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21165 (3d Cir. 1988); *Sierra Club v. Union Oil Co. of Cal.*, 813 F.2d 1480, 25 Env't Rep. Cas. (BNA) 1801, 17 Env'tl. L. Rep. 20547 (9th Cir. 1987), *cert. granted, judgment vacated*, 485 U.S. 931, 108 S. Ct. 1102, 99 L. Ed. 2d 264, 27 Env't Rep. Cas. (BNA) 1280 (1988). The most detailed analysis is by Judge Stern in *SPIRG v. AT & T Bell Labs.*, 617 F. Supp. 1190, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 21051 (D.N.J. 1985). *See also* *SPIRG v. Anchor Thread Co.*, 1984 U.S. Dist. LEXIS 23153, 22 Env't Rep. Cas. (BNA) 1150, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20964 (D.N.J. 1984) (“if private citizen plaintiffs were estopped from maintaining a suit because of waivers or inaction by government officials, the effectiveness of § 505 . . . would be drastically curtailed and its purpose defeated”).

¹³*See, e.g.,* *Student Pub. Interest Research Grp. of N.J. v. AT & T Bell Labs.*, 617 F. Supp. 1190, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 21051 (D.N.J. 1985); *see also* *Pub. Interest Research Grp. of N.J. v. Ferro Merch. Equip. Corp.*, 680 F. Supp. 692, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21368 (D.N.J. 1987).

¹⁴*See, e.g.,* *Chesapeake Bay Found. v. Gwaltney of Smithfield, Ltd.*, 611 F. Supp. 1542, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20663 (E.D. Va. 1985) (argument over whether “monthly average” effluent limitation violation constitutes a single day of violation or thirty days of violation—the court adopting the latter), *aff'd*, 791 F.2d 304, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20636 (4th Cir. 1986), *vacated*, 484 U.S. 49, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20142 (1987).

¹⁵To illustrate the length to which some citizen suit defendants will go to defend the case where either the permit contained ambiguities or the regulatory history was less than clear, *see Conn. Fund for the Env't v. Upjohn Co.*, 660 F. Supp. 1397, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 21137 (D. Conn. 1987) (where the court rejected arguments made by Upjohn that numbers contained in an abatement order issued to address permit violations were not enforceable as effluent limitations).

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¹The reference to “order” means, in practical terms, an NPDES permit, which is an “order” under the Administrative Procedure Act. It could also mean, of course, an administrative enforcement order issued under § 309.

²CWA § 505(a)(2), 33 U.S.C.A. § 1365(a)(2). *See Nat. Res. Def. Council, Inc. v. Texaco Ref. & Mktg., Inc.*, 906 F.2d 934, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20949 (3d Cir. 1990), for a discussion of the role of traditional equitable principles, particularly the standard for establishing irreparable harm, in a citizen suit seeking permanent injunctive relief. The civil penalty aspect of an CWA citizen suit does not become moot if the defendant reaches a settlement with the local regulating authorities. *Atl. States Legal Found., Inc. v. Pan Am Tanning Corp.*, 993 F.2d 1017, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20865

and reasonable attorney's fees.³

Section 505(e) purports to preserve other existing common-law and statutory causes of action available to plaintiffs. This provision was construed narrowly by the Supreme Court in *Milwaukee v. Illinois*⁴ and *Middlesex County v. National Sea Clammers Association*,⁵ in which the Court held that the clause was insufficient to support either the existence of a cause of action under so-called "federal common law" or, in the latter case, an implied private federal right of action for damages for economic injury caused by pollution. Pendent *state common law* claims, however, may be raised,⁶ although the Supreme Court held in *International Paper Co. v. Ouellette*⁷ that in interstate pollution situations the law of the source state must be applied.

In practice, most citizen suit plaintiffs have sought to compel the defendant to install equipment or institute operating procedures that will prevent or minimize future exceedances of permit limits, and secure penalties or payments in lieu of penalties for past violations, along with attorney fees.

Most citizen suits filed since 1982 have been settled, with the defendants agreeing to make payments in lieu of penalties to environmental trust funds and similar devices that put the defendant's resources into the injured stream or the environment generally rather than into the federal treasury.⁸ Of those that have not been settled, Judge Merhige's lengthy opinion in *Chesapeake Bay Found. v. Gwaltney of Smithfield, Ltd.*,⁹ imposing a \$1,285,322 civil penalty, is instructive in the judge's application of the factors used by EPA in its Civil Penalty Policy to construct the penalty.¹⁰

An amendment to § 505 in 1987 added § 505(c), which requires the parties propos-

(2d Cir. 1993).

³CWA § 505(d), 33 U.S.C.A. § 1365(d). Although the statute says nothing about prevailing as a prerequisite to recovery, the Supreme Court's construction in *Ruckelshaus v. Sierra Club*, 463 U.S. 680, 13 Env'tl. L. Rep. 20664 (1983), of an identical provision in the Clean Air Act requiring the fee applicant to be "prevailing or substantially prevailing" is doubtless controlling on the issue. In *Pub. Interest Research Grp. of N.J. v. Struthers-Dunn, Inc.*, 1988 U.S. Dist. LEXIS 17182, 28 Env't Rep. Cas. (BNA) 1218, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21398 (D.N.J. 1988), the court found that Rule 68 of the Federal Rules of Civil Procedure, which declares that a prevailing party may be required to pay the opposing party's court costs when the amount of the judgment is less than that offered in settlement, is not applicable to citizen suits under the Act.

⁴*Milwaukee v. Illinois*, 451 U.S. 304, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20406 (1981).

⁵*Middlesex Cty. v. Nat'l Sea Clammers Ass'n*, 453 U.S. 1, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20684 (1981).

⁶*See, e.g., Lake Mich. Fed'n v. U.S. Army Corps of Eng'rs*, 742 F. Supp. 441 (N.D. Ill. 1990) (conveyance of lakebed property by state to private nonprofit educational institution for expansion of campus violated state public trust doctrine).

⁷*Int'l Paper v. Ouellette*, 479 U.S. 481, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20327 (1987).

⁸Nonnegotiated penalties are deposited into the Treasury as "miscellaneous fees." *See* 31 U.S.C.A. § 3302; S. Rep. No. 92-414, at 79 (1971).

⁹*Chesapeake Bay Found. v. Gwaltney of Smithfield, Ltd.*, 611 F. Supp. 1542, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20663 (E.D. Va. 1985), *aff'd*, 791 F.2d 304 (4th Cir. 1986), *vacated*, 484 U.S. 49, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20142 (1987).

¹⁰Judge Merhige calculated the permit exceedances at between \$250 and \$1,000 per day for violations at Gwaltney's biological treatment facility and between \$1,000 and \$4,000 per day for violations at its chlorination facility. These amounts were added to an add-on for "delay," and about \$55,000 representing Gwaltney's "economic benefit of noncompliance." *See Chesapeake Bay Found. v. Gwaltney of Smithfield, Ltd.*, 611 F. Supp. 1542, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20663 (E.D. Va. 1985). The maximum possible civil penalty, given the number of parameter exceedances, would have been \$6,606,000. *See also* *Pub. Interest Research Grp. of N.J. v. Top Notch Metal Finishing Co.*, 29 Env 1023 (D.N.J. 1988) (\$100,000 plus a potential additional \$740,000 contempt penalty, contingent on audit of assets); *United States v. Citgo Petroleum Corporation*, 82 Env't. Rep. Cas. (BNA) 1010, 2015 WL 9692957 (W.D. La. 2015) (applying the CWA penalty factors to assess a total penalty of \$81 million,

ing to settle a citizen suit to serve the proposed consent decree on EPA and the Attorney General and imposes a 45-day minimum waiting period prior to entry, during which time the United States government may appear and comment on or oppose the proposed settlement.

The government argued successfully in at least one action prior to the 1987 amendments that it is not bound by the results of a citizen suit to which it was not a party.¹¹ The amendments would seem to make this position less easy for the government to maintain.

A rarely used subsection, § 505(h), authorizes the governor of a state to sue EPA without prior notice:

where there is an alleged failure of the Administrator to enforce an effluent standard or limitation . . . the violation of which is occurring in another State and is causing an adverse effect on the public health or welfare of his State, or is causing a violation of any water quality requirement in his State.

The curious thing about this provision is that it appears to authorize a mandamus-type of suit to compel EPA to undertake enforcement, an activity the government has historically argued is discretionary.¹²

IX. OCEAN DISCHARGES AND OCEAN DUMPING

§ 13:132 Overview¹

The discharge of pollutants into the ocean is regulated under several domestic statutes² and is subject to a multilateral international agreement, the London Dumping Convention,³ that is binding on the United States. The principal domestic regulatory authority which implements the London Dumping Convention is Title I

which included a \$4,300 enhancement per barrel discharged for gross negligence).

¹¹See *United States v. Atlas Powder Co.*, 1987 U.S. Dist. LEXIS 15141, 26 Env't Rep. Cas. (BNA) 1391 (E.D. Pa. Mar. 3, 1987).

¹²See *Sierra Club v. Train*, 557 F.2d 485, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20670 (5th Cir. 1977). The provision is obviously designed to provide a remedy short of an original action in the Supreme Court in the case of an interstate dispute, such as was the case in *Illinois v. Milwaukee*, 406 U.S. 91, 2 Env'tl. L. Rep. (Env'tl. L. Inst.) 20201 (1972).

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¹For a general discussion of coastal and ocean regulation, see Chapter 23.

²In addition to the statutes discussed herein, ocean pollution is indirectly or directly addressed by the Deepwater Port Act, 33 U.S.C.A. §§ 1501-24, the Fishery Conservation and Management Act, 16 U.S.C.A. §§ 1801-83, the Fishery Coastal Zone Management Act, 16 U.S.C.A. §§ 1451-64, the Ports & Waterways Safety Act, 46 U.S.C.A. § 391a, and the Act to Prevent Pollution from Ships, 33 U.S.C.A. §§ 1901-12. The Coast Guard regulates garbage management onboard certain types of U.S. ships, including recreational vessels and fixed and floating platforms, pursuant to the Act to Prevent Pollution from Ships, 33 U.S.C.A. § 1901, and § 311(j)(1)(C) of the Act. See 33 C.F.R. Part 151 and 46 C.F.R. Part 25. Congress enacted further ocean dumping legislation late in 1988. Pub. L. No. 100-688, 102 Stat. 4139 (1988). The Ocean Dumping Ban Act of 1988 (amending the Marine Protection, Research and Sanctuaries Act, 33 U.S.C.A. §§ 1401-45) levies fees for permits for ocean dumping of sewage sludge and industrial waste and prohibits such dumping altogether after 1991; the Shore Protection Act of 1988, 33 U.S.C.A. §§ 2601-23, prohibits the transportation of municipal or commercial waste in U.S. coastal waters without a permit and regulates the handling of such waste by transporters; and the United States Public Vessel Medical Waste Anti-Dumping Act of 1988, 33 U.S.C.A. §§ 2501-04, prohibits U.S. vessels from dumping medical waste into the oceans. The Plastic Pollution Control Act, Pub. L. No. 100-556, 102 Stat. 2779 (1988), directs EPA to promulgate within 24 months regulations requiring that plastic ring carrier devices capable of becoming entangled with fish or wildlife be made of naturally degradable material. The legislative history indicates that Congress was particularly concerned with the effects of plastic ring carriers on the marine environment. See *United States Code Congressional and Administrative News* p. 3632.

³Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter,

of the Marine Protection, Research and Sanctuaries Act.⁴ In addition, point source discharges to the ocean are subject to special permit standards established under § 403 of the Act,⁵ and marine sanitation devices are regulated under § 312 of the Act.⁶

Each of the statutes provides different jurisdictional and substantive coverage. The discussion that follows focuses on the statutory provisions, with reference to the Convention as appropriate.

§ 13:133 Ocean discharges from point sources: Section 403 of the Act— Statutory provisions¹

Section 403 was included as part of the original 1972 amendments pursuant to a jurisdictional arrangement between the Senate Committees of Public Works and Commerce.² The statute is designed as a limitation on NPDES permits issued to point source dischargers whose outfalls are in the territorial sea,³ the contiguous zone,⁴ or oceans.⁵ Although one court, in dictum, opined that the Clean Water Act “applies only to the ocean within three miles from shore,”⁶ the plain language of §§ 403 and 502(9) and (10) contradict the assertion. Jurisdiction extends to the limit of the 200 mile economic zone claimed by the United States.

Following the publication of guidelines by EPA,⁷ oceanic NPDES permits must be issued or denied, and contain limitations predicated on, the guidelines. Ocean discharge permits issued before promulgation of the guidelines were premised on determinations by EPA that their issuance was in the “public interest.”⁸

EPA’s guidelines are required to be based on the criteria set forth in § 403(c). The

Aug. 30, 1975, 26 U.S.T. 2403, T.I.A.S. No. 8165, *Envtl. L. Rep.* (Envtl. L. Inst.) Statutes 40329 (1988). See § 13:135.

⁴33 U.S.C.A. §§ 1401-21.

⁵33 U.S.C.A. § 1343.

⁶33 U.S.C.A. § 1322.

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¹See also § 13:78.

²See S. Rep. No. 414, 92d Cong., 1st Sess. 74 (1971).

³The term “territorial seas” is defined by § 502(8) as “the belt of the seas measured from the line of ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters, and extending seaward a distance of three miles.” In December 1988, President Reagan, by Executive Order, adopted a twelve-mile limit for the territorial sea. The Act defines the term for regulatory purposes.

⁴“Contiguous Zone” is defined by § 502(9) as “the entire zone established or to be established by the United States under Article 24 of the Convention of the Territorial Sea and the Contiguous Zone.” This was twelve miles under the 1958 treaty, to which the United States is a signatory. The 1982 Law of the Sea convention amended the contiguous zone to allow extension to a maximum 24 miles from the baseline, developed by a complex calculation. Although the United States has refused to sign the 1982 convention because of objections to its deep seabed mining provisions, it recognizes the extension to 24 miles as customary law, but has not adopted a 24-mile limit itself. The contiguous zone has, moreover, become almost a nonzone in light of the general acceptance of the “exclusive economic zone,” which exceeds 200 miles from the baseline or to the edge of the continental shelf, whichever is farther.

⁵Presumably, the United States could exercise jurisdiction over foreign dischargers up to the limit of its 200-mile economic zone and over U.S. nationals on the high seas. As a practical matter, only floating point source dischargers not covered by the MPRSA are of significance in this regard.

⁶*Chevron U.S.A., Inc. v. Hammond*, 726 F.2d 483, 14 *Envtl. L. Rep.* (Envtl. L. Inst.) 20305 (9th Cir. 1983) (see this section note 2 and accompanying text).

⁷EPA issued its ocean discharge guidelines on October 3, 1980. See 45 Fed. Reg. 65953 (1980).

⁸CWA § 403(a), 33 U.S.C.A. § 1343(a).

criteria, which are also applicable to discharges of dredged or fill material,⁹ include both water quality and economic considerations.¹⁰ An interesting provision, § 403(c)(2), which has no parallel anywhere else in the Act, prohibits issuance of a permit “where insufficient information exists . . . to make a reasonable judgment on any of the guidelines.”¹¹

Certain point source discharges that are arguably subject to § 403 regulation are subject to specific variances or waivers in other parts of the statute, or are prohibited by other provisions of the statute and thus arguably are taken out of the scope of § 403. These include ocean discharges by publicly owned treatment facilities, subject to § 301(h); conventional discharges, subject to § 301(g); and heat, subject to § 316.¹² Oil discharges are absolutely prohibited by § 311.

The relationship of § 403 to the rest of the Act is not made clear either by the text of the statute or in the legislative history. In *Pacific Legal Foundation v. Quarles*,¹³ the court dealt with an argument that § 403 should be read to supersede § 301(a) to the extent that it provides a more specific, albeit less stringent, degree of control under some circumstances than the technology-based requirements of § 301. The argument was rejected, and the court stated that both limitations apply equally, thus in effect giving precedence to the more stringent of the provisions as applied.¹⁴

§ 13:134 Ocean discharges from point sources: Section 403 of the Act—EPA’s regulations¹

EPA promulgated ocean discharge guidelines in 1980.² They are codified as subpart M of 40 C.F.R. Part 125. The guidelines establish the standard for permit denial to be “unreasonable degradation of the marine environment.”³ The Agency defines this to include “significant adverse changes in ecosystem diversity, productivity and stability of the biological community within the area of discharge and sur-

⁹See CWA § 404(b), 33 U.S.C.A. § 1344(b).

¹⁰CWA §§ 403(c)(1)(A)-(G), 33 U.S.C.A. §§ 1343(c)(1)(A)-(G), provides:

(c) *Guidelines for determining degradation of waters*

(1) The Administrator shall, within one hundred and eighty days after October 18, 1972 (and from time to time thereafter), promulgate guidelines for determining the degradation of the waters of the territorial seas, the contiguous zone, and the oceans, which shall include:

(A) the effect of disposal of pollutants on human health or welfare, including but not limited to plankton, fish, shellfish, wildlife, shorelines, and beaches;

(B) the effect of disposal of pollutants on marine life including the transfer, concentration, and dispersal of pollutants or their by-products through biological, physical, and chemical processes; changes in marine ecosystem diversity, productivity, and stability; and species and community population changes;

(C) the effect of disposal, of pollutants on esthetic, recreation, and economic values;

(D) the persistence and permanence of the effects of disposal of pollutants;

(E) the effect of the disposal of varying rates, of particular volumes and concentrations of pollutants;

(F) other possible locations and methods of disposal or recycling of pollutants including land-based alternatives; and

(G) the effect on alternate uses of the oceans, such as mineral exploitation and scientific study.

¹¹EPA’s regulations, discussed below, are somewhat equivocal on this issue.

¹²EPA so treats them. See 40 C.F.R. § 125.122(b).

¹³*Pac. Legal Found. v. Quarles*, 440 F. Supp. 316, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20653 (C.D. Cal. 1977), *aff’d sub nom. Kilroy v. Quarles*, 614 F.2d 225, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20271 (9th Cir. 1979), *cert. denied*, 449 U.S. 825 (1980).

¹⁴*Pac. Legal Found. v. Quarles*, 440 F. Supp. 316, 322–26, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20653 (C.D. Cal. 1977).

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¹See also § 13:78.

²45 Fed. Reg. 65953 (1980).

³40 C.F.R. § 125.122(a).

rounding biological communities,” threat to human health through direct exposure to pollutants or through consumption of exposed aquatic organisms, or loss of aesthetic, recreational, scientific, or economic values that is unreasonable in relation to the benefit derived from the discharge.⁴

The enforcement mechanism is the NPDES permit. Ocean discharger NPDES permits are scrutinized with reference to ten factors EPA deems relevant to the “unreasonable degradation” criterion.⁵ The factors deal with the properties of the pollutant involved; the nature, significance, and vulnerability of affected biological communities; human recreational, aesthetic, and health implications of the discharge; impacts on the fishing industry; any requirements of an applicable coastal zone management plan; and marine water quality criteria developed under § 304(a) (1).

Permit applicants may accordingly be required to submit detailed chemical analyses, bioassay results, and dilution, dispersion, and plume modeling,⁶ as well as background biological data on the receiving water.⁷ The regulations also suggest that the permit writer may require information on possible process modifications that could reduce the quantity of pollutants discharged and alternatives to the discharge, including land-based disposal or dumping at an ocean dump site approved under the MPRSA program.⁸

Although § 403(c)(2) would appear to require denial of an ocean discharge NPDES permit where material information on any statutory factor was lacking, EPA has softened the impact of the provision somewhat in its regulations. Section 125.123(c) of 40 C.F.R. allows a permit to be issued in the face of data gaps if the permit writer concludes that (1) the discharge will not cause “irreparable harm” during the period in which monitoring to secure the needed data is accomplished, (2) there are no reasonable alternatives, and (3) the discharge will be in compliance with the mandatory permit conditions imposed on all ocean dischargers by § 125.122(d).⁹

Mandatory permit conditions include implementation of a monitoring program that adequately assesses the impacts of the discharge, a provision providing for revocation at any time the permitting authority determines that an unreasonable degradation is occurring, and several conditions cross-referenced to the MPRSA regulations.¹⁰

EPA’s regulations are not as clear as they might be on the status of thermal discharges, § 301(h) variance holders, § 301(g) variance holders, and dischargers whose discharges do not violate state water quality standards. Section 125.122(b) states that such discharges “shall be presumed not to cause unreasonable degradation . . . for any specific pollutants or conditions specified in the variance or the standard.” Although the one relevant court decision points to any such presumption being rebuttable, in the sense that more stringent § 403 requirements should ap-

⁴40 C.F.R. § 125.121(e).

⁵40 C.F.R. §§ 125.122(a)(1)-(10).

⁶40 C.F.R. §§ 125.124(a)-(c).

⁷40 C.F.R. § 125.124(e).

⁸40 C.F.R. §§ 125.124(d), (e).

⁹In such a case, the permit must contain bioassay-based effluent limitations, special monitoring requirements, and a reopener clause authorizing the modification or prohibition of the discharge on the basis of new information. *See* 40 C.F.R. § 125.123(d).

¹⁰These require that the discharge will (A) following dilution as measured at the boundary of the mixing zone, not exceed the limiting permissible concentration for the liquid and suspended particulate phases of the waste material as described in §§ 227.27(a)(2)-(3), § 227.27(b), and § 227.27(c) of the Ocean Dumping Criteria; and (B) not exceed the limiting permissible concentration for the solid phase of the waste material or cause an accumulation of toxic materials in the human food chain as described in §§ 227.27(b) and (d) of the Ocean Dumping Criteria.

ply,¹¹ EPA does not state that the presumption is rebuttable. Moreover, except in the case of § 301(h), which specifically deals with ocean discharges, there is little logic supporting EPA's effective exemption of the other variance provisions from the § 403 criteria.

§ 13:135 Ocean dumping—Overview—The London Dumping Convention

The dumping of waste into the ocean from vessels or airplanes is governed by two sources of law, the Marine Protection, Research and Sanctuaries Act, discussed below, and the Convention on the Dumping of Wastes at Sea.¹ The MPRSA was initially enacted three weeks before the signing of the Convention, which is also known as the London Dumping Convention, and was subsequently amended to conform to the requirements of the Convention following its ratification on August 3, 1973.²

The parties to the Convention agreed to “take effective measures individually, according to their scientific, technical and economic capabilities, and collectively, to prevent marine pollution caused by dumping and [to] harmonize their policies in this regard.”³ The Convention binds the parties to prohibit the dumping of materials listed in Annex I to the Convention,⁴ unless they are “rapidly rendered harmless by physical, chemical or biological processes in the sea.”⁵ The dumping of wastes listed in Annex II, and other wastes, is allowed only if pursuant to a government-issued permit.⁶

The Convention specifies a number of factors to be considered in granting permits in Annex III. These include the characteristics of the waste, characteristics of the site, method of disposal, effect on marine organisms, other uses of the sea, and the availability of alternative methods of dumping, specifically including land-based disposal. Finally, it contains a consultative mechanism for resolving questions of interpretation or application.

§ 13:136 Ocean dumping—Jurisdiction and coverage of the MPRSA

The Marine Protection, Research and Sanctuaries Act was enacted in 1972¹ and has been amended several times.² Its stated purpose is to regulate the transportation of “material,” as defined, for the purpose of dumping the material into “ocean

¹¹*See, e.g.,* Pacific Legal Found. v. Quarles 440 F. Supp. 316, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20653 (C.D. Cal. 1977).

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¹Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, Dec. 29, 1972, 26 U.S.T. 2403, T.I.A.S. No. 8165.

²The Convention went into force on August 30, 1975. *See* S. Rep. No. 726, 93d Cong., 2d Sess. 1 (1974); H.R. Rep. No. 568, 93d Cong., 1st Sess. 6 (1973) (commenting on Pub. L. No. 93-254).

³Art. II, 26 U.S.T. 2403, 2407.

⁴Annex I lists organohalogen compounds, mercury and mercuric compounds, cadmium and cadmium compounds, persistent plastics, oils taken on for the purpose of dumping (except that these wastes may be contained in other dumped wastes in trace amounts), high-level radioactive waste or matter defined by the International Atomic Energy Agency as such, chemical and biological warfare materials. 26 U.S.T. 2403, 2465.

⁵Annex I, No. 8, 26 U.S.T. 2403, 2465.

⁶Annex II wastes include various metals, some toxic substances, acids and alkalis, bulky, obstacle-creating wastes, and lower level radioactive wastes. 26 U.S.T. 2403, 2466.

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¹Pub. L. No. 92-532, 86 Stat. 1052 (1972) (codified at 33 U.S.C.A. § 1401).

²The most significant amendment to MPRSA was the Ocean Dumping Ban Act, Pub. L. No. 100-688, 102 Stat. 3213 (1988), which prohibited the ocean dumping of sewage sludge and industrial

waters” by any U.S. vessels, aircraft, or agencies, and, if the material originates in the United States,³ by any person, and to regulate the “dumping” of material transported from outside the United States by any person in the territorial sea or the contiguous zone.⁴

“Ocean waters” are defined as the waters “of the open sea lying seaward of the base line from which the territorial sea is measured, as provided by the Convention on the Territorial Sea and the Contiguous Zone.”⁵ Essentially, the intention is to control U.S.-origin waste destined for dumping anywhere within U.S. waters or on the high seas and to regulate non-U.S.-origin dumping within the territorial sea and the contiguous zone.⁶ The scheme for control is designed to comply with the obligations of Article VI of the London Dumping Convention,⁷ which requires contracting parties to regulate the dumping of matter loaded in their territories or transported by their flag flying or registered conveyances in marine waters outside of their internal waters.⁸

“Material” is broadly defined by § 3(c) of the MPRSA to encompass just about any variety of waste,⁹ except for vessel wastes that are regulated under § 312 of the Act, and oil to the extent it is not intentionally dumped.¹⁰ Material is “dumped” if it is disposed of from a vessel, aircraft, or other conveyance and not subject to one of the

waste.

³“United States” is defined by § 3(d) to include Puerto Rico, the Trust Territory of the Pacific Islands, and “the territories and possessions of the United States.”

⁴MPRSA § 2(c), 33 U.S.C.A. § 1401(c).

⁵15 U.S.T. 1606, T.I.A.S. 5639.

⁶These terms are defined later in this section. An interesting anomaly is presented by § 106(f) of the MPRSA, 33 U.S.C.A. § 1416(f), which was added in 1980 by Pub. L. No. 96-572. This provision states that the “dumping of dredged material in Long Island Sound from any Federal project (or pursuant to Federal authorization) or from a dredging project by a non-federal applicant exceeding 25,000 cubic yards shall comply with the” § 102(a) criteria pertaining to effects. Pub. L. No. 96-572, § 4, 94 Stat. 3345 (1980). It exempts from Long Island Sound the preemptive effect of § 106(d), presumably authorizing more stringent state regulation.

The United States historically claimed as territorial waters much of Long Island Sound. In 1985, the Supreme Court decided *United States v. Maine*, 469 U.S. 504 (1985), in which it rejected the U.S. claim, adjudicating most of Long Island Sound to be inland waters. Under the MPRSA’s jurisdictional scheme, the Long Island Sound is thus not an MPRSA water. Unless § 106(f) is construed to impliedly amend the Rivers and Harbors Act of 1899 and § 404 of the Act, its viability is suspect. *But see* *Town of Huntington v. Marsh*, 859 F.2d 1134, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20192 (2d Cir. 1988) (Ocean Dumping Act review requirements apply to Corps designation of Long Island Sound dredged material dump site as well as to permit applications).

⁷1972 Convention on the Prevention of Marine Pollution By Dumping Of Wastes And Other Matter, 26 U.S.T. 2403, T.I.A.S. 8165.

⁸Under the Convention, dumping in the internal waters of another state would be subject to regulation by that state.

⁹[M]atter of any kind or description, including, but not limited to, dredged material, solid waste, incinerator residue, garbage, sewage, sewage sludge, munitions, radiological, chemical, and biological warfare agents, radioactive materials, chemicals, biological and laboratory waste, wreck or discarded equipment, rock, sand, excavation debris, and industrial, municipal, agricultural, and other waste;” MPRSA § 3(c), 33 U.S.C.A. § 1402(c).

Section 4 of Pub. L. No. 95-153 banned the dumping of sewage sludge after December 31, 1981. U.S. District Judge Abraham Sofaer ruled in *City of New York v. EPA*, 543 F. Supp. 1084, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 21003 (S.D.N.Y. 1981) that the statute did not mean what it apparently said and enjoined EPA from denying any permit for sludge dumping that was not subjected to a full balancing of the § 102(a) factors. *Accord* *Nat. Res. Def. Council, Inc. v. EPA*, 656 F.2d 768, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20487 (D.C. Cir. 1981).

¹⁰Unintentional transportation oil spills are regulated by § 311 of the Act and under a number of international agreements.

statutory exceptions.¹¹

§ 13:137 Ocean dumping—Regulatory scheme in general

The MPRSA regulates ocean dumping by means of prohibitions and a permit program and by providing a mechanism for designation of ocean dumping sites to be used by permittees. The scheme follows the regulatory program mandated by the London Dumping Convention. The MPRSA permit program is separate and distinct from the NPDES permit program administered by EPA under the Act. As is discussed below, it is procedurally as well as substantively different.

Transportation of “material” from the United States, or by a U.S. agency or carrier for dumping into the ocean, is prohibited unless the entity has a permit issued by either the Corps (for dredged material) or by EPA (for all other material).¹ Dumping of material within the area extending twelve miles seaward of the baseline² by any person, including foreign nationals, is prohibited without a permit issued under § 102 of the Act by EPA.

Certain materials may not be permitted at all. Section 102(a) prohibits the issuance of permits for radiological, chemical, and biological warfare agents, and “high-level radioactive waste.”³ Fish wastes are only required to have permits for dumping if the dumping occurs in harbors or other enclosed areas, or at specific sites prohibited by EPA.⁴

§ 13:138 Ocean dumping—The permit program—Overview

Permitting authority under the MPRSA is bifurcated between the Corps and EPA primarily as a consequence of Congress’s belief that management of dredged spoil would be better left to the Corps, where it had traditionally resided.¹ The Corps issues permits for the ocean dumping of dredged materials pursuant to § 103, in tandem with its regulation of dredging under § 10 of the Rivers and Harbors Act of 1899, and EPA has permitting authority over all other wastes. In addition, EPA is authorized to designate recommended dumping sites and times and to limit or prohibit dumping at specific sites in order to protect “critical areas.”²

¹¹Section 3(f) specifically excludes from the definition disposition from a point source regulated under the Act or the Refuse Act (§ 13 of the Rivers and Harbors Act of 1899), disposition regulated under the Atomic Energy Act (42 U.S.C.A. § 4011), and routine discharges from motors on vessels. It also excludes dumping the purpose of which is to create artificial structures where such activity is otherwise regulated, or the dumping of oyster shells or “other materials” for the purpose of fishery harvesting or management regulated under or pursuant to a state or federal law or program.

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¹MPRSA §§ 101(a), 102, 103, 33 U.S.C.A. §§ 1411(a), 1412, 1413.

²The baseline essentially follows the low water line along the coast and extends across the mouths of juridical bays, which are determined in the United States through application of the principles of Article 7 of the 1958 Convention on the Territorial Sea and the Contiguous Zone. See Westerman, *The Juridical Bay* (1986).

³The first term is undefined. The latter is defined by § 2(j) as “the aqueous waste resulting from the operation of the first cycle solvent extraction system, or equivalent, and the concentrated waste from subsequent extraction cycles, or equivalent, in a facility for reprocessing irradiated reactor fuels, or irradiated fuel from nuclear power plants.” As defined, the term apparently does not prohibit dumping of waste from weapons manufacturing.

⁴MPRSA § 102(d), 33 U.S.C.A. § 1412(d).

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¹See H.R. Rep. No. 568, 93d Cong., 1st Sess. 6 (1973). Similar logic lay behind placement of the § 404 dredge and fill program in the hands of the Corps.

²MPRSA § 102(c), 33 U.S.C.A. § 1412(c). The statute does not define the term “critical areas.”

In evaluating disposal projects, EPA is required to apply criteria developed by it³ that consider eight statutory factors, which deal generally with the need for the dumping, its effects, alternatives to the dumping, and alternative uses of the ocean areas.⁴ It is also required by § 102(a) to predicate its criteria on any more stringent “standards and criteria binding upon the United States under the Convention, including its Annexes.” EPA’s criteria are published at 40 C.F.R. Part 227. The Agency applies these criteria in determining, on a case-by-case basis, whether particular dumping proposals “will unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities.”⁵

The Corps, in considering permit applications for dumping “dredged material,”⁶ is required to consider only those EPA-promulgated criteria that relate to the effects of the dumping,⁷ although the legal standard for permit issuance is identical with that imposed under § 102 for EPA-issued permits. The Corps’ implementing regulations, however, require application of all of the EPA criteria.⁸ In addition, the Corps must consider the effect of the project on “navigation, economic and industrial development, and foreign and domestic commerce of the United States,”⁹ and is required to make its own assessment of “other possible methods of disposal” and appropriate locations for the dumping.¹⁰

The Corps is required, “to the extent feasible” to direct its permittees to dumping sites designated by EPA under § 102(c) of the statute.¹¹ The statute is silent as to EPA’s obligation vis-à-vis designated sites. EPA’s regulations, however, require applicants either to dump into already-designated sites or satisfy the Agency’s site

³The Agency is required to consult with federal, state, and local officials and the public and must, of course, promulgate the criteria in accordance with the federal Administrative Procedure Act. It has a specific obligation to consult with the Corps with respect to any criteria that affect the Corps’ civil works program.

⁴MPRSA §§ 102(a)(A)-(H), 33 U.S.C.A. §§ 1412(a)(A) to (H). The factors are (A) the need for the proposed dumping; (B) the effect of the dumping on human health and welfare, including “economic, esthetic and recreational values”; (C) the effect on fisheries resources, plankton, fish, shellfish, wildlife, shorelines, and beaches; (D) the effect on marine ecosystems, “particularly with respect to (i) The transfer, concentration, and dispersion of such material and its byproducts through biological, physical, and chemical processes, (ii) potential changes in marine ecosystem diversity, productivity, and stability, and (iii) species and community population dynamics”; (E) persistence and permanence of effects; (F) effect of dumping particular volumes and concentrations; (G) availability and public interest considerations affecting alternatives, including land based alternatives; and (G) the effect of the dumping on “alternate uses of oceans.”

⁵MPRSA § 102(a), 33 U.S.C.A. § 1412(a).

⁶Section 2(i) defines this term as “any material excavated from the navigable waters of the United States.” The reference to “navigable waters,” which is not itself defined, is thus to constitutional navigable waters and, hence, relates to spoil from projects regulated under the Rivers and Harbors Act of 1899. Dredged spoil from projects undertaken in waters that are not “navigable” in the commerce clause sense would arguably be subject to EPA permitting under § 102.

The Corps is not required to go through the motions of giving itself a permit where the dredging is part of a federal project. Section 103(e) authorizes the application of the substantive criteria to such projects by regulation rather than by permit.

⁷MPRSA § 103(b), 33 U.S.C.A. § 1413(b). The Corps is required to apply only the criteria contained in subparts A, C, D, E, and G, and part of subpart B of EPA’s implementing criteria, contained in 40 C.F.R. § 227. *See Nat’l Wildlife Fed’n v. Costle*, 629 F.2d 118, 128-31, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20742, 20748-49 (D.C. Cir. 1980).

⁸33 C.F.R. § 324.4(b).

⁹MPRSA § 103(b), 33 U.S.C.A. § 1413(b).

¹⁰MPRSA § 103(b), 33 U.S.C.A. § 1413(b). Why Congress chose to relieve the Corps of the obligation to apply EPA’s guidelines on alternate disposal methods in favor of an independent determination is a mystery.

¹¹MPRSA § 103(b), 33 U.S.C.A. § 1413(b). *See* § 13:141 (designation process).

designation criteria.¹²

EPA is not authorized to issue a permit for dumping that will “violate applicable water quality standards.”¹³ This limitation implicates state standards where dumping is into the territorial seas¹⁴ and EPA’s marine water quality criteria beyond that point.¹⁵ A similar explicit statutory prohibition is absent from § 103.¹⁶

Adherence by the Corps to EPA’s criteria is intended to be ensured by a veto power given to EPA by § 103(c).¹⁷ The Corps must submit all proposed permit decisions to the relevant EPA Regional Administrator for a determination that the criteria are satisfied. In the event the response is negative, or if the Corps wants to allow dumping in an area designated critical by EPA, the Corps may not issue the permit unless EPA agrees to waive application of the criteria or critical area designation upon a determination by the Corps that “there is no economically feasible method or site available.”¹⁸ Waiver must be granted under such circumstances unless EPA concludes that the dumping will “result in an unacceptably adverse impact on municipal water supplies, shellfish beds, wildlife, fisheries (including spawning and breeding areas), or recreational activities.”¹⁹ Coordination between EPA and the Corps following a certification by the district engineer that there is no viable alternative method or site occurs at the Washington, D.C., level²⁰ for each agency.

EPA issues five types of permits: general permits,²¹ “special permits,”²² emergency permits,²³ research permits,²⁴ and permits for incineration of wastes at sea.²⁵ Prior to

¹²40 C.F.R. § 221.1(f).

¹³MPRSA § 102(a), 33 U.S.C.A. § 1412(a).

¹⁴*See* Sec’y of the Interior v. California, 464 U.S. 312, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20129 (1984) (limiting state regulatory jurisdiction to three miles).

¹⁵*See* 40 C.F.R. § 227.31.

¹⁶If one reads the water quality standard language of § 102(a) as establishing a separate “criteria,” then § 103(b)’s requirement that the Corps apply all effects-related § 102(a) criteria brings the prohibition into the Corps program indirectly. Since, however, the structure of § 102(a) lists the factors on which the “criteria” are to be based in numbered paragraphs, the water quality standards language not being one of those can not readily be called one of the “criteria” following normal statutory construction principles. EPA could, however, simply include the water quality standards language in its promulgated effects criteria, and it appears to have taken this route in 40 C.F.R. § 227.18(c), where it includes “applicable water quality standards” as a factor to be considered in determining the impacts on esthetic, recreational, and economic values (the § 102(a)(B) criterion).

¹⁷*See* 33 C.F.R. § 324.4(c) (Corps procedures); 40 C.F.R. Part 225 (EPA procedures).

¹⁸MPRSA § 103(d), 33 U.S.C.A. § 1413(d).

¹⁹EPA is required to act within 30 days of the Corps’ certification of necessity. MPRSA § 103(d), 33 U.S.C.A. § 1413(d).

²⁰*See* 33 C.F.R. § 324.4(c)-(e).

²¹These are authorized by § 104(c). To date, EPA has promulgated general permits for burial of human remains at sea, transport of target vessels by the Navy, and federal government transportation of vessels intended for disposal by sinking. *See* 40 C.F.R. Part 229.

²²40 C.F.R. § 220.3(b). These are for nonrecurring dumping and are good for three years.

²³40 C.F.R. § 220.3(c). Emergency permits authorize the dumping of constituents that are normally prohibited, 40 C.F.R. § 227.6, under circumstances where the emergency poses an unacceptable risk to public health and where there is no other feasible solution. This type of permit may require consultation under the applicable Convention provision.

²⁴40 C.F.R. § 220.3(e). The regulations specify particular restrictions and limit the types of constituents that can be dumped.

²⁵40 C.F.R. § 220.3(f). This provision became important in the middle of 1984 when Waste Management, Inc. began to seek permits to dispose of hazardous waste by incineration on one of its incinerator ships. EPA determined that the MPRSA rather than RCRA was the appropriate regulatory statute for such activity. The regulation states:

Permits for incineration of wastes at sea will be issued only as research permits or interim permits until

April 23, 1978, it also issued “interim permits.”²⁶

§ 13:139 Ocean dumping—The permit program—Permit procedures

The Corps operates its ocean dumping program as an integrated part of its dredge and fill program and applies uniform procedures to § 404, ocean dumping, and Rivers and Harbors Act permitting.¹ The Corps issues permits following informal rulemaking procedures. It is required, however, to comply with NEPA with respect to its regulatory activities,² which also apparently applies to EPA,³ although the Agency generally has prevailed in its claim asserted in connection with other programs that it does not have to comply with NEPA since its activities are its “functional equivalent.”⁴

EPA’s application and processing regulations are published at 40 C.F.R. Parts 221 and 222. EPA’s regulations provide for an initial informal hearing.⁵ Nevertheless, any “interested person who participated in” an informal hearing has a right to request an adjudicatory hearing on the application.⁶ A party must appeal an adverse decision to the Administrator before exhausting the administrative appellate scheme.⁷

§ 13:140 Ocean dumping—The permit program—Permit conditions and regulatory criteria

Section 104 establishes the statutory ground rules for the form and conditions of ocean dumping permits. Section 104(a) sets forth the minimum contents of any permit. Section 104(b) authorizes the permitting agencies to impose processing fees.¹ Section 104(d) imposes on the agencies an obligation to periodically review permits

specific criteria to regulate this type of disposal are promulgated, except in those cases where studies on the waste, the incineration method and vessel, and the site have been conducted, and the site has been designated for incineration at sea in accordance with the procedures of [40 CFR] § 228.4(b).

EPA’s jurisdiction over incinerator ships is derived from § 2(f)’s definition of “dumping” as meaning a “disposition of material.” Since any incineration of waste necessarily produces particulate matter that falls back to earth, that matter is “material” that is “disposed” from the vessel. Regulating incinerator vessels under the MPRSA thus involves as indirect a jurisdictional nexus as one can imagine.

The Agency deferred all action on incineration permits on May 22, 1984, and on research permits on June 4, 1986, pending its completion of rulemaking that would specifically address the substantive issues presented by at-sea incineration. *See Waste Mgmt., Inc. v. EPA*, 26 Env 1489 (D.D.C. 1987).

²⁶40 C.F.R. § 220.3(d). These were designed to allow dumping to continue before EPA had completed development of its regulatory program.

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¹*See* 33 C.F.R. Part 325.

²*See* *Sierra Club v. Marsh*, 769 F.2d 868, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20911 (1st Cir. 1985) (discussing scope of obligation); *Town of Huntington v. Marsh*, 859 F.2d 1134, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20192 (2d Cir. 1988) (Corps must apply NEPA criteria to designation of dumping site in Long Island Sound and may not defer analysis of types, quantities, and cumulative effects of waste to be dumped until review of permit applications). For a discussion of NEPA law generally, see Ch. 10.

³*See* *Manatee Cty. v. Gorsuch*, 554 F. Supp. 778, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20180 (M.D. Fla. 1982) (discussing EPA’s NEPA obligations in designating dumping sites under § 102(c)).

⁴EPA’s CWA actions are largely exempt from NEPA by § 504 of the Act.

⁵40 C.F.R. §§ 222.4 to 222.7.

⁶40 C.F.R. § 222.10.

⁷40 C.F.R. § 222.12.

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¹*See* 40 C.F.R. § 221.5 for EPA’s fee schedule. The Corps’ fee schedule is published at 33 C.F.R. § 325.1(f). Doing business with the Corps is less costly from the fee standpoint, but the Corps’ NEPA obligation imposes environmental assessment costs on applicants that more than make up the

and to reopen them in the event problems are found.² The section also contains several provisions pertaining to public access to information, permit posting and other ministerial matters, provision for required records and reports,³ and an elaborate mechanism for evaluating nuclear waste,⁴ which contains a legislative veto provision that is undoubtedly unconstitutional.

The key regulatory requirements are EPA's ocean dumping criteria, which are found at 40 C.F.R. Parts 227 and 228.⁵ The structure of the criteria, which were discussed at length by Judge Sofaer in *City of New York v. EPA*,⁶ establish a hierarchy of consideration of the various statutory criteria.

If the material satisfies the environmental impact criteria set forth in subpart B of Part 227⁷ (i.e., EPA determines as a threshold matter that it will not unreasonably degrade or endanger the environment), then the permit will be issued unless the Agency determines, based on its application of the statutory factors, that (1) there is no need for the dumping and alternate disposal means are available in accordance with criteria set forth in subpart C; (2) there are unacceptable adverse effects on aesthetic, recreational, or economic values as determined with reference to subpart D; or (3) there are unacceptable adverse effects on other uses of the ocean (primarily fishing, shoreline uses, and navigation) determined under subpart E, of Part 227.

If the material does not satisfy the environmental impact criteria, then the regulations require that the permit be denied.⁸ Certain materials are *per se* prohibited. These include high-level radioactive wastes as defined; radiological, chemical, or biological warfare agents; materials of unknown properties; and material likely to produce flotsam.⁹ Several organic compounds and metals fall within a category that are prohibited unless found in trace amounts only, unless bioassays demonstrate that they do not cause adverse effects or bioaccumulate.¹⁰ Other compounds are subject to specific limitations as a precondition to being dumped. These include benzene and related compounds, low-level radioactive materials, living organisms (viral, microbial, and higher forms), highly acidic or alkaline wastes, and oxygen consuming wastes.¹¹

Wastes that are toxic are regulated by means of the concept of "limiting permis-

difference.

²EPA's implementing regulations are published at 40 C.F.R. Part 223. They provide hearing and other procedures applied to modification and revocation of permits, along with posting and other provisions as to form.

³EPA's reporting and recordkeeping regulations are published at 40 C.F.R. Part 224.

⁴MPRSA § 104(i), 33 U.S.C.A. § 1404(i).

⁵The Part 228 criteria relate to management of disposal sites, as opposed to disposal.

⁶*City of New York v. EPA*, 543 F. Supp. 1084, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 21003 (S.D.N.Y. 1981). The case involves only sewage sludge and industrial waste.

⁷See 40 C.F.R. § 227.4 (general criteria); 40 C.F.R. § 227.5 (prohibited materials); 40 C.F.R. § 227.6 (constituents prohibited as other than trace contaminants); 40 C.F.R. § 227.7 (limits established for specific wastes or waste constituents); 40 C.F.R. § 227.8 (limitations on disposal rates for toxic wastes); 40 C.F.R. § 227.9 (limitations on quantities of waste materials); 40 C.F.R. § 227.10 (hazards to fishing, shorelines, navigation, and beaches); 40 C.F.R. § 227.11 (containerized wastes); 40 C.F.R. § 227.12 (insoluble wastes); and 40 C.F.R. § 227.13 (dredged materials).

⁸40 C.F.R. § 227.3. EPA could, however, issue an interim permit under certain circumstances, when such permits were authorized. See 40 C.F.R. §§ 220.3(d), 227.3, 227.23-26.

⁹40 C.F.R. § 227.5.

¹⁰40 C.F.R. § 227.6. Compounds subject to this presumption include organohalogens, mercury and mercury compounds, cadmium and cadmium compounds, oil (to the extent regulated under the Act), and "known carcinogens, mutagens, or teratogens, or materials suspected to be . . . [such] by responsible scientific opinion."

¹¹40 C.F.R. § 227.7.

sible concentration” (LPC). This concept allows a mixing zone and then applies alternative standards outside of the zone. The alternative standards are either that the concentrations outside of the mixing zone do not exceed those permitted by any applicable marine water quality standards or, in the absence of such standards, that the concentrations “will not exceed a toxicity threshold defined as 0.01 of a concentration shown to be acutely toxic to appropriate sensitive marine organisms in a bioassay carried out in accordance with approved EPA procedures.”¹²

Many ocean dumpers, particularly those disposing of dredged spoil, hope that their material does not fail the bioassay test. Evidence of any toxicity will usually result in at least the imposition of a requirement that the material be covered after dumping with clean capping material. For the discharger, finding adequate amounts of capping material within a reasonable distance from the disposal site at the time it is needed can be an exceedingly difficult problem, one that has caused deferral of many dredging projects.

The location of the site where the material may be dumped is also of importance to many ocean dumpers, since transportation costs can be very high. Thus, EPA’s designation of dump sites under § 102(c) of the Act is of great significance not only to the ocean environment but to the regulated entities.

§ 13:141 Ocean dumping—Site designation

Section 102(c) authorizes EPA to designate acceptable and unacceptable dumping areas in the ocean and to impose management standards on the sites designated to accept the dumping of wastes. Site designation must employ all of the § 102(a) criteria applicable to permitting, as well as a special criterion, § 102(a)(I), which requires EPA, “wherever feasible” to recommend dump sites beyond the continental shelf.

EPA initially designated a large number of preexisting dump sites as acceptable on an interim basis.¹ That practice was upheld in *National Wildlife Federation v. Costle*,² with the court holding that EPA could rely on historical usage as a predicate for approving sites for use pending completion of study and application of the criteria.³ The Agency’s practice continues to be designating historic sites for interim use, and designating fully studied, acceptable sites meeting the criteria set forth in Part 228 for “continuing use.”⁴

Prior to designating a site for continuing use, EPA applies its guidelines for ocean disposal site baseline or trend assessment surveys⁵ and is required to comply with

¹²40 C.F.R. § 227.27(a). The regulation allows for establishment of a different LPC supported by “reasonable scientific evidence” on a constituent by constituent basis. The regulations define the relevant terms, such as appropriate sensitive marine organisms, and establish the parameters for the mixing zone. See 40 C.F.R. §§ 227.27(b)–.32.

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¹42 Fed. Reg. 2462 (1977).

²*Nat’l Wildlife Fed’n v. Costle*, 629 F.2d 118, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20742 (D.C. Cir. 1980).

³*But see* *Manatee Cty. v. Gorsuch*, 554 F. Supp. 778, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20180 (M.D. Fla. 1982) (refusing to apply *National Wildlife* rationale to designation of a site not historically used and designated by EPA without knowledge solely on the strength of a recommendation of the Corps).

⁴Interim use sites are listed, together with applicable limitations, in 40 C.F.R. § 228.12(a). Continuing use sites are listed in 40 C.F.R. § 228.12(b). See, e.g., 53 Fed. Reg. 36455 (1988) (designating four dredged materials disposal sites offshore of Puerto Rico).

⁵40 C.F.R. § 228.13.

the National Environmental Policy Act.⁶ Its procedures and selection and management criteria are contained in Part 228 of its regulations. Its general bias is to avoid fishing grounds and shellfish areas, areas of heavy navigation, and areas remote from beach and shoreline impact.⁷

§ 13:142 Ocean dumping—Enforcement

Since EPA does not maintain a fleet of vessels, the MPRSA looks to the Coast Guard as the primary means of field enforcement.¹ Regulatory enforcement is vested jointly in EPA and the Corps with respect to their respective programs.

The statute authorizes EPA to levy administrative penalties of up to \$50,000 per violation² and imposes criminal fines in like amount or a prison term of up to one year for knowing violations.³ Each day of a continuing violation is considered a separate violation. *In rem* proceedings are available to execute either civil or criminal levies.⁴ Finally, the statute contains a citizen suit provision that authorizes injunctive actions against alleged violators.⁵ Unlike the citizen suit statutes in the Clean Air Act and the Act, this one does not appear to authorize mandamus actions against EPA and contains an unambiguous bar to a citizen action if EPA has initiated administrative enforcement.⁶

X. OIL POLLUTION

§ 13:143 In general

Section 311 of the Federal Water Pollution Control Act, added by the extensive 1972 amendments, gave EPA authority to respond to oil spills in or near surface waters. This modest response program became the model for a huge effort to clean up abandoned hazardous waste dumps, as well as spills of toxic chemicals and petroleum and petroleum products onshore and in the waters of the United States. The largest and best-known component of this expanded program is Superfund, the abandoned hazardous waste site cleanup program. The entire response program is discussed in Chapter 14.

Partially the result of the *Exxon Valdez* oil spill in March 1989 and partially the result of over fifteen years of congressional negotiations, the Oil Pollution Act of 1990¹ was signed into law on August 18, 1990, after a unanimous vote in both houses. The Act establishes and enhances: a comprehensive federal liability scheme;

⁶See *Manatee County v. Gorsuch*, 554 F. Supp. 778, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20180 (M.D. Fla. 1982); *Town of Huntington v. Marsh*, 859 F.2d 1134, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20192 (2d Cir. 1988).

⁷40 C.F.R. § 228.5.

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¹MPRSA § 107(a), 33 U.S.C.A. § 1417(a).

²MPRSA § 105(a), 33 U.S.C.A. § 1415(a). Emergency dumping "to safeguard life at sea" is not considered a violation even if not permitted, although failure to notify EPA of the fact could constitute a violation of a duty to report. See MPRSA § 105(h), 33 U.S.C.A. § 1415(h).

³MPRSA § 105(b), 33 U.S.C.A. § 1415(b).

⁴MPRSA § 105(e), 33 U.S.C.A. § 1415(e).

⁵MPRSA § 105(g), 33 U.S.C.A. § 1415(g). See *Town of Huntington v. Marsh*, 859 F.2d 1134, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20192 (2d Cir. 1988) (discussing standard for injunction prohibiting Corps issuance of dumping permits).

⁶The air and water citizen suit sections bar actions where the government is pursuing judicial enforcement and are silent on the issue of administrative enforcement.

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¹Pub. L. No. 101-380, § 1002, 104 Stat. 484 (1990). See Russell Randle, "The Oil Pollution Act of

a single federal fund called the Oil Spill Liability Trust Fund to pay for response and monitoring costs; federal authority to order removal action or conduct such action itself; standards and reviews for licensing tank personnel; tightened tank equipment standards; spill prevention control and countermeasure plan requirements for onshore facilities, offshore facilities, and vessels; criminal penalties for violation of the Act; and civil penalties for spills of oil and other hazardous substances. The Act also condones participation of the United States in an international oil liability and compensation scheme. The oil spill cleanup program is discussed in § 14:86.

XI. MISCELLANEOUS CLEAN WATER ACT PROVISIONS

§ 13:144 Federal facilities

The Act contains a federal facilities compliance provision similar to those contained in the other federal environmental laws. Section 313 provides that each agency, department, or instrumentality of the executive or judicial branches having jurisdiction over any property or facility, or engaged in any activity “resulting, or which may result in the discharge or runoff of pollutants, and each officer, agent or employee thereof in the performance of his official duties,” is subject to, and must comply with, “all Federal, State, interstate and local requirements, administrative authority, and process and sanctions¹ respecting the control and abatement of water pollution in the same manner, and to the same extent as any nongovernmental entity, including the payment of reasonable service charges.”²

Although federal entities are subject to state court enforcement, there is an absolute right to remove any such suit to federal court pursuant to 28 U.S.C.A. § 1441, federal personnel and agents are not personally liable for civil penalties, and federal entities are liable for civil penalties only if levied by a court. Moreover, EPA has the power to limit to some extent the degree of state control over federal facilities by limiting federal delegation authority under § 402.³ Finally, the president has the power to exempt specific government sources and classes of military equipment for limited times upon a finding that such exemption is in the “paramount interest of the United States.”⁴

What is not clear from the statutory language or the legislative history is the meaning of the term “sanctions.” Whether federal entities may be responsible for the payment of criminal fines or whether federal employees may be incarcerated for criminal violations of state laws is doubtful. Given the courts’ reluctance to afford expansive construction to the statute in the past,⁵ and the specific reference to civil penalties in the statute, it is likely that attempts to seek criminal penalties against

1990: Its Provisions, Intent, and Likely Effects,” 21 *Envtl. L. Rep.* (Envtl. L. Inst.) 10119 (Mar. 1991); *see generally* Russell Randle, *The Oil Pollution Deskbook* (2d ed. 2012).

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¹The statute was amended significantly in 1977 by §§ 60 and 61 of Pub. L. No. 95-217 in response to a series of earlier court decisions that construed the original language narrowly. *See, e.g., Minnesota v. Hoffman*, 543 F.2d 1198, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20066 (8th Cir. 1976). The 1977 amendments made it clear that federal facilities would have to secure state permits and could be subject to state enforcement.

²CWA § 313(a), 33 U.S.C.A. § 1323(a).

³*See EPA v. California ex rel. State Water Res. Control Bd.*, 426 U.S. 200, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20563 (1976), *superseded by statute as stated in DeKalb County, Georgia v. United States*, 108 Fed. Cl. 681 (Fed. Cl. 2013). *See also* § 13:121 n.10 and accompanying text (limitation of state enforcement powers).

⁴This authority has rarely been used. The exemption is available where its basis is lack of an appropriation only if the appropriation has been specifically sought and refused.

⁵*See EPA v. California ex rel. State Water Res. Bd.*, 426 U.S. 200, 6 *Envtl. L. Rep.* (Envtl. L. Inst.)

federal employees for acts undertaken in their official capacities will not be successful.

The Department of Justice has argued for some time that federal facilities are not subject to civil penalties under the Act and particularly civil penalties imposed pursuant to a § 505 citizen suit. The lower courts had generally taken a different view,⁶ but the issue was decided by the Supreme Court in 1992 in favor of the federal government in *United States Department of Energy v. Ohio*.⁷ The Supreme Court found that Congress had not waived the federal government's sovereign immunity from liability for civil fines imposed by a state for past violations of the Clean Water Act or a delegated state program in either the federal facilities or citizen suit provisions of the Act.

With regard to the imposition of such "punitive," retroactive penalties under the citizen suit provision, the majority reasoned that the incorporation of the civil penalties section into the citizen suit provision carries with it the former's definition of the term "person"; since that term does not include the United States, no waiver of immunity could be found.⁸ On the issue of whether punitive penalties are authorized by the federal facilities provision of the Act, the Supreme Court found that "the very fact . . . that the text speaks of sanctions in the context of enforcing 'process' . . . is a good reason to infer that Congress was using 'sanction' in its coercive sense, to the exclusion of punitive fines."⁹

The majority dismissed Ohio's argument that the phrase "civil penalties arising under federal law" provided a grounds for imposing punitive fines on federal agencies; under Court precedent, the Court concluded, civil penalties imposed under state law, including an EPA-approved SPDES program, do not "arise under federal law" within the meaning of § 313.¹⁰ The Court recognized that its interpretation of the federal facilities provision left unresolved the question as to what Congress could have meant by using the phrase "civil penalties arising under federal law" in § 313.¹¹

§ 13:145 Marine sanitation devices

Discharges of sewage from vessels are exempt from the Act's basic regulatory

20563 (1976) *superseded by statute as stated in* DeKalb County, Georgia v. United States, 108 Fed. Cl. 681 (Fed. Cl. 2013); *Minnesota v. Hoffman*, 543 F.2d 1198, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20066 (8th Cir. 1976).

⁶*See* *Sierra Club v. Dep't of the Interior*, 728 F. Supp. 1513, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20650 (D. Colo. 1990), *aff'd*, 931 F.2d 1421, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 21195 (10th Cir. 1991). This decision was vacated and remanded by the Supreme Court in 1992 for further consideration in light of the decision in *U.S. Dep't of Energy v. Ohio*, 503 U.S. 607, Env'tl. L. Rep. (Env'tl. L. Inst.) 20804 (1992). *See also* *California v. Dep't of the Navy*, 845 F.2d 222, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20863 (9th Cir. 1988).

⁷*U.S. Dep't of Energy v. Ohio*, 503 U.S. 607, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20804 (1992) (also addressing the same issue under RCRA). The U.S. Dep't of Energy conceded that the Act authorizes the imposition of "coercive" fines, such as those imposed to induce federal agencies to comply with injunctions or other judicial orders. *U.S. Dep't of Energy v. Ohio*, 503 U.S. 607, 613 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20804 (1992).

⁸*U.S. Dep't of Energy v. Ohio*, 503 U.S. 607, 619, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20804 (1992).

⁹*United States Dep't of Energy v. Ohio*, 503 U.S. 607, 1637, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20804 (1992).

¹⁰*U.S. Dep't of Energy v. Ohio*, 503 U.S. 607, 1639, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20804 (1992).

¹¹*U.S. Dep't of Energy v. Ohio*, 503 U.S. 607, 1639, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20804 (1992). Justice White, joined by Justices Blackmun and Stevens, concluded in the dissenting opinion that the federal facilities and citizen suit provisions of the Clean Water Act "clearly contemplate a waiver of immunity as to suit for civil damages." *U.S. Dep't of Energy v. Ohio*, 503 U.S. 607, 1644, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20804 (1992).

program. Authority is divided between EPA and the Coast Guard, each of which have issued regulations to implement their respective parts of the program.¹

The § 312 scheme involves the development by EPA of performance standards for marine sanitation devices applicable to new vessels and vessels existing on the date of the standards, which have sanitation devices already on them,² and the issuance by the Coast Guard of design, construction, installation, and operation standards implementing the performance standards. The agencies were to develop initial standards and revise them periodically.³

Standards applicable to existing vessels are enforced against the vessel operators, and new vessel standards are the responsibility of manufacturers.⁴ The agencies are empowered to, and do, discriminate among types and classes of vessels as to the degree of treatment required.⁵

States are basically preempted from regulating vessel discharges. EPA is empowered to prohibit sewage discharges in designated waters and has done so for freshwater impoundments and lakes whose inlets and outflows do not permit vessel traffic.⁶ The Agency is also empowered to approve state requests for discharge prohibitions into “some or all of” the state’s waters upon a showing by the state that there are adequate onshore removal facilities available in the areas affected by the proposed ban.⁷ A separate state ban authority is contained in § 312(f)(4). Under that provision, EPA may adopt state requests to ban discharges in “specified waters” that require prohibition for “protection and enhancement” of their quality⁸ and within “drinking water intake zones.”⁹ Although the statutory language is somewhat ambiguous, it appears that the “(f)(3)” ban is intended to involve broad areas in which essentially only holding tanks would be permitted, while the “(f)(4)” bans could involve either prohibition of vessels carrying discharging devices or simply chart demarcations indicating the areas that are off limits.

[Section 13:145]

¹EPA’s regulations are at 40 C.F.R. Part 140. The Coast Guard Regulations are published at 33 C.F.R. Part 159.

²CWA § 312(b)(1), 33 U.S.C.A. § 1322(b)(1). Congress deliberately avoided requiring small boat owners whose boats do not have toilets to install them. Congress mandated secondary treatment as the standard for vessels operating in the Great Lakes. *See* CWA § 312(c)(1)(B), 33 U.S.C.A. § 1322(c)(1).

³Existing vessels whose systems met the initial standards were grandfathered against upgraded standards so long as the existing facilities were not replaced.

⁴*See* 33 C.F.R. §§ 159.5, 159.7.

⁵CWA § 312(c)(2), 33 U.S.C.A. § 1322(c)(2). The agencies developed separate requirements built around Type I, Type II, and Type III devices, as defined in 33 C.F.R. § 159.3.

⁶40 C.F.R. § 140.3(a).

⁷CWA § 312(f)(3), 33 U.S.C.A. § 1322(f)(3); 40 C.F.R. § 140.4(a). States are otherwise prohibited from imposing more stringent requirements.

⁸CWA § 312(f)(4)(A), 33 U.S.C.A. § 1322(f)(4)(A). EPA’s regulation, 40 C.F.R. § 140.4(b), indicates that the state’s water quality standards are the key to this provision. To date, two areas, the Boundary Waters Canoe Area and Caribou Roadless Area, both in Minnesota, have been made subject to the ban. 40 C.F.R. § 140.4(b)(1).

⁹CWA § 312(f)(4)(B), 33 U.S.C.A. § 1322(f)(4)(B).

Chapter 14

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State Environmental Law | Chapter 19. Public Hazard Disclosure, Pollution Prevention, and Environmental Advertising

State Environmental Law | Chapter 20. Groundwater Protection Systems

Superfund and Brownfields Cleanup

Law of Environmental Protection | Chapter 14. Soil and Groundwater

Primary Authority

Clean Water Act § 101(a)(1), 33 U.S.C.A. § 1251(a)(1)

Resource Conservation and Recovery Act, 42 U.S.C.A. § 6901

Solid Waste Disposal Act, 42 U.S.C.A. § 6901

Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C.A. § 9601

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I. INTRODUCTION AND HISTORICAL ROOTS OF HAZARDOUS WASTE MANAGEMENT

§ 14:1 Introduction

Federal law governing hazardous waste is comprised of several statutes,¹ so it is difficult to see as a whole. This chapter describes this area of law, which lies at the confluence of three streams: regulation of pollutants diverted from other media; regulation of waste disposal; and cleanup of abandoned chemicals. Varied enactments on these subjects have coalesced into what we now call hazardous waste law.

§ 14:2 The original problem: Mountains of trash

Trash disposal, once regulated solely by county or municipal governments—if at all—has over the last 50 years or so become a federal matter as a result of its potential for environmental impacts. There has been a federal program of assistance to state and local entities since the 1950s,¹ and hazardous and solid waste disposal now is nationally regulated along with air and water pollution.² The origins of trash regulation are notable, however, given its place at the roots of solid waste regulation.

Progressives at the turn of the last century made trash disposal a national priority. Many cities were corrupt and dirty; the Progressives sought to clean them up, literally and figuratively. Edward Bok, the young editor at the *Ladies Home Journal*, was one of the more curious figures in the Progressive movement; urban tidiness became one of his magazine's crusades, along with the Boy Scouts, hygiene and general uplift:

Bok began to note the disreputably untidy spots which various municipalities allowed in closest proximity to the centre of their business life, in the most desirable residential

[Section 14:1]

¹See Clean Water Act §§ 208(b)(2)(J)-(K), 33 U.S.C.A. §§ 1288(b)(2)(J)-(K) (waste management plans); Safe Drinking Water Act (SDWA), §§ 1421 to 1445, 42 U.S.C.A. §§ 300h to 300h-5 (underground injection control); Resource Conservation and Recovery Act of 1976, tit. C, 42 U.S.C.A. §§ 6921 to 6939g; Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), 42 U.S.C.A. §§ 9601 to 9675; Marine Protection, Research and Sanctuaries Act, 16 U.S.C.A. §§ 1401 to 1455 (ocean dumping).

[Section 14:2]

¹The United States Public Health Service provided assistance of about \$50,000 per year to local governments for solid waste disposal research from the early 1950s under authority of the Public Health Service Act, 42 U.S.C.A. §§ 241, 264(a) (public health research and vector control); see Kovacs & Klucsik, *The New Federal Role in Solid Waste Management: The Resource Conservation and Recovery Act of 1976*, 3 Colum. J. Envtl. L. 205 (1976). More recent statutes begin with the Solid Waste Disposal Act of 1965, Pub. L. No. 89-272, tit. II, 79 Stat. 997 (assistance to states to develop solid waste disposal plans), amended by Resource Recovery Act of 1970, Pub. L. No. 91-512, 84 Stat. 1227 (guidelines and grants for demonstration facilities), revised by Resource Conservation and Recovery Act of 1976, Pub. L. No. 94-580, 90 Stat. 2795 (comprehensive regulatory scheme for waste disposal), amended by Quiet Communities Act of 1978, Pub. L. No. 95-609, § 7, 92 Stat. 3079; Solid Waste Disposal Act Amendments of 1980, Pub. L. No. 96-482, 94 Stat. 2334; Used Oil Recycling Act of 1980, Pub. L. No. 96-463, 94 Stat. 2055; CERCLA § 37, Pub. L. No. 96-510, tit. III, § 307, 94 Stat. 2767; Hazardous and Solid Waste Amendments of 1984 (HSWA), Pub. L. No. 98-616, 98 Stat. 3221.

²The regulatory statute is now commonly referred to as the Resource Conservation and Recovery Act (RCRA), 42 U.S.C.A. §§ 6921 to 6992(k), although it is in fact a series of amendments to the Solid Waste Disposal Act of 1965. See note 1.

sections, and often adjacent to the most important municipal buildings and parks.³

Bok published photographs of the dozen worst municipal eyesores in *Ladies Home Journal*. Around the same time Lincoln Steffens was writing about similar issues in "The Shame of the Cities" in the notable muckraking outlet *McClure's*. In his autobiography, Bok wrote:

[L]ocal pride was aroused, and as a result not only were the advertised "dirty spots" cleaned up, but the municipal authorities went out and hunted around for other spots in the city, not knowing what other photographs Bok might have taken. . . . Cities throughout the country now began to look around to see whether they had dirty spots within their limits, not knowing when the . . . photographers might visit them.⁴

At about the same time, the Sierra Club was organized, and the conservation movement turned to preserving natural areas for recreation.⁵ Municipalities began to set up trash disposal monopolies under city ownership, and the city or county "dump" was born, the child of a national reform movement. Forty years after Bok's crusade, the county dump had become an eyesore and a health hazard; litter, once an urban problem, was spreading over the countryside. Conservationists, therefore, extended Bok's urban tidiness campaign to the country. Hiking groups organized volunteers to pick up trash; Keep America Beautiful, Inc. (KAB), an organization of disposable packaging manufacturers, advertisers, and publishers, ran anti-litter campaigns; and publishers and broadcasters donated time and space to the effort. Some conservation groups continue to join with KAB in volunteer efforts to reduce trash and litter; recycling campaigns and programs are now common phenomena.

In the 1960s, a new type of concern for natural resources began to emerge. Environmental organizations, which were quite different in their attitudes and concerns from the older conservationist groups, began to search for the root causes of pollution.⁶ Emerging economic theories traced the origin of pollution to the careless use of resources; the most common version of this theory held that the "external" environmental costs such as disposal were not included in the costs of production.⁷ Disposable packaging became a symbolic enemy of the new environmental movement, which resembled its Puritan and Progressive forbears in its opposition to waste and untidiness. Another theory posited that the waste of natural resources revealed an underlying flaw in capitalism which could only be cured by more fundamental social and economic change.⁸ Both conservative and more radical arguments nonetheless supported the common cause of reducing the use of disposable packaging.

With the defeat of proposed federal anti-litter legislation in 1976⁹ the anti-litter movement had reached its high-water mark; the movement's ethic had been widely accepted, and KAB and its adversaries moved their battlegrounds to state legislatures and municipalities. The anti-litter campaigns left their mark in the law, however. Archaic language in federal statutes is a reminder of their origins; the term for a waste disposal facility that pollutes groundwater is, incongruously, an

³E. Bok, *The Americanization of Edward Bok* 255–56 (1921).

⁴E. Bok, *The Americanization of Edward Bok* 256–57 (1921).

⁵See A. Gilliam, *Voices for the Earth: A Treasury of the Sierra Club Bulletin* xix–xxi, 499–500 (1979).

⁶See, e.g., *Our World in Peril*, An Environment Review (S. Novick & D. Cottrel eds. 1971).

⁷See, e.g., F. Anderson, A. Kneese, P. Reed, R. Stevenson & S. Taylor, *Environmental Improvement Through Economic Incentives* 4–6, 41–45 (1977); D. Thompson, *The Economics of Environmental Protection* 8–11 (1973).

⁸B. Commoner, *The Closing Circle* 295–96 (1971).

⁹See Kovacs and Klucsik, *The New Federal Role in Solid Waste Management: The Resource Conservation and Recovery Act of 1976*, 3 Colum. J. Env'tl. L. 257–60 (1976).

“open dump.”¹⁰

In sum, trash disposal became a legitimate concern of the federal government during the Progressive Era, when national attention was needed to reform municipal corruption. In the 1970s, the environmental movement gave new content to this concern.

§ 14:3 Diversion of pollutants

In the 1960s, the Department of Interior had responsibility for surface water pollution control, and sought to extend this jurisdiction to groundwater.¹ At the same time, dramatic changes in the Federal Water Pollution Control Act (FWPCA) were being considered; a bill would have extended the law's jurisdiction to groundwater,² and the debates on the 1972 FWPCA Amendments proposed a federal groundwater pollution program patterned on existing surface water pollution legislation.³

The principal objection to the groundwater scheme was that it would set up a federal program of land-use planning, traditionally a local government concern. These fears were well founded; some proponents of regulation saw it as a federal land-use planning tool, because at that time it was thought that groundwater pollution stemmed primarily from unplanned growth.⁴ Another objection was that groundwater was physically too complex to regulate with standards.

The fight over groundwater jurisdiction was inconclusive. Both sides claimed victory in the Senate Report on the 1972 Clean Water Act Amendments,⁵ while the statute itself was ambiguous.⁶ The Environmental Protection Agency (EPA) continued to assert jurisdiction over groundwater in the agency's surface water pollution control program, but its view was rejected by certain courts.⁷ When the Safe Drinking Water Act expressly gave EPA jurisdiction over some injection disposal

¹⁰RCRA § 1004(14), 42 U.S.C.A. § 6903(14) (definition of “open dump”).

[Section 14:3]

¹*See, e.g.*, Federal Water Quality Administration, Department of Interior, Clean Water for the 1970s: A Status Report 16–17, 23 (1970).

²Federal Water Quality Administration, Department of Interior, Clean Water for the 1970s: A Status Report 16 (1970).

³*See, e.g.*, S. Conf. Rep. No. 1236, 92d Cong., 2d Sess. 116 (1972), *reprinted in* 1 Committee on Public Works, A Legislative History of the Water Pollution Control Act Amendments of 1972 299 (1973); S. Rep. No. 414, 92d Cong., 1st Sess. 52–53 (1971), *reprinted in* 1 Committee on Public Works, A Legislative History of the Water Pollution Control Act Amendments of 1972 1470–71 (1973); *see also* 1 Committee on Public Works, A Legislative History of the Water Pollution Control Act Amendments of 1972 275 (1973) (remarks of Representative Kemp) (noting that groundwater was being given the same emphasis as surface water “for the first time in history”).

⁴*See* S. Rep. No. 414 at 73, *reprinted in* 1 Committee on Public Works, A Legislative History of the Water Pollution Control Act Amendments of 1972 1491 (1973).

⁵S. Rep. No. 414 at 98, *reprinted in* 1 Committee on Public Works, A Legislative History of the Water Pollution Control Act Amendments of 1972 1513 (1973) (supplemental views of Senator Dole).

⁶The question is whether groundwater was included within the definition of “waters” of the United States. *See generally* Eckert, EPA Jurisdiction Over Well Injection Under the Federal Water Pollution Control Act, 9 Nat. Resources Law. 455, 456–58 (1976) (citing cases which support the proposition that FWPCA jurisdiction could include groundwater if underground waters would “flow into or otherwise affect surface waters”).

⁷*Compare* United States Steel Corp. v. Train, 556 F.2d 822, 851–53, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20419, 20432 (7th Cir. 1977) (EPA may regulate disposal wells under the Clean Water Act's § 402 permit provisions) *with* Exxon Corp. v. Train, 554 F.2d 1310, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20594 (5th Cir. 1977) (deep disposal well not required to obtain EPA permit); *see also* Eckert, EPA Jurisdiction Over Well Injection Under the Federal Water Pollution Control Act, 9 Nat. Resources Law. 455, 456–58 (1976) (analysis of cases discussing extent of EPA jurisdiction over groundwater).

wells in 1974,⁸ the agency gave up its efforts to extend all of the Clean Water Act to groundwater protection.

Yet some groundwater protection language was included in the 1972 Clean Water Act Amendments.⁹ The states were required by § 208 of the Act to make plans for regulating water pollution from all sources, including those from sources outside the permit system administered by EPA.¹⁰ The states' plans were to include provisions for controlling groundwater contamination from waste disposal:

Any [state] plan . . . shall include, but not be limited to . . . (J) a process to control the disposition of all residual waste generated in [the planning area] which could affect water quality; and (K) a process to control the disposal of pollutants on land or in subsurface excavations within such [planning] area to protect ground and surface water quality.¹¹

While the details of groundwater protection were left to the states, EPA was to provide technical information and criteria for groundwater quality which the states were to employ in their § 208 plans.¹²

This was arguably the first federal hazardous waste legislation and the first general groundwater protection statute. It remains in the Clean Water Act,¹³ although EPA did not give the legislation life.¹⁴ Section 208 created, for the first time, a distinction between ordinary waste (trash) and hazardous waste. The statute used the term “pollutants” to distinguish the more hazardous waste, which was then subject to special regulation when disposed of on the land.¹⁵ The term betrays its origins; the drafters of the statute believed, with some justification, that provisions controlling surface water pollution might drive industrial operators to deposit their wastes into wells and landfills. Section 208 plans were meant to keep the surface-water pollutants from being shifted to groundwater.

Section 208 was defeated by its own ambition. A national land-use planning system was politically impracticable and, in any case, had no real constituency.¹⁶ EPA, as is often the case, was consumed by narrower issues and did not give much attention to the broad planning process the Clean Water Act envisioned. Concern for groundwater focused on specific sources of contamination while the broader prevention program languished. But the concern was not entirely forgotten; four years later, in 1976, similar bills were proposed as Solid Waste Disposal Act

⁸Pub. L. No. 93-523, §§ 1421 to 1424, 88 Stat. 1660, 1674, to 1680 (1974) (current version codified at 42 U.S.C.A. §§ 300h to 300h-4).

⁹The 1972 amendments were, properly speaking, the Federal Water Pollution Control Act Amendments of 1972, Pub. L. No. 92-500, § 2, 86 Stat. 816. The present form of the statute is commonly referred to as the “Clean Water Act,” however, and to avoid confusion, it will be referred to by this designation.

¹⁰Clean Water Act § 208(b), 33 U.S.C.A. § 1288(b) (“planning process”).

¹¹Clean Water Act § 208(b)(2)(J)-(K), 33 U.S.C.A. § 1288(b)(1)(B), (2)(J)-(K).

¹²See Clean Water Act §§ 304(a)(1)-(6), 33 U.S.C.A. §§ 1314(a)(1)-(6) (1982); *Exxon Corp. v. Train*, 554 F.2d 1310, 1325-26, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20594, 20601-02 (5th Cir. 1977).

¹³See this section note 11.

¹⁴Clean Water Act §§ 208(b)(2)(J)-(K), 33 U.S.C.A. §§ 1288(b)(1)(B) (2)(J)-(K). See Wilkins, *The Implementation of Water Pollution Control Measures—Section 208 of the Water Pollution Control Act Amendments*, 15 Land & Water L. Rev. 479, 480 (1980) (ineffectiveness of § 208 attributable to congressional naiveté); Comment, *Enforcement of Section 208 of the Federal Water Pollution Control Act Amendments of 1972 to Control Nonpoint Source Pollution*, 14 Land & Water L. Rev. 419, 446 (1979) (§ 208 not effective to control nonpoint source pollution due to EPA unwillingness to compel production of state programs). But see Mandelker, *The Role of the Comprehensive Plan in Land Use Regulation*, 74 Mich. L. Rev. 899 (1976) (§ 208 is useful planning tool).

¹⁵22 U.S.C.A. § 1288(B)(2)(k); see also this section note 12.

¹⁶But see Train, *The EPA Programs and Land Use Planning*, 2 Colum. J. Env'tl. L. 255 (1975) (former administrator of EPA argues for rational land-use legislation to integrate all environmental laws).

Amendments.¹⁷ In what would eventually become the Resource Conservation and Recovery Act (RCRA),¹⁸ the provisions for trash disposal plans and special regulation of more hazardous waste were repeated, but with far stronger federal enforcement authority than had been provided in the Clean Water Act.¹⁹

§ 14:4 Waste disposal law

While these pollution control laws were evolving, waste disposal laws were undergoing their own transformation. Partly because of the boom in disposable packaging, roadside litter was growing worse, and the cities were running out of space in their landfills. Bills were introduced in Congress in the 1970s to reduce the volume of wastes by making waste disposal more difficult and expensive, and less disruptive to the environment.¹ According to the theory behind these bills, the costs of product disposal were not being taken into the marketer's accounting; the environment was, therefore, being consumed as if it had no value.² The waste disposal bills sought to internalize these costs, thereby making the costs of disposal part of the market price of the product. This would in theory allow the marketplace to allocate environmental resources in the most efficient manner. As an afterthought, the bills also encouraged the creation of state plans—in a manner similar to the air and water statutes—for better regulation of disposal; the main purpose, however, was to discourage the discarding of valuable products by making disposal costly and recycling more accessible.

One of the principal legislative proposals was for a required deposit on disposable beverage containers, then believed to make up a large part of litter and solid waste.³ Most of the debate in Congress in 1975 and 1976 concerned mandatory deposit proposals, commonly known as “bottle bills,”⁴ but the proposals became so contentious that their sponsors were forced to withdraw. Bottle deposits are now typically the subject of state law.

However, the remaining provisions of the principal waste disposal bills were put together in a compromise negotiated between staffs of the House Commerce and Senate Public Works committees. These were passed by both houses without a

¹⁷Pub. L. No. 94-580, § 2, 90 Stat. 2795 (1976).

¹⁸See RCRA, tit. C, 42 U.S.C.A. §§ 6921 to 6939g; CERCLA, Pub. L. No. 96-510, 94 Stat. 2767, codified as amended in scattered sections of titles 26, 33, 42, 49 U.S.C.A.; Marine Protection, Research and Sanctuaries Act, 16 U.S.C.A. §§ 1401 to 1455 (ocean dumping).

¹⁹EPA could enforce the § 208 planning requirements only by withholding financial assistance, *see* *Natural Resources Defense Council v. Costle*, 564 F.2d 573, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20702, 20705 (D.C. Cir. 1977), whereas by contrast the agency could enforce RCRA directly. *See* RCRA §§ 7002 to 7003, 42 U.S.C.A. §§ 6972 to 6973 (1982).

[Section 14:4]

¹See Kovacs & Klucsik, *The New Federal Role in Solid Waste Management: The Resource Conservation and Recovery Act of 1976*, 3 Colum. J. Env'tl. L. 205, 216–59 (1976).

²See F. Anderson, A. Kneese, P. Reed, R. Stevenson & S. Taylor, *Environmental Improvement Through Economic Incentives* 3–4 (1977).

³Kovacs & Klucsik, *The New Federal Role in Solid Waste Management: The Resource Conservation and Recovery Act of 1976*, 3 Colum. J. Env'tl. L. 205, 259 (1976).

⁴See, e.g., 122 Cong. Rec. 21393–401 (1976) (floor debate on the Solid Waste Utilization Act of 1976, S. 2150, introduced by Senator Randolph of West Virginia). Although Senator Randolph's bill had many of the elements of the final statute regulating hazardous waste, the floor debate was almost solely concerned with amendments proposed by Senator Hatfield to ban disposable beverage containers. 122 Cong. Rec. 21404–728 (1976). There was no special discussion of hazardous wastes nor groundwater protection, although these were the focus of the final legislation. Aside from the interest in beverage containers, the Senate was absorbed by the Toxic Substances Control Act, Pub. L. No. 94-469, 90 Stat. 2003 (1976), codified as amended at 15 U.S.C.A. §§ 2601 to 2629, then under consideration by another subcommittee.

conference: no member of the House read the final RCRA bill before it was enacted.⁵

What remained after removal of the federal bottle bill provisions was the regulation of disposal facilities—echoing § 208 of the Clean Water Act which required state plans for trash disposal and more stringent plans for the safe disposal of hazardous waste. The final waste disposal law was titled the Resource Conservation and Recovery Act of 1976.⁶ The new statute had some teeth by requiring EPA to prepare criteria for many provisions of the state plans, including performance standards for disposal facilities.⁷ The plans were to include a permit system which EPA was to administer until the states had enacted adequate legislation.⁸ The now-familiar manifest systems were to be used to ensure that hazardous wastes were sent only to permitted facilities.⁹

For the first time in waste disposal law, pollution control had become dominant; groundwater protection, never before mentioned in the Solid Waste Disposal Act, now became the single most important environmental purpose of the new amendments.¹⁰ The old bottles of the Progressive movement's concern with cleanup of trash and waste had been filled with the new wine of groundwater protection.

§ 14:5 Confusion and delay

EPA had extraordinary difficulties implementing RCRA. Problems persisted under two administrations and many changes of personnel; some of the difficulties must therefore be attributed to the statute and to the difficulty of the task it set.

In retrospect, it is evident that there were two serious and closely connected problems embedded in the hazardous waste provisions of Subtitle C of RCRA.¹ First, there was little in the statute or its history to indicate just what Congress wanted to have done in this field. Second, to the extent the statute gave explicit directions, it embodied a contradiction.²

The paucity of express direction is not surprising. Subtitle C had all the worst aspects of a purely advisory opinion of the kind federal courts are wisely kept from making. If there was a problem stemming from hazardous waste disposal, that problem has not been crystallized in the statute; there was a vague belief that pollutants kept from the air and water by the command of earlier statutes were now being dumped on the land, from which the pollutants would eventually find their way back into the air and water by a more circuitous route. There was some

⁵Kovacs & Klucsik, *The New Federal Role in Solid Waste Management: The Resource Conservation and Recovery Act of 1976*, 3 Colum. J. Envtl. L. 205, 216–20 (1976).

⁶Pub. L. No. 94-980, 90 Stat. 2795 (1976), codified as amended at 42 U.S.C.A. §§ 6901 to 6987, 9001 to 9010.

⁷RCRA §§ 3004 to 3005, 42 U.S.C.A. §§ 6924 to 6925.

⁸RCRA § 3005, 42 U.S.C.A. § 6925.

⁹RCRA § 3002(a)(5), 42 U.S.C.A. § 6922(a)(5).

¹⁰*See generally* House Comm. on Interstate and Foreign Commerce, Subcomm. on Transportation and Commerce, 94th Cong., 2d Sess., *Staff Materials Relating to the Resource Conservation and Recovery Act of 1976*; *see also* 122 Cong. Rec. 32597 (1976) (opening statement of Representative Rooney, floor manager of the House bill) (“At present EPA lacks the authority to protect health and the environment from those often lethal substances indiscriminately dumped in the nearest landfill without regard to the presence of underground water supplies or the danger of poisoning by contact.”); J. Quarles, *Federal Regulation of Hazardous Wastes* xv, xix, 15 (1982).

[Section 14:5]

¹RCRA §§ 3001 to 3013, 42 U.S.C.A. §§ 6921 to 6934.

²The contradiction stemmed primarily from the directive that EPA was to protect health and environment, which, if carried to its logical conclusion, could require the prohibition of land disposal of hazardous wastes. *See, e.g.*, 42 U.S.C.A. § 6922(a). Yet such disposal methods were plainly intended to continue under RCRA. *See* this section notes 5-11 and accompanying text.

testimony at hearings that this was indeed happening, and a few instances of groundwater pollution actually affecting drinking water supplies were cited.³ Industrial waste disposal practices were not systematically examined, nor was there much in the record concerning the effects of regulation—or even what would be regulated and how. Yet, one clear, practical judgment is discernible on the record; hazardous wastes in open dumps and municipal landfills were problems, and hazardous wastes should therefore be disposed of only in specially licensed facilities.⁴

EPA was directed to set standards for the disposal of hazardous wastes and to create a permit and manifest system to ensure that all waste went only to facilities that met the standards.⁵ The statute makes clear that waste disposal standards were the framework on which the other regulations were to hang, but standards are of course merely a method of implementing legislative goals. What, then, does the statute intend for EPA to accomplish? The law says only, if grandly, to “protect human health and the environment.”⁶

Individual members of Congress may have meant no more, if they were conscious of this provision at all, than to express some concern and leave it to EPA to determine the precise nature and extent of the problem and then fashion an appropriate remedy. Unfortunately, the words chosen to express this vague concern created a sharp contradiction that for years immobilized EPA.

The difficulty was that most wastes, including hazardous wastes, were disposed of on the land, in landfills, lagoons, dumps, and unconstrained heaps. There was no immediate alternative to land disposal for most wastes. Many were not flammable and could not be incinerated; the air and water pollution control laws limited releases into those media; and the activities that generated wastes, including the many activities which supported human life and society, could not be carried on without them. By default, therefore, some form of land disposal was likely a practical necessity. Yet the standard set for waste disposal on land was single-minded: EPA must protect health and environment—and do nothing more nor less.⁷ EPA had no authority to consult other values, or so the statute read on its face. There was little in the law’s history to suggest alternate readings.

Toxic or hazardous pollutants often have low thresholds for causing risk in large populations: if they are released in a way that may result in many people being exposed, there is a general potential risk of injury.⁸ If EPA consults health and safety values alone, EPA can only set standards that either prohibit all releases, or allow releases of such pollutants only at negligible levels.⁹ As a practical matter, hazardous waste disposal was plainly expected to continue under RCRA; EPA is directed to

³See House Comm. on Interstate and Foreign Commerce, Subcomm. on Transportation and Commerce, 94th Cong., 2d Sess., Staff Materials Relating to the Resource Conservation and Recovery Act of 1976, 39–41.

⁴See § 14:4 note 10; H.R. Rep. No. 1491, 94th Cong., 2d Sess. 3, 9–12, *reprinted in* United States Code Congressional and Administrative News pp 6240, 6246–50 (House bill basis of final compromise with Senate).

⁵RCRA §§ 3001 to 3005, 42 U.S.C.A. §§ 6921 to 6925.

⁶RCRA § 3004, 42 U.S.C.A. § 6924.

⁷See, e.g., 42 U.S.C.A. §§ 6922(a), 6923(a), 6924(a).

⁸Ruckelshaus, Risk, Science, and Democracy, *Issues in Sci. & Tech.*, Spring 1985, at 19.

⁹In *Industrial Union Dep’t, AFL-CIO v. American Petroleum Inst.*, 448 U.S. 607, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20489 (1980), a plurality of the Supreme Court raised the interesting question of whether there was not some level of risk so low that it would be unreasonable to regulate absent express direction from Congress. A minority thought such regulation to be unconstitutional. 448 U.S. at 672–76, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20489, 20505–06 (1980).

set up a complex permitting scheme for disposal facilities.¹⁰ But hazardous waste put on the land may eventually leak away from the site of the “disposal.” Over long timeframes without active maintenance, landfills eventually must leak, no matter how securely built they may be. Was EPA, therefore, to ban disposal of hazardous wastes on land? Was such a ban possible?

Faced with an environmental quality standard that ignored cost, and with the difficulty of banning land disposal altogether, EPA vacillated for years. It tried to require landfills that would not leak for some period of time.¹¹ The agency also considered and then rejected the notion of banning certain forms of waste production. The difficulty was similar to the one EPA faced under § 112 of the Clean Air Act, which on its face seemed to require the shutdown of large industrial facilities to end the release of toxic air pollutants.¹²

Perhaps worst of all, in the view of some of RCRA’s sponsors, EPA deferred regulation of hazardous waste from “small generators”—waste generators which produced less than 1000 kilograms per month of hazardous waste. Wastes from small companies were most likely to go to municipal landfills; EPA thus seemed to ensure that the one clear mandate contained in RCRA, to keep hazardous waste out of ordinary landfills, would be greatly delayed. In fact, the exemption created by EPA persisted until the statute was amended in 1984.¹³ EPA officials had worried about putting small businesses out of operation. The agency had also feared the threat of massive noncompliance. These were reasonable concerns. It was not until the Reagan Administration inadvertently mobilized the public via an EPA scandal that political support for stringent regulation could be assured.¹⁴

§ 14:6 Love Canal

In 1976, when RCRA was enacted, concern about hazardous wastes had been somewhat abstract and theoretical. But a few months later, the press began to report on an abandoned chemical dump in New York State.¹ A school and some houses had been built on the site of the filled dump, and the people who lived there were frightened for the health of their children.² The place had the memorable, if incongruous, name of Love Canal; it gave life to the abstract concern over hazardous wastes.

The residents of the area were eager to protect their children and to recover for the damages they had suffered. Among other courses of action, they brought suit against the Hooker Chemical Company and other companies whose discarded

¹⁰RCRA § 3005, 42 U.S.C.A. § 6925.

¹¹46 Fed. Reg. 28314 (May 26, 1981).

¹²Clean Air Act § 112, 42 U.S.C.A. § 7412; see Ruckelshaus, Risk, Science, and Democracy, *Issues in Sci. & Tech.*, Spring 1985, 21–22. For a brief account of EPA’s vacillations, see Smith, EPA’s Permitting Requirements for Land Disposal Facilities, 15 *Nat. Resources L. Newsletter* 1 (1982).

¹³HSWA, Pub. L. No. 98-616, § 221, 98 Stat. 3221, 3248–51 (codified at 42 U.S.C.A. § 6921(d)).

¹⁴The Reagan Administration effort in 1981 and 1982 to reorganize EPA and to conserve funds for hazardous waste cleanup produced a spectacular confrontation with the Democratic majority in the House of Representatives. EPA Administrator Anne Gorsuch was forced to resign and hazardous waste program chief Rita Lavelle served a prison sentence for perjuring herself before a congressional committee. The scandals attracted public attention and gave irresistible force to congressional proposals for strict regulation of hazardous waste. See, e.g., J. Lasch, K. Gillman & D. Sheridan, *A Season of Spoils* (1985); A. Burford & J. Greenya, *Are You Tough Enough?* (1986).

[Section 14:6]

¹A. Levine, *Love Canal: Science, Politics, and People* 2, 16–21 (1982).

²A. Levine, *Love Canal: Science, Politics, and People* 2, 11–15 (1982).

chemicals were believed to be present at the dump.³ But Hooker had filled in the land and donated it to the school district years before; the suits against Hooker faced other serious obstacles, and the school district had no significant assets.

EPA had little authority to assist the local residents in cleaning up the horror they had found under their feet; local governments had little money or expertise. EPA had some authority under the Clean Water Act to require cleanup of oil spills on or near surface waters; costs of cleanup could be recovered from the originators of the spills, regardless of fault. The recovered money would then go into a revolving cleanup fund.⁴ The oil-spill cleanup program had worked well; it provided a base of experience and some model procedures for a federal emergency response program.

Seizing on the precedent, in 1978, Congress quickly extended the reach of the Clean Water Act program to cover spills of hazardous chemicals, as well as petroleum, on or near navigable water. The National Contingency Plan was altered to allow EPA to respond when the spill occurred at an “on shore” facility threatening a navigable waterway; the Coast Guard continued to respond to oil and chemical spills from vessels.⁵

Building on this slender foundation, several bills were proposed to extend the combined response program to all onshore spills; anticipating them, EPA pushed its Clean Water Act jurisdiction to—perhaps past—the limit, and began to respond to onshore spills.

There was some sentiment in Congress for keeping onshore oil and chemical spills response programs separate, but EPA favored combining the programs into a single “Superfund,” that would be replenished by recoveries from responsible parties.⁶

There was considerable opposition. David Stockman, then a Michigan Representative, and others contended that Love Canal was unique, or at least rare, and that states had both the capacity and the traditional authority for responding to such disasters.⁷ EPA staff disagreed, and they set out to dramatize their view that abandoned waste dumps were a serious national problem; senior agency officials helicoptered into suspect sites and held press conferences; sponsors of Superfund bills made lists of suspect sites in every congressional district. The Justice Department set up a special unit to bring suits under the “imminent hazard” provisions of RCRA, the Safe Drinking Water Act, and the federal common law of nuisance to abate the hazard at abandoned sites. The suits named the generators of waste found at the sites, as they were often the only solvent parties visible. EPA, after some initial reluctance, agreed to prepare such suits; the agency set informal quotas of suits for regional offices and established a new headquarters team to manage cases as they were prepared.

The result was two years of escalating publicity and pressure on members of Congress to adopt new legislation. In 1980, control of the White House and the Senate passed to Republicans. In the closing hours of the session, a lame-duck Congress passed the Comprehensive Environmental Response, Compensation and Liability

³A. Levine, *Love Canal: Science, Politics, and People* 2, 19 (1982). The U.S. Army was included among those who had allegedly disposed of materials in Love Canal, although this was denied by the Pentagon. A. Levine, *Love Canal: Science, Politics, and People* 2, 25 (1982).

⁴Clean Water Act §§ 311(f) to 311(i), 33 U.S.C.A. §§ 1321(f) to 1321(i).

⁵Clean Water Act § 311(b)-(c), 33 U.S.C.A. § 1321(b)-(c).

⁶*See generally* Stever, *Law of Chemical Regulation and Hazardous Waste* § 6:1 et seq.

⁷*See, e.g.*, 126 Cong. Rec. H9437 (daily ed. Sept. 23, 1980), *reprinted in* 1 *Superfund: A Legislative History* 111 (H. Needham & M. Menefee eds. 1984) (remarks of Mr. Stockman that only 65 of surveyed sites required response); Kovacs & Klucsik, *The New Federal Role in Solid Waste Management: The Resource Conservation and Recovery Act of 1976*, 3 *Colum. J. Envtl. L.* 205, 212–13 (1976).

Act (CERCLA), still called “Superfund.”⁸ Superfund was a chemical spill program which contained an anomalous exclusion for onshore spills of petroleum products; these remained unregulated. The onshore oil-spill cleanup bill had remained separate and was never adopted.⁹ Much later, Congress added a cleanup program for underground storage tanks to RCRA—covering the worst source of petroleum spills omitted from Superfund.¹⁰

CERCLA ratified EPA’s emergency response program, and the legal theories under which the Justice Department had brought approximately sixty “imminent hazard” suits prior to the law’s passage.¹¹ Superfund provided federal authority to respond to onshore chemical spills as emergencies, and made the generators and dumpers of waste proper defendants, despite their lack of present connection with the sites, responsible for reimbursing the cleanup fund.¹²

§ 14:7 RCRA revisited

Whatever else may have been accomplished, the national controversy over orphan dump-sites prompted people to decide how they felt about hazardous waste disposal on land. Three big constituencies took predictable positions: generators of waste saw no alternative to present practices; waste disposal companies wanted regulations that favored their existing practices; and citizens’ groups wanted land disposal stopped altogether. These categorizations are, of course, broad generalizations, but the forces acting on legislation and on EPA were manifestly blunt. The opposition to land disposal was unusually effective politically, because it came directly from large groups of voters. Citizen’s groups around the country, as well as individual citizens, have been an important source of pressure for hazardous waste control.

The Reagan Administration at first misjudged the public’s feelings about hazardous waste, which had been inflamed by the controversy over orphan sites. RCRA had always been slighted in EPA’s planning, and because the new Republican Administration in 1980 was concerned with budget cutting and the reduction of government regulation, the neglect of RCRA enforcement was not remedied. The new EPA continued to vacillate over land disposal regulations, and at first accepted the reality that landfills would leak. Then, when shocked into awareness of the depth of the public’s concern, the agency adopted standards for landfills that would keep them from leaking during their operating lives and for some time afterward.¹ EPA, however, preserved the small-generator exclusion that had so annoyed some of RCRA’s original sponsors.²

By 1984, it should have been plain that landfills would inevitably leak, and that

⁸Pub. L. No. 96-510, 94 Stat. 2767 (codified as amended in scattered sections of titles 26, 33, 42, 49 U.S.C.A.). CERCLA was passed a scant two days before the House was scheduled to adjourn. Senator Randolph remarked: “I am disappointed that such an important bill to help solve such a pressing problem must be addressed in the last days of Congress.” 126 Cong. Rec. 30930 (1980).

⁹See 126 Cong. Rec. H11795 (daily ed. Dec. 3, 1980) reprinted in 1 *Superfund: A Legislative History* 8 (H. Needham & M. Menefee eds. 1984).

¹⁰See § 14:74.

¹¹About thirty were actually filed before the statute was enacted. See generally D. Stever, *Law of Chemical Regulation and Hazardous Waste* Ch. 6.

¹²CERCLA § 107, 42 U.S.C.A. § 9607. See generally 1 *Superfund: A Legislative History* 163–361 (H. Needham & M. Menefee eds. 1984) (liability); § 14:128.

[Section 14:7]

¹See § 14:5 note 10 and accompanying text.

²See 40 C.F.R. § 261.5(a). EPA’s small generator exemption was superseded by the HSWA, Pub. L. No. 98-616, § 221, 98 Stat. 3221, 3248–51 (codified at 42 U.S.C.A. § 6921(d)). The exemption as it had existed was recognized as one of many gaps in the RCRA requirements. See H.R. Rep. No. 198, 98th Cong., 2d Sess. 19–20, reprinted in *United States Code Congressional and Administrative News* pp

the contradiction contained in RCRA had to be resolved by banning land disposal of most hazardous wastes as quickly as could be accomplished. California had already taken a step in that direction and had shown that it did not lead over a cliff. Democratic Representatives introduced bills directing EPA to carry out a staged ban similar to California's. After eight years of EPA vacillation, many Congressmen had become impatient with the agency; Reagan Administration challenges to Democratic-led House Committee authority inflamed the tempers of Congressmen and added to the public's perception that EPA could not be trusted to carry out the mandate of these laws.

The outcome was the 1984 amendments to RCRA,³ which set rigid schedules for EPA to carry out most parts of the land disposal program, including the permitting of facilities and the gradual phasing out of land disposal for most hazardous materials that might eventually escape from landfills.⁴ Some compromises among goals and schedules were adopted, and some flexibility in the ultimate standards was allowed, but Congress took back to itself the authority to make these compromises; EPA's discretion was largely withdrawn. The small-generator exception was drastically cut back, so that only generators of 100 kilograms per month or less were exempted.⁵

The prohibition of land disposal of hazardous waste was to be carried out for groups of wastes, on a schedule set by statute. If EPA missed any of the deadlines, the prohibition would take effect; EPA could act only to lift the ban. The only significant escape route from the prohibition was through treatment of the wastes. EPA was required to set national standards for waste treatment and chose to do so based on the best demonstrated, available technology (BDAT),⁶ performance standards similar to the BAT standards for toxic pollutant discharges under the Clean Water Act. Wastes treated to these standards could be land-disposed. In this indirect fashion, the hazardous waste program began to adopt national performance standards for treatment facilities that specified the "discharge" they could make into disposal facilities, similar to the limits on discharges into air and water.

The 1984 amendments to RCRA and the debates which led to them resolved another question which had puzzled EPA. Both RCRA and CERCLA had some retrospective application; the hazardous waste laws were meant to clean up the pollution caused by improper disposal in the past, as well as to prevent new problems from developing.⁷ RCRA, by now increasingly patterned after the earlier pollution control laws, directed EPA to protect health and environment and was silent as to cost or feasibility. The natural implication of the statutory language was that groundwater would be protected, regardless of cost. Cleanup, it seemed to follow, should restore

5576, 5578; § 14:40. On November 28, 2016, EPA published a final Hazardous Waste Generator Improvements Rule. 81 Fed. Reg. 85732. The rule will be effective as of May 30, 2017, but the new standards will not be effective in states authorized to administer the RCRA program until adopted by those states.

³HSWA, Pub. L. No. 98-616, § 221, 98 Stat. 3221, 3248-51 (codified at 42 U.S.C.A. § 6921(d)).

⁴See HSWA, § 101(b), 98 Stat. 3224 (codified at 42 U.S.C.A. § 6902(b)) (national policy is to reduce or eliminate hazardous waste as "expeditiously as possible"); see also HSWA § 201(a), 98 Stat. 3226-27 (codified at 42 U.S.C.A. § 6924(c)) (bulk or "noncontainerized liquid" not to be placed in any landfill, effective six months from the date of enactment; EPA was given 15 months to promulgate final regulations to "minimize" containerized as well as "free liquids"); §§ 201(d), 213, 98 Stat. 3227, 3241-42 (codified at 42 U.S.C.A. §§ 6924(d), 6925(c), (e)) (schedules for terminating "interim status," issuing permits to existing facilities; banning land disposal of certain wastes); § 201(a), 98 Stat. 3228-29 (codified at 42 U.S.C.A. § 6924(e)-(f)) (disposal of dioxins into deep injection wells prohibited unless EPA determines that such is not harmful to health); § 14:126.

⁵HSWA § 221(a), 98 Stat. 3248 (codified at 42 U.S.C.A. § 6921(d)); see § 14:104.

⁶See 42 U.S.C.A. § 6924(m); 40 C.F.R. § 268.

⁷See, e.g., HSWA § 402, 98 Stat. 3271 (codified at 42 U.S.C.A. § 6973(a)) (imminent hazard).

the original quality of groundwater; EPA made this the benchmark for RCRA cleanup. Drinking water quality standards—of which only a few had been established—were to be used when available. Acknowledging that either background or drinking water purity might be impractical to attain, the Agency set up a procedure for permit holders to establish alternate concentration limits at particular sites.⁸ Congress ratified this approach to RCRA cleanups, and then turned to the bigger question of cleanup at abandoned waste dumps.

§ 14:8 Superfund revised

By 1984, Superfund had become the focus of environmental protection—in part because of the Administration's stubborn resistance to the program—and all eyes turned to the needed reauthorization of the statute, whose funding authority would expire in 1985. The trust fund for site cleanup, initially established at \$1.5 billion, was almost entirely committed for cleanup at a few dozen sites, while EPA estimated that 1500 to 2500 sites eventually would require a remedy. The original, hastily drafted, statute was badly in need of clarification and amendment, and the interest groups affected by Superfund were well organized and intent on securing amendments when the statute was taken up again. To further complicate discussions, the toxic chemical release at Bhopal, India, generated considerable pressure for victims' compensation legislation, and for new emergency planning and disclosure rules. Superfund had become a populist program, pitting industrial companies against their neighbors. Superfund sites had been identified in most Congressional districts, and many sites were suspected of poisoning wells and water supplies. Neighborhood groups had organized around many sites, and lobbied or sued to obtain complete cleanup. By 1984, most big industrial companies were defendants in suits brought by EPA for cleanup or by private citizens for damages, and there was a large—if not always united—defense bar representing their interests in legislation.

Two full years of effort were needed to reauthorize the Superfund program. After substantive disputes had been resolved in marathon conference committee meetings (attended at times by EPA Administrator Lee A. Thomas), the reauthorization foundered on disagreement over the proper form of tax authority, and the final statute was not passed until the last hours of the Ninety-Ninth Congress, after all funding authority had expired and EPA had begun to cancel cleanup contracts. The President grudgingly signed the bill after being assured that a veto would damage Republican prospects in the forthcoming Congressional elections, and that a veto was certain to be overridden.

The Superfund Amendment and Reauthorization Act of 1986—"SARA"—greatly enlarged the cleanup program, amended RCRA, and created a new free-standing statute, the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA).¹ From the welter of issues addressed in this statute a few major themes emerged, each colored by the populist tenor of the discussion.

The first theme is responsiveness to community concerns. Community concerns were addressed by extensive new provisions allowing citizen suits and community participation in cleanup, in setting new thresholds and goals for cleanup and requiring new studies of health effects near cleanup sites. A new emergency planning and community right-to-know statute was enacted, EPCRA.

The second theme was related to the first. There was a near universal feeling outside the Administration that EPA had been too penurious and cautious, and had

⁸See generally 40 C.F.R. § 264, Subpart F; § 14:123.

[Section 14:8]

¹Pub. L. No. 99-499 100 Stat. 1613 (Oct. 17, 1986).

failed to pursue aggressively the goal of eradicating the traces of hazardous waste dumping. The Agency was put on a strict schedule, and given ample funds to meet it.

The third theme was EPA's management process. The Agency succeeded to some degree in extricating itself from the cross-fire between neighborhood groups and industrial companies by obtaining legislative authorization to proceed with cleanups without interference from outside parties. A number of measures that had come up in litigation with potentially responsible parties were resolved, and most of the remaining disagreements were postponed until cost-recovery actions. Those companies that sought—often without success—to participate in cleanup, diffusing the populist dispute by joining the cleanup program, won some modest concessions. But the dominant note was EPA cleanup at more sites, more quickly.

The following are the major changes as they affect hazardous waste law most generally, with references to fuller discussion in the chapter which follows.

§ 14:9 Superfund revised—Thresholds

CERCLA's first five-year authorization was \$1.5 billion. The SARA increased the authorization to \$8.5 billion. The money was to be used to accelerate cleanup at many more sites, without waiting for reimbursement of early expenditures. EPA was directed to revise its system for setting cleanup priority to give more weight to community health concerns, particularly concerns about contaminated drinking water. A health agency was authorized to conduct health studies in the neighborhood of priority sites, and to perform preliminary health assessments at sites neglected by EPA.

The Superfund program was to be expanded, but the question where its boundaries should be drawn—"how big is big?" as the question was commonly asked—still did not receive a complete answer.

When Superfund was first considered, the skimpy legislative history showed some concern about abandoned dumps like Love Canal,¹ but little awareness of other sources of groundwater contamination. The sponsors and opponents of the bills all seemed to assume that the evil to be remedied was chemical waste spilled intentionally or unintentionally onto the ground. The statute's language was very broad, however, and by its terms covered any release of pollution or hazardous substances.² Petroleum products were not included, as they were to be covered by separate oil spill legislation which was, however, never enacted.³

When EPA first began to evaluate the most serious sites for long-term cleanup, the Agency found that many of these sites had unexpected causes. Serious problems resulted from buried storage tanks—especially those used to store gasoline and solvents.⁴ Other unexpected sources of serious pollution included agricultural pesticides, which had contaminated large reservoirs of groundwater; mining wastes; old residues of radium work from fifty years before; and tar pits left by nineteenth century coal gasification plants. In principle, the statute might also apply to lead-

[Section 14:9]

¹The House Report contained the following, for instance: "The Love Canal health data shows elevated miscarriage and birth defect rates; evidence suggests many other health effects, the nature and extent of which are in dispute." H.R. Rep. No. 1016, Part 1, 96th Cong., 2d Sess. 19, *reprinted in* United States Code Congressional and Administrative News pp 6119, 6122.

²See CERCLA § 104(a), 42 U.S.C.A. § 9604; § 14:102.

³See CERCLA §§ 101(23), 104(b)(2), 42 U.S.C.A. §§ 9601(23), 9604(b)(2) (petroleum exclusions).

⁴While petroleum products were excluded from CERCLA's reach, underground oil tanks often contained waste oils contaminated with other hazardous substances, or mixtures of oils and other materials covered by CERCLA.

contaminated roadsides and to many city factory sites.⁵

Within this range of potential applications of the statute, nothing in the statute itself suggested to EPA where its resources should be targeted. The agency, accordingly, listed some sites contaminated by pesticides, which by objective criteria were as serious as the abandoned waste dumps Congress clearly had in mind in enacting the law. However, because pesticide applicators were exempted from liability, such cleanups might quickly exhaust the limited federal funds available. Some of the statute's early sponsors claimed to see the inclusion of pesticide-contaminated sites on the list of sites for cleanup as a betrayal of the program and accused EPA of avoiding dump sites. EPA's failure to list some sites contaminated by federal agency activity was also criticized; the general question of the program's scope came under piecemeal debate.⁶

The ultimate question of the scope of Superfund—how big is big?—has not been fully answered, and perhaps will never get a simple, direct answer. It is hard for Congress expressly to deny the cleanup program to any group of constituents, but no feasible program can address all the contaminated sites. But the 1984 RCRA amendments, the 1986 amendments of Superfund, and the Safe Drinking Water Act, taken together provided some answers.

The successive amendments made it plain that the hazardous waste laws were groundwater protection statutes, and considerably broadened their scope.⁷ Underground gasoline and oil storage tanks had been identified as a major source of groundwater contamination, but before 1984 EPA had declined to use Superfund authority to venture into this new territory. The ubiquitous problems of leaking underground tanks, exposed by the Superfund investigations and consequent public alarm, went unattended in part because "petroleum products" were excluded from EPA's cleanup authority under CERCLA. Congress in 1984 added a title to RCRA to authorize EPA to compel the owners and operators of underground tanks to clean up leaks.⁸ In SARA, Superfund was expanded and a separate \$500 million fund was created for cleaning up leaking underground petroleum storage tanks (the "LUST Fund").

Congress confirmed that federally owned sites were to be treated like any other, except that the Superfund itself was not to be used to clean them up. The Department of Defense was directed to set up its own internal fund, to be financed with otherwise appropriated funds and recoveries from responsible parties.

Other questions of scope were addressed but not resolved. EPA was directed to study the problem of lead-contaminated soil, but to limit its cleanup of pilot programs in three metropolitan areas. High-volume inorganic wastes from mining, power plants, and cement kilns were also to be studied. Sites where such wastes were found were to be evaluated solely on the basis of separately listed toxic or hazardous constituents of such waste.

Congress has been marking points on both sides of the boundary, rather than drawing sharp lines, but Superfund remains a program primarily to clean up waste

⁵See generally Novick, What Is Wrong With Superfund?, *Envtl. Forum*, Nov. 1983, at 6.

⁶See CERCLA § 107(1), 42 U.S.C.A. § 9607(1).

⁷The House Report evidenced concern about underground injection and land disposal of hazardous wastes as these processes impacted upon the quality of groundwater. H.R. Rep. No. 198, Part 1, 98th Cong., 2d Sess. 28–36, *reprinted in* United States Code Congressional and Administrative News pp 5576, 5587–94. In part to meet this concern, § 704 of the Act created a National Groundwater Commission to assist and coordinate federal, state, and local efforts to protect and preserve groundwater quality. H. Supp. Rep. No. 198, Part II, 98th Cong., 2d Sess. 129, *reprinted in* United States Code Congressional and Administrative News pp 5636, 5700.

⁸HSWA, Pub. L. No. 98-616, tit. VI, § 601, 98 Stat. 3222, 3277–88 (codified as RCRA Subtitle I, at 42 U.S.C.A. § 6991).

dumps. It is also increasingly clearly a groundwater protection program.

§ 14:10 Superfund revised—Goals

At active hazardous waste management sites, owners and operators were being told to restore groundwater to background or drinking water quality levels; EPA had established no alternate concentration levels for any facility that might have softened these requirements.

At Superfund cleanup sites, the goals of cleanup were less clearly defined. Superfund had grown out of the emergency response campaign,¹ and the statute could be read to allow EPA to choose remedies on a case-by-case basis.² The Agency read the statute as authorizing and perhaps requiring that remedial responses—long-term soil and groundwater cleanup—be carried only to the point of cost-effectiveness at each site.³ Superfund cleanups accordingly were designed—or negotiated with defendants—in an *ad hoc* manner, with an intuitive approach to the cleanup which could or should be accomplished. The approach was not unlike the early abatement conferences under the air and water pollution legislation of the 1960s. Confusion over the *ad hoc* goals was encapsulated in the frequently asked question, “How clean is clean?”

The difference between its rigid approach to active waste management sites and the *ad hoc* cleanup at abandoned sites became acute when EPA began to face the prospect that its own activities at Superfund sites were subject to RCRA requirements. Cleanup at the site of a storage or disposal facility would have to reach appropriate background levels for drinking water quality standards to comply with RCRA, but exceed the site-specific requirements of EPA’s Superfund cleanup policy, and therefore deplete the limited cleanup funds at a few sites.

Some environmentalists generally disapproved of EPA’s site-by-site approach to cleanup standards—quite aside from the conflict with RCRA—because the site-by-site approach exposed the agency to merciless pressure for particular cleanup measures at each step of the program. The Environmental Defense Fund (EDF) sued to overturn the Agency’s rules and EPA decided to settle the suit by accepting a version of EDF’s proposal. EPA tightened its Superfund policy to more closely approximate RCRA. Superfund cleanup would be conducted up to the standards for environmental quality established under other statutes—which Superfund arguably allows but does not require—except where local conditions require some concession.⁴ EPA backed away from this settlement for some time, however, because of internal debates over the wisdom of accepting groundwater quality standards without much concession to cost. Additionally, the settlement was reached at a time when the Agency and the Administration were pressing for more flexibility and cost-effectiveness in the pollution control laws.

Eventually, EPA accepted necessity, and quietly adopted a policy that set groundwater quality standards as goals. Applicable standards, borrowed from other

[Section 14:10]

¹See § 14:6 note 7 and accompanying text (imminent hazard lawsuit campaign).

²CERCLA §§ 104, 106, 42 U.S.C.A. §§ 9604, 9606.

³CERCLA § 105(a)(8)(A), 42 U.S.C.A. § 9605(a)(8)(A) (criteria for determining priorities of remedial cleanups); see, e.g., *Colorado v. Idarado Mining Co.*, 707 F. Supp. 1227, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20794 (D. Colo. 1989), rev’d, 916 F.2d 1486 (10th Cir. 1990), analyzed in Bucholz, “Can a Jurisdictional Showdown Under Superfund Be Avoided?” 19 Env’tl. L. Rep. 10327, 10331 (Env’tl. L. Inst.) (Aug. 1989).

⁴See *Env’tl. Def. Fund v. EPA*, No. 82-2234 (D.C. Cir. 1982); 50 Fed. Reg. 47912, 47917 (1985). For analysis of the relationship between CERCLA and RCRA, see Smith, “CERCLA Compliance with RCRA: The Labyrinth,” 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 10518 (Dec. 1988).

programs where available, were incorporated into the Superfund feasibility studies for each remedial cleanup site. The Agency later attached a policy statement to its National Contingency Plan to reflect the new approach.⁵

The SARA ratified these goals and made them obligatory: Superfund cleanup in most cases must continue until drinking water quality standards, or other “applicable” or “relevant and appropriate” environmental quality standards are met at the site. At EPA’s insistence, a procedure for setting alternate concentration limits, similar to the RCRA permit procedure, is authorized, and in narrow cases of impracticality the Agency may waive soil or groundwater standards. Once the goal is selected, of course, the cleanup remedy chosen must be cost-effective.

The contemporaneous 1986 amendments to the Safe Drinking Water Act required EPA to greatly increase the number of drinking water quality standards it sets, and as their coverage grows these standards will come to serve as the most common goals of both RCRA and Superfund cleanup.

Despite complexity and confusion, the question, “How clean is clean?” was on its way to being answered.

§ 14:11 Superfund revised—Methods

By 1986, the thresholds for response and the goals of cleanup were clear in broad outline, but the methods to attain the goals were still not visible—except that EPA now had more money than the Agency thought it could spend wisely.

The Superfund statute now pretty bluntly told EPA that the Agency was not to turn Superfund sites into new landfills, nor excavate and carry them to other landfills down the road. The Agency was first to consider treating wastes onsite, to reduce their volume, hazard, or toxicity. The prohibition of off-site land disposal for hazardous wastes would begin affecting Superfund wastes on November 8, 1988; after that time, only wastes treated to BDAT levels could be land disposed on or off site. On-site treatment presumably would have to achieve at least this performance level to allow residues to remain on site.

EPA was struggling to find other guides to standardized technology that might allow it to manage thousands of cleanup sites more easily. The Agency itself would be able to clean up only a fraction of the total, and private parties would be called on to clean up the rest. Standardized cleanup technology would certainly help this effort if it could be meshed with the environmental quality standards that had to be met at each site.

The statute for the first time in 1986 adopted some general technology-forcing provisions. EPA was encouraged to use (and presumably to require) treatment methods that had not yet been demonstrated. A substantial system of research centers was established to search for better technology.

The statute attempted to smooth procedural obstacles that had turned up in management of the program. Private parties were given some inducements to cooperate in cleanup, including joint-tortfeasor releases that would allow them to settle all of their liability in a single agreement. The states remained junior partners, although many now had the funds and expertise to take over Superfund administration as they had other environmental protection programs. Congress was not yet ready to relinquish federal site-by-site control, however.

EPA, the states, and responsible parties therefore remained yoked together in an uncomfortable harness.

§ 14:12 Summary: The purpose of hazardous waste law

⁵See 50 Fed. Reg. 47912, 47946 (1985).

The complex history described above has produced an intricate body of law, about which it is difficult to generalize. Taking the statutes together, however, and looking with half-closed eyes so that only general features are visible, a few principles are plain.

One overall purpose of the statutes, perhaps the dominant purpose, is to end significant pollution of soil and groundwater by hazardous wastes and the other pollutants designated for control. A system of incentives and penalties in RCRA aims to discourage the production of waste. RCRA and the Safe Drinking Water Act aim at ending the disposal of untreated wastes on land, and on reducing the releases from remaining land disposal facilities to insignificant levels. RCRA and CERCLA aim at cleaning soil and groundwater polluted by wastes up to levels of insignificance.

The principal methods for achieving these goals are treatment technologies for reducing or destroying the hazards posed by wastes. RCRA and CERCLA have the outlines of a technology-based system of performance standards for such technology, and there are hints that EPA will force the development of this technology along the road toward the statutory goal of ending all significant pollution of soil and groundwater.

The hazardous waste laws, despite their different origins and development, therefore are slowly growing to resemble the older air and water pollution control programs.

II. WASTE MANAGEMENT

§ 14:13 Introduction

The principal statute under which hazardous waste disposal is regulated is technically an amendment to the Solid Waste Disposal Act. As we have seen, this was something of an afterthought to a more pressing concern about municipal trash disposal.¹ The law has never lost the mark of this origin, and is commonly referred to now as the “Resource Conservation and Recovery Act,” or “RCRA.”²

Authorization for RCRA appropriations expired in September 1988, although interim funding has been included in EPA appropriations bills.³ Senator Baucus introduced a reauthorization bill in 1988 that established a framework for reauthorization discussions.⁴ The bill called for amending RCRA to require EPA to regulate air emissions, incinerator ash waste,⁵ and medical waste disposal at municipal waste landfills.⁶ Congress has continued to appropriate funds annually to EPA to implement RCRA rather than amending RCRA’s appropriations provisions.

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¹See § 14:4.

²See EPA, *The Nation’s Hazardous Waste Program at a Crossroads; the RCRA Implementation Study*, 55 Fed. Reg. 33959 (Aug. 20, 1990).

³See Pub. L. No. 100-404, 102 Stat. 1014 (1988).

⁴S. 2773, 100th Cong., 2d Sess. (1988); 134 Cong. Rec. S. 12171, S. 12172 (daily ed. Sept. 9, 1988); and S. 1113, 101 Cong., 2d Sess. (1989); 135 Cong. Rec. S. 6021, S. 6022 (daily ed. June 1, 1989). See 18 *Envtl. L. Rep. (Envtl. L. Inst.)* 10496–97.

⁵Regulations affecting the incineration of nearly two million tons of hazardous waste in industrial boilers and furnaces became effective August 21, 1991. The rules close a loophole that allowed many incinerators to claim they were recycling hazardous waste by burning it. 56 Fed. Reg. 7134 (Feb. 21, 1991); 56 Fed. Reg. 42504 (Aug. 27, 1991); 56 Fed. Reg. 43874 (Sept. 5, 1991).

⁶To a certain extent, OSHA, 29 U.S.C. §§ 651 et seq., regulates the handling of medical wastes. See 29 C.F.R. § 1910.1030. In addition, several states have imposed their own requirements concerning medical waste. A detailed discussion of these requirements can be found in Shumaker, *Infectious Waste: A Guide to State Regulation and a Cry for Federal Intervention*, 66 *Notre Dame L. Rev.* 555 (1990).

Under RCRA, EPA was required to treat “hazardous waste” as a subset of all wastes,⁷ but the Agency probably had the authority to focus on the worst problems first. Instead, EPA defined “hazardous wastes” very broadly, as the class of all discarded materials with hazardous *qualities*.⁸ This broad definition made some sense in the context of the statute’s purpose, which was to limit environmental problems by reducing wastes at their source. The production of hazardous wastes, like other wastes, was to be discouraged, and a broad definition of “hazardous waste” would help to carry out this purpose.

The program for waste reduction is a system of incentives. Tight controls on waste disposal facilities were intended only in part as direct protection measures; they also raised the cost and difficulty of waste disposal, and so encouraged waste generators to find alternatives to disposal.⁹ Essentially everyone generates “waste,” and an incentive program is the only acceptable way of regulating such a wide range of behavior without command and control regulations for the whole economy. The definitions of “waste” and “hazardous waste” are drawn broadly, to bring the incentives to bear on as much of the economy as possible.

Waste disposal facilities, however, are a different matter. These are pollution sources and are usually required to have permits, and to meet detailed standards of performance.¹⁰ A characteristic problem of the hazardous waste program has been to link the two parts of this program—the system of broad incentives to discourage waste, and the narrow system of permits for disposal facilities. Congress’ solution was to prohibit disposal of all “hazardous wastes” except in permitted facilities.¹¹ Because of the broad coverage of the incentive program, however, this meant putting an unusually large class of facilities and potential pollutants under regulation. Facilities were regulated, not necessarily because of any local environmental problem, but to stop the flow of wastes.

In the following section, we will summarize the rules that encourage resource conservation and the regulation of trash disposal. It will then be appropriate to consider the regulation of hazardous waste facilities and underground tanks, and then, finally, the cleanup of spills.

§ 14:14 Resource conservation and recovery

Federally regulated waste is called “solid waste,” somewhat misleadingly, since the term includes liquids and contained gases. The term is one of the reminders of the program’s origin.¹ RCRA applies only to *waste*, not products, unlike some other environmental laws.²

Solid waste programs fall roughly into two categories: First, there is a set of general incentives and disincentives to stimulate more efficient use of energy and natural resources; second, there is a set of criteria for state plans to regulate land disposal of solid waste. We will briefly summarize these provisions of the law.

⁷See RCRA §§ 1002(b), 1004(5), 42 U.S.C.A. §§ 6901(b), 6903(5).

⁸See *generally* 40 C.F.R. § 261; § 14:23.

⁹See, e.g., RCRA § 1002(b)(7), 42 U.S.C.A. § 6901(b)(7) (reliance on land disposal should be reduced or eliminated); RCRA § 3002(b), 42 U.S.C.A. § 6922(b) (generators must certify that they had no practicable alternative before disposing of hazardous waste).

¹⁰See § 14:22.

¹¹See RCRA § 3005(a), 42 U.S.C.A. § 6925(a).

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¹See RCRA § 1004(27), 42 U.S.C.A. § 6903(27), 40 C.F.R. § 261.2.

²RCRA § 1004(27), 42 U.S.C.A. § 6903(27); RCRA § 3001, 42 U.S.C.A. § 6921; 40 C.F.R. Part 60, app. I.

§ 14:15 Resource conservation and recovery—Incentives for efficient resource use

The principal incentive for resource conservation is contained in the regulatory programs themselves; these programs narrow the neck into which wastes flow. The regulatory programs are discussed more fully in the following sections.¹

A second incentive is the imposition of liability on waste generators in some circumstances. Generators of wastes that fall into the broadly defined category of hazardous substances may be liable for cleaning up disposal sites.² The liability is not limited to clearly hazardous wastes, but covers many ordinary forms of refuse found at disposal sites which may contaminate groundwater.³ This liability can be substantial; since liability of the responsible parties is joint and several, there is at least a theoretical possibility that a waste generator will pay to clean up not only his own wastes, but those of many other generators.⁴

The third incentive is the feedstock tax imposed on petrochemicals.⁵ This tax goes into a revolving fund to finance federal cleanups of abandoned waste dumps; it is modest, but much resented. Petrochemicals were singled out because many of the more toxic wastes begin life as petrochemicals. The tax was also imposed at a time of oil shortages; it was thought that oil conservation would be a side benefit. The authority for these taxes expired in 1995, and they have not been reauthorized.⁶

A fourth possible incentive, a tax on wastes, was defeated in 1986.⁷

Fifth, there is a series of consciousness-raising reporting requirements which act as mild incentives for hazardous waste generators. Generators of hazardous wastes are required to review their operations annually and to report on measures for reducing hazardous waste volume or toxicity.⁸ They must have waste reduction plans and manifests which accompany wastes for disposal and must contain the generator's certification that other means of reducing the volume of waste or avoiding disposal have been reviewed.⁹ Owners and operators of treatment, storage, and disposal (TSD) facilities that handle waste generated on the premises are required to make the same certification on an annual basis.¹⁰ EPA has issued guidance to aid these individuals in complying with these provisions.¹¹ In addition, the Pollution Prevention Act of 1990 mandates the inclusion of specific information concerning source reduction and recycling for every toxic chemical required to be reported in

[Section 14:15]

¹See §§ 14:22, 14:85.

²See CERCLA § 107, 42 U.S.C.A. § 9607; *see also* § 14:111. *See, e.g.,* Am. Iron & Steel Inst. v. EPA, 886 F.2d 390, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20027 (D.C. Cir. 1989).

³See *United States v. Wade*, 546 F. Supp. 785, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20051 (E.D. Pa. 1982), app. dismissed, 713 F.2d 49, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20815 (3d Cir. 1983), ruling on liability and causation, 577 F. Supp. 1346, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20096 (E.D. Pa. 1983); CERCLA § 101(14), 42 U.S.C.A. § 9601(14).

⁴See § 14:128.

⁵See Internal Revenue Code of 1986, 26 U.S.C.A. § 4611.

⁶United States Government Accountability Office, *Superfund: Funding and Reported Costs of Enforcement and Administrative Activities* 8 (2008).

⁷SARA, Pub. L. No. 99-499, 100 Stat. 1613 (1986) rejected the "waste-end" tax that had been proposed.

⁸RCRA § 3002(a)(6), 42 U.S.C.A. § 6922(a)(6).

⁹RCRA § 3002(b), 42 U.S.C.A. § 6922(b).

¹⁰RCRA § 3005(h), 42 U.S.C.A. § 6925(h).

¹¹58 Fed. Reg. 31114 (May 28, 1993).

the annual toxic chemical release form filed by a facility under Title III of SARA.¹²

Sixth, one statutory objective of RCRA was to encourage the reclamation of solid waste.¹³ For example, § 6922(b), entitled “waste minimization,” requires a generator to certify that it has a program to reduce the volume, quantity, or toxicity of its hazardous waste and that the proposed treatment, storage, or disposal minimizes the present and future threat to human health and the environment. Also, the Act imposes the obligation to buy recycled products on “procuring” agencies using federal funds.¹⁴

Finally, there is a series of miscellaneous research projects, demonstrations and other incentives.¹⁵

§ 14:16 Resource conservation and recovery—State solid waste management plans

The Clean Water Act, the Safe Drinking Water Act, and RCRA encourage the states to establish plans for waste disposal.¹ RCRA authorizes two sets of plans. The first is intended for the management of all solid waste disposal within the state’s jurisdiction.² The second is intended solely for the management of hazardous wastes, which are to be diverted from the common disposal system into specially-licensed facilities.³ These two systems of state plans remain connected. Small-quantity generators of hazardous waste, for instance, may choose between state-licensed landfills and incinerators, on the one hand, or RCRA-licensed landfills and incinerators; EPA has issued the final rule establishing the criteria for municipal landfills. Different requirements are applicable to new and existing units.⁴ The Clean Water

¹²Pollution Prevention Act of 1990, Pub. L. No. 101-508, 104 Stat. 1388–321, § 6607, 42 U.S.C.A. § 13106.

¹³See H.R. Rep. No. 1491, 94th Cong., 2d Sess. 2 (1976); United States Code Congressional and Administrative News pp 6238, 6239; *see also* RCRA § 6901(a)(1)-(4), (c)-(d), and § 6902(a)(1), (10)-(11).

¹⁴National Recycling Coalition, Inc. v. Reilly, 884 F.2d 1431, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20427 (D.C. Cir. 1989).

¹⁵RCRA was enacted in 1976 and amended in 1980, the year of the Synfuels Corporation and the Moral Equivalent of War; the Act contains a number of resource conservation programs of varying importance. RCRA provides that lubricating oil cans bear a label encouraging recycling, RCRA § 2005, 42 U.S.C.A. § 6914a; that EPA set up teams of experts to advise other agencies and governments on conserving resources, RCRA §§ 2002 to 2003, 42 U.S.C.A. §§ 6912 to 6913; grants for discarded tire disposal, RCRA § 2004, 42 U.S.C.A. § 6914; an Interagency Coordinating Committee with grand purposes and a charter to oversee the turf battles among EPA, the Department of Energy, and the Department of Commerce, RCRA § 2001(b), 42 U.S.C.A. § 6911(b); a string of programs for the Commerce Department designed to establish standards for recycled materials, and to help establish markets for these materials, RCRA §§ 5001 to 5006, 42 U.S.C.A. §§ 6951 to 6956; an elaborately detailed research and demonstration program to develop resource recycling, energy recovery, and other such technology in which EPA was authorized to provide grants and enter into contracts for demonstration facilities, RCRA §§ 8001 to 8007, 42 U.S.C.A. §§ 6981 to 6987. Notably missing is any mention of disposable containers. RCRA § 8002, 42 U.S.C.A. § 6982, authorizes special studies of multiple-unit apartment and office buildings; mining waste; sludge, tires, airport landfills; oil drilling fluids, etc. There is an unexplained announcement that resource recovery facilities shall be limited in size to the reasonably foreseeable needs of the area; this is apparently intended to prevent trash-to-fuel plants from competing unfairly with other recycling businesses; *see* RCRA § 4003(d), 42 U.S.C.A. § 6943(d). The system of taxes and incentives, in short, looks like a miniature unreformed tax code.

[Section 14:16]

¹See § 14:3.

²RCRA Subtitle D, 42 U.S.C.A. §§ 6941 to 6949a.

³RCRA Subtitle C, 42 U.S.C.A. §§ 6921 to 6939g.

⁴56 Fed. Reg. 50978 (Oct. 9, 1991). This rule also fulfills a portion of EPA’s responsibilities under the Clean Water Act to regulate the use and disposal of sewage sludge.

Act⁵ and the Safe Drinking Water Act⁶ require state permit systems for disposal wells.

While the states may have to integrate all of these plans for management, one must begin by separating them into at least two large categories: Waste disposal generally, and hazardous waste management. In the following subsections we will briefly review the general waste disposal plans, which are loosely connected to the system of incentives for waste reduction. In the next sections, we will describe the permitting system for hazardous waste facilities, including hazardous waste disposal wells.

§ 14:17 Resource conservation and recovery—State solid waste management plans—Dumps and landfills

Section 208 of the Clean Water Act and RCRA together provide a complex system for managing solid wastes. EPA is required to establish criteria for disposal technology,¹ for groundwater quality standards,² and for all the complex technical issues that affect a state plan to protect groundwater from waste disposal: “geologic, hydrologic, climatic, and other circumstances under which different solid waste practices are required . . . , methods, techniques and practices, and location of facilities.”³

The states may establish a regulatory program governing all waste disposal which, among other things, requires that “open dumps” either be closed or upgraded to become sanitary landfills.⁴ These plans are to be submitted to EPA; if approved, EPA is authorized to supply financial assistance to the states in implementing their plans. Finally, when a state has an approved plan, EPA is authorized to provide added financial assistance for resource conservation planning and demonstration projects.⁵ Landfill plans are to be included in a wider planning process for all sources of water pollution, for which EPA provides assistance under the Clean Water Act’s § 208.⁶

This state planning program has both benefitted and suffered from benign neglect. Little money was ever appropriated, and EPA never paid much attention to state planning under either the Clean Water Act or RCRA; the whole process is only weakly enforceable through the granting or withholding of financial assistance;⁷ and it is further crippled by the separation of water pollution and solid waste regulation

These regulations were challenged in *Sierra Club v. EPA*, 992 F.2d 337, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 20827 (D.C. Cir. 1993), because they failed to impose numeric limits on toxics in sewage sludge that was to be co-disposed with municipal solid waste. The court accepted EPA’s position that numeric limits would be infeasible. The court, however, vacated the portion of the regulations exempting small landfills from groundwater monitoring requirements, and remanded this provision to EPA for reconsideration.

⁵See Clean Water Act § 402(b)(1)(D), 33 U.S.C.A. § 1342(b)(1)(D); § 13:31. Note that state plans must include authority to issue well permits, but EPA itself does not have authority to issue such permits in most situations. See § 14:3.

⁶See SDWA §§ 1421 to 1424, 42 U.S.C.A. §§ 300h to 300h-3; § 14:70.

[Section 14:17]

¹RCRA § 4002(c), 42 U.S.C.A. § 6942(c).

²Clean Water Act § 304(a)(1)-(2), 33 U.S.C.A. § 1314(a)(1)-(2).

³RCRA § 4002(c)(1), (3)-(4), 42 U.S.C.A. § 6942(c)(1), (3)-(4).

⁴RCRA §§ 4003(a), 4005, 42 U.S.C.A. §§ 6943(a), 6945.

⁵RCRA §§ 4007 to 4008, 42 U.S.C.A. §§ 6947 to 6948.

⁶Clean Water Act §§ 208, 303(e), 33 U.S.C.A. §§ 1318, 1313(e).

⁷See *Natural Resources Defense Council v. Costle*, 564 F.2d 573, 580, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20702, 20705 (D.C. Cir. 1977).

into different organizations within EPA.

The only mildly vigorous portion of this program at the federal level is the narrow effort for closing or upgrading dumps; even this is largely limited to the provision that each state must submit to EPA a list, to be published in the *Federal Register*, of open dumps. Since such dumps are liable to citizen action, the act of publication is sometimes an incentive for compliance.⁸

The states may have pursued these concerns more vigorously than the federal government; however, trash disposal is primarily a municipal responsibility. In our limited experience, mayors have had little success in interesting their state governments in resolving such difficult and expensive problems, which seem to defy any general solution. Landfills remain largely a problem of the towns and counties, which seem to be managing reasonably well.

However, an area of interest is the import of out-of-state wastes. In several cases, state restrictions on imports of wastes, ranging from total bans to higher disposal fees, have been held to impose unconstitutional burdens on interstate commerce.⁹

§ 14:18 Resource conservation and recovery—State solid waste management plans—Injection wells

Federal law requires states who administer Clean Water Act programs to impose discharge permits on all disposal wells;¹ but the federal government itself lacks authority under the Clean Water Act to issue permits except where the wells affect surface water.² The Safe Drinking Water Act, however, applies federal design standards to all injection wells which may affect “aquifers” that are capable of serving as public drinking water supplies.

There is not necessarily much difference between an injection well and a landfill. Each is a hole in the ground; a well is deeper than it is wide.³ Nonhazardous wastes, especially liquids, may be disposed of in any of the various kinds of disposal facilities; the states may accordingly channel wastes to the most suitable locations, but the vagaries of federal law, which differ from one statute to another, may sometimes hinder the state programs.

§ 14:19 Solid waste and hazardous waste

⁸See RCRA § 4005(a)-(b), 42 U.S.C.A. § 6945(a)-(b).

⁹See, e.g., *Chemical Waste Management, Inc. v. Hunt*, 504 U.S. 334, 112 S. Ct. 2009, 119 L. Ed. 2d 121, 34 Env't. Rep. Cas. (BNA) 1721, 22 Env'tl. L. Rep. 20909 (1992) (U.S. Supreme Court ruled that an Alabama statute that set a higher fee for disposal of out-of-state waste than for in-state waste is unconstitutional.); *National Solid Wastes Mgmt. Assoc. v. Alabama Dep't of Env'tl. Mgmt.*, 910 F.2d 713 (11th Cir. 1990), cert. denied, 33 ERC (BNA) 1392 (1991). But see *Kleenwell Biohazard Waste & Gen. Ecology Consultants, Inc. v. Nelson*, 48 F.3d 391, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 20867 (9th Cir. 1995), cert. denied, 115 S. Ct. 2580 (1995) (upholding certification requirement because it promotes safety and does not unnecessarily burden interstate commerce). More recently, the Supreme Court, resolving a split between the Second and Sixth Circuits, held that municipal ordinances that required wastes to be processed at local government-owned disposal facilities are constitutional. *United Haulers Ass'n, Inc. v. Oneida-Herkimer Solid Waste Management Authority*, 550 U.S. 330, 127 S. Ct. 1786, 167 L. Ed. 2d 655, 64 Env't. Rep. Cas. (BNA) 1129, 41 A.L.R. Fed. 2d 601 (2007); see also *Sandlands C & D LLC v. County of Horry*, 737 F.3d 45, 77 Env't. Rep. Cas. (BNA) 1629 (4th Cir. 2013) (relying on the *United Haulers* case to hold that county ordinance requiring waste within county to be disposed of at county's landfills did not violate dormant Commerce Clause).

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¹See Clean Water Act § 402(b)(1)(D), 33 U.S.C.A. § 1342(b)(1)(D).

²See § 14:3.

³See 40 C.F.R. § 144.3 (definition of “well” in injection well regulations).

RCRA is technically a set of amendments to the Solid Waste Act of 1965,¹ and one of the consequences of this is the somewhat misleading term used for its subject matter, “solid waste.” Jurisdiction under RCRA is limited to solid waste, but the term is defined in the statute to include liquid and contained gaseous wastes.²

There are, in fact, two definitions of solid waste in the RCRA program; a definition which applies to ordinary solid waste, whose disposal is regulated under Subtitle D of RCRA, discussed in the preceding sections, and hazardous solid wastes, whose management is regulated under Subtitle C, discussed in the following sections.

§ 14:20 Solid waste and hazardous waste—Solid waste

Solid waste, for Subtitle D purposes, is any discarded material, including household wastes, garbage, commercial wastes, refuse from construction, industrial wastes, and sludges from waste treatment plants and pollution control facilities.¹ The broad reach of this definition has not been tested, because the regulatory program principally concerns itself with disposal facilities, where the presence of a material makes it a waste by definition; but there has been some question when a waste has been recycled.²

Excluded from the definition of solid waste are domestic sewage, irrigation return flows, discharges permitted under § 402 of the Clean Water Act (most industrial and municipal point discharges, but dredged and fill material remain solid wastes) and radioactive wastes under the jurisdiction of the Department of Energy or the Nuclear Regulatory Commission.³ Oil and gas⁴ and geothermal waste are also not regulated under Subtitle C.⁵

The D.C. Circuit has addressed the issue of whether recycled material constitutes discarded waste. Specifically, in *American Mining Congress v. EPA* (“AMC I”), the court held that the term “discarded materials” could not include materials “destined for beneficial reuse or recycling in a continuous process by the generating industry itself” because they are not yet part of the waste disposal problem.⁶ However, the D.C. Circuit as well as other circuits have held that certain materials destined for recycling are considered “discarded” and thus are within EPA’s ambit of § 261.2.⁷ In

[Section 14:19]

¹Solid Waste Act of 1965, Pub. L. No. 89-272, tit. II, 79 Stat. 997, codified as extensively amended at 42 U.S.C.A. §§ 6901 to 6987.

²RCRA § 1004(27), 42 U.S.C.A. § 6903(27).

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¹RCRA § 1004(27), 42 U.S.C.A. § 6903(27). See Garlick, “EPA’s Definition of Solid Waste: Making Distinctions Between Shades of Grey,” 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 10349 (Sept. 1987).

²See, e.g., *U.S. Brewers Ass’n v. EPA*, 600 F.2d 974, 9 Env’tl. L. Rep. (Env’tl. L. Inst.) 20395 (D.C. Cir. 1979).

³RCRA § 1004(27), 42 U.S.C.A. § 6903(27).

⁴See 53 Fed. Reg. 12162 (Apr. 13, 1988) (notice of availability of data on listing certain petroleum refinery wastes).

⁵53 Fed. Reg. 25446 (July 6, 1988).

⁶*Am. Mining Cong. v. EPA*, 824 F.2d 1177, 1186 (D.C. Cir. 1987) (“AMC I”).

⁷See, e.g., *Am. Petroleum Inst. v. EPA*, 906 F.2d 729 (D.C. Cir. 1990) (“API I”) (holding that emission control dust from steelmaking operations is a solid waste, even when it is sent to a metals reclamation facility); *Am. Mining Cong. v. EPA*, 907 F.2d 1179 (D.C. Cir. 1990) (“AMC II”) (holding that fisted wastes managed in units that are part of wastewater treatment units are discarded materials if it is unclear that the industry actually reuses the materials); *Am. Petroleum Inst. v. EPA*, 216 F.3d 50, 57-58 (D.C. Cir. 2000) (“API II”); *United States v. ILCO, Inc.*, 996 F.2d 1126, 1132 (11th Cir. 1993);

Association of Battery Recyclers, Inc. v. EPA,⁸ the D.C. Circuit reiterated the holding in *AMC I* that materials reused within an ongoing industrial process are neither disposed of or abandoned and therefore not “discarded.” In 2008, EPA finalized a rule revising the definition of solid waste to exclude “hazardous secondary materials”—materials that would be hazardous wastes if discarded—that are being “legitimately recycled by reclamation.”⁹ As a result of a petition requesting the repeal of the 2008 revisions, EPA agreed to a settlement on September 7, 2010, under which EPA committed to prepare a proposed rulemaking to address concerns raised in the petition and, ultimately, issue a final rulemaking by December 31, 2012.¹⁰ EPA did not meet that deadline, but eventually finalized a rule on December 10, 2014, addressing the concerns raised in the petition.¹¹ Among other changes, such as additional storage requirements, the final rule primarily focuses on whether recycling activities are “legitimate” and increases regulation of such activities by amending or removing portions of the 2008 exclusions.

§ 14:21 Solid waste and hazardous waste—Hazardous waste

“Hazardous” wastes are nominally a subset of all solid wastes, but EPA has separately defined “solid waste” for purposes of the hazardous waste program.¹ This is an intricate definition, more inclusive in some ways than the Subtitle D definition, but also subject to broad exemptions which do not apply to Subtitle D.

The definition begins at the same statutory starting point: Subtitle C solid wastes, like Subtitle D solid wastes, are “discarded” materials which may be solid, liquid, or contained gases.² However, for these purposes, discarded materials include those which are accidentally or unintentionally released into the environment, if they are not promptly recovered; byproduct materials which are stored for more than ninety days; materials speculatively accumulated for recycling; and certain recovered or recycled materials, including those which are used in a manner which constitutes disposal.³

The Subtitle C definition of hazardous waste is also subject to the statutory exclusions for sewage, irrigation return flows, permitted Clean Water Act § 402 point-source discharges, and otherwise regulated nuclear materials.⁴ However, EPA separately defined the exclusion for domestic sewage to include any wastes added to a sewer which delivered the wastes to a treatment plant.⁵ This definition excluded from regulation many industrial wastes disposed into sewers that EPA arguably

Owen Elec. Steel Co. of S.C. v. EPA, 37 F.3d 146, 150 (4th Cir. 1994).

⁸Association of Battery Recyclers, Inc. v. EPA, 208 F.3d 1047 (D.C. Cir. 2000).

⁹80 Fed. Reg. 1694 (Jan. 13, 2015).

¹⁰Sierra Club v. EPA, No. 09-1041 (D.C. Cir. Sept. 10, 2010).

¹¹EPA released the rule on that date in prepublication form. The final rulemaking and background information are available at EPA, Definition of Solid Waste (DSW) Rulemakings for RCRA Hazardous Waste Regulations, <http://www.epa.gov/waste/hazard/dsw/rulemaking.htm>. See also 76 Fed. Reg. 44094 (July 22, 2011) (proposed rule). The final rule is effective 180 days after publication in the Federal Register.

[Section 14:21]

¹See 40 C.F.R. § 261.2.

²RCRA § 1004(27), 42 U.S.C.A. § 6903(27).

³See 40 C.F.R. §§ 261.2(a)(2), 261.2(b). EPA includes in this definition certain “inherently waste-like materials,” notably including several toxic dioxins, which are wastes regardless of how they are managed, or whether they are discarded, unless they are excluded by EPA. 40 C.F.R. § 261.2(d).

⁴RCRA § 1004(27), 42 U.S.C.A. § 6903(27).

⁵See 40 C.F.R. § 261.4(a)(1)(ii).

had statutory authority to control.⁶

EPA also excluded “household wastes” from the definition of Subtitle C solid wastes, believing Congress did not intend to make households subject to the rules for generators of hazardous waste.⁷ Congress confirmed this interpretation of the statute, and refined EPA’s regulatory definition, in 1984.⁸

The statute contains additional exclusions from the Subtitle C definition for mining wastes. A 1980 RCRA amendment known as the Bevill-Bentsen Amendment required EPA to exclude solid waste generated from “extraction, beneficiation, and processing of ores and minerals” from regulation as hazardous waste under RCRA Subtitle C.⁹ These mining wastes became known as Bevill wastes.¹⁰ The Bentsen part of the amendment gave a similar exemption to oil, gas, and geothermal production wastes, becoming known as Bentsen wastes.¹¹ The Bevill-Bentsen Amendment also required EPA to conduct studies of these wastes to determine whether to regulate them as hazardous under RCRA Subtitle C. In 1980, EPA revised its regulations to exclude these wastes from Subtitle C hazardous waste regulation, but also expanded the mining waste exclusion to apply to solid waste from the “exploration, mining, milling, smelting and refining of ores and minerals.”¹² Based on this broad interpretation of the Bevill Amendment, EPA suspended its Subtitle C listing of six hazardous smelter wastes. In 1985, EPA, under a court order, issued a proposed reinterpretation of the Bevill-Bentsen Amendment’s mining waste exclusion. EPA proposed to narrow the scope of the exclusion to certain high-volume, low-hazard wastes and to relist the six smelting wastes under Subtitle C. A year later, EPA withdrew its proposal based on difficulties in applying the high-volume, low-hazard standard. In 1988, EPA’s 1986 withdrawal of its 1985 proposed interpretation was held to be arbitrary and capricious.¹³ EPA’s actions were held to be illegal because the 1986 withdrawal reaffirmed the overly broad 1980 interpretation by default and effectively renewed the statutory review period. The amendment and its legislative history suggest that Congress intended the mining waste exclusion to apply only to wastes generated in large volumes. The court held that EPA’s failure to quantify the parameters of the high-volume, low-hazard standard in its 1985 proposal does not justify withdrawal of the proposal to list six hazardous smelter wastes that do not qualify as special wastes. The court ordered EPA to relist the six hazardous smelting wastes and to determine the applicability of the Bevill Amendment to large-volume processing wastes.¹⁴ In 1989, EPA was required to include

⁶EPA was directed to carry out a study of exclusion of wastes disposed into sewage systems, and determine whether such disposal needs added regulation under RCRA or the Clean Water Act. The study was to be published in the spring of 1986, and the regulation, if any, published eighteen months later. See RCRA § 3018, 42 U.S.C.A. § 6939. The regulations continue to exclude “[a]ny mixture of domestic sewage and other wastes that passes through a sewer system to a publicly-owned treatment works for treatment” from the definition of solid waste. 40 C.F.R. § 261.4(a)(1)(ii).

⁷See 40 C.F.R. § 261.4. For a discussion of the scope of the exclusion, see *Comite pro Rescate de la Salud v. Puerto Rico Aqueduct & Sewer Auth.*, 888 F.2d 180, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20211 (1st Cir. 1989), cert. denied, 494 U.S. 1029 (1990).

⁸See RCRA § 3001(i), 42 U.S.C.A. § 6921(i).

⁹RCRA §§ 3001(b)(2)(A), (C), 8002(m), 42 U.S.C.A. §§ 6921(b)(2)(A), (C), 6982(m).

¹⁰Bevill wastes, however, are not excluded from regulation under CERCLA. *Louisiana Pac. Corp. v. ASARCO, Inc.*, 24 F.3d 1565, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20992 (9th Cir. 1994).

¹¹RCRA § 3001(b)(2)(C), 42 U.S.C.A. § 6921(b)(2)(C) (1982).

¹²53 Fed. Reg. 25446 (July 6, 1988) (Bentsen waste determination).

¹³*Env’tl. Def. Fund v. EPA*, 852 F.2d 1316, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 21169 (D.C. Cir. 1988).

¹⁴See *Env’tl. Def. Fund v. EPA*, 852 F.2d 1316, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 21178 (D.C. Cir. 1988). EPA relisted the wastes at 53 Fed. Reg. 35412 (Sept. 13, 1988).

these wastes under § 3004(u) of RCRA requiring corrective action.¹⁵ On September 1, 1989, EPA narrowed the Bevill exclusion to five mineral processing wastes and allowed twenty additional wastes a “conditional exclusion” until further studies could be completed.¹⁶ On September 25, 1989, EPA proposed to permanently remove seven additional wastes from the exclusion making them subject to regulation as hazardous wastes.¹⁷ But on January 17, 1990, in the final Rule, only five of the seven were removed.¹⁸ According to a rule signed by the EPA on May 20, 1991, the remaining twenty will continue to be exempt from regulation under RCRA.¹⁹ Since that time, however, EPA has contemplated regulating certain Bevill wastes.²⁰

EPA is directed to study—and must exclude from its regulations during the study—wastes from power production, oil and gas drilling, and cement kilns; EPA considers these solid wastes, but excludes them from the definition of “hazardous” wastes.²¹ Used oil destined for recycling must be listed as a hazardous waste.²²

III. THE REGULATION OF HAZARDOUS WASTES

§ 14:22 Designation of hazardous wastes

“Hazardous waste” is a relatively new idea in federal law; as we have seen, it made its first distinctive appearance in the Clean Water Act Amendments of 1972, which required the states to make plans for regulating land disposal of “pollutants,” as well as other wastes.¹ Early laws were literally stop-gaps to check the escape of pollutants from the regulations governing their release into air and water.² When Congress finally set up an enforceable federal program for regulating hazardous wastes, it was attached to a bill regulating municipal dumps. Hazardous wastes are therefore a subset of “solid wastes,” a common euphemism for trash or garbage, but

¹⁵Am. Iron & Steel Inst. v. EPA, 886 F.2d 390, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20027 (D.C. Cir. 1989).

¹⁶54 Fed. Reg. 36592 (Sept. 1, 1989).

¹⁷54 Fed. Reg. 39298 (Sept. 25, 1989); *see also* EPA, Report to Congress on Special Wastes from Mineral Processing, 55 Fed. Reg. 32135 (Aug. 7, 1990).

¹⁸55 Fed. Reg. 2322 (Jan. 23, 1990).

¹⁹56 Fed. Reg. 27300 (June 13, 1991).

²⁰In 1993 and 2000, EPA concluded that regulation of certain Bevill wastes was not warranted, but decided to issue minimum national standards for certain other Bevill wastes under Subtitle D of RCRA. 58 Fed. Reg. 42466 (Aug. 9, 1993); 65 Fed. Reg. 32214 (May 22, 2000). EPA did not immediately proceed to formulate those standards. In 2010, EPA proposed to regulate coal combustion residuals (*e.g.*, coal ash) with two different proposals: (1) reverse the Bevill determinations to regulate coal combustion residuals under RCRA Subtitle C in certain situations; or (2) leave the Bevill determinations in place, but regulate coal combustion residuals under Subtitle D by issuing national minimum criteria. 75 Fed. Reg. 24148 (June 21, 2010). In late December 2014, EPA elected the second option. On July 26, 2016, the EPA Administrator signed a direct final rule and a companion proposal to extend for certain inactive coal combustion residuals (CCR) surface impoundments the compliance deadlines established by the regulations for the disposal of CCR under subtitle D of RCRA. The rule became effective on October 19, 2016. *See* <http://www2.epa.gov/coalash/coal-ash-rule>. *See also* 40 C.F.R. Pts. 257, 261.

²¹*See* RCRA § 3001(b)(3)(A); 42 U.S.C.A. § 6921(b)(3)(A); 40 C.F.R. §§ 261.4(b)(5), 261.4(b)(8). *But see* 40 C.F.R. § 261.4(a)(5) (*in situ* wastes excluded from definition of solid waste).

²²Hazardous Waste Treatment Council v. EPA, 861 F.2d 270, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20059 (D.C. Cir. 1988).

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¹Clean Water Act §§ 208(b)(2)(J) to 208(b)(2)(K), 33 U.S.C.A. §§ 1288(b)(2)(J) to 1288(b)(2)(K).

²Clean Water Act §§ 208(b)(2)(J) to 208(b)(2)(K), 33 U.S.C.A. §§ 1288(b)(2)(J) to 1288(b)(2)(K); SDWA, Part C, 42 U.S.C.A. §§ 300h to 300h-4; *see* § 14:1.

the term has been expanded to include any discarded solid, liquid, or contained gas.³ The definition of “solid waste” is discussed in more detail in the preceding section.

A “hazardous” solid waste is one which, because of its quantity or characteristics, may pose a substantial threat when improperly managed.⁴ This, of course, omits nothing but the wind. The history sketched in preceding sections suggests that hazardous wastes are simply pollutants which have been contained and which must be disposed of, and the language of RCRA would have allowed EPA to designate hazardous wastes in the same manner that it designated air and water pollutants, by choosing first the pollutants which already posed the most serious risks in the environment.⁵

However, EPA delayed implementing RCRA until after the firestorms at abandoned waste dumps had been ignited; it was then too late to regulate one pollutant at a time on the basis of actual environmental harm. EPA instead adopted an extraordinarily complex scheme which sought to include all wastes with hazardous characteristics all at once, in a vast regulatory program.⁶ While this was in accord with the effort to discourage waste production, it created an unusually difficult regulatory program.

At present, therefore, many hazardous wastes are sometimes separately designated, and many other wastes that have not been separately designated are regulated nonetheless, so long as they exhibit one of the characteristics established by EPA. The procedures for identifying wastes described by these categories, and adding or removing wastes from them, are discussed in the following subsections.

§ 14:23 Designation of hazardous wastes—Designation procedures: The threshold of regulation

Any person who generates a waste should determine whether it is hazardous.¹ The procedure for making this determination is both important and complex.² Once designated as hazardous, the waste will enter the regulatory system (unless it falls within a few enumerated exclusions), but small quantities of hazardous waste may be subject to only minimal regulation.³ A person who designates a material in his facility as a hazardous waste must send a notice to EPA or a state agency.⁴ The generator must request an identification number, which can be done by telephone in emergency situations; for example, during a spill cleanup, a person who retrieves a spilled shipment of chemicals and packages it for disposal will become a generator at the site of the spill, and should obtain an identification number.⁵ Persons may petition to add categories of wastes, or to delete categories (listing and delisting petitions), to those listed by EPA.⁶

The generator’s notice and identification number place the generator’s facility, as well as the waste itself, within the RCRA regulatory system. The generator at the

³RCRA § 1004(27), 42 U.S.C.A. § 6903(27); *see* § 14:1.

⁴*See* RCRA § 1004(5), 42 U.S.C.A. § 6903(5).

⁵RCRA § 3001, 42 U.S.C.A. § 6921.

⁶*See generally* 40 C.F.R. § 261 (including appendices).

[Section 14:23]

¹*See* 40 C.F.R. § 262.11.

²Office of Solid Waste, United States Environmental Protection Agency, RCRA Orientation Manual (1986); *see also* 40 C.F.R. § 261.2 (definition of solid waste).

³*See* 40 C.F.R. § 261.5; § 14:40.

⁴*See* RCRA § 3010, 42 U.S.C.A. § 6930; 40 C.F.R. § 262.12.

⁵*See* 40 C.F.R. § 262.12; 45 Fed. Reg. 85022 (Dec. 24, 1980).

⁶*See* 40 C.F.R. §§ 260.20 to 260.22.

facility must attach to any off-site shipment of the hazardous waste a manifest which includes the generator's identification number, identification of the waste, and the destination.⁷

§ 14:24 Designation of hazardous wastes—Categories of hazardous wastes—Listed wastes

A waste is “hazardous” if it falls into one of two categories; if it is a waste EPA has listed as hazardous or if testing proves it to have characteristics which have been defined as hazardous. Both of these categories have numerous subdivisions.

Any solid waste generated in the treatment, storage, or disposal of a listed hazardous waste is also a hazardous waste.¹

RCRA's drafters appeared to recognize that “hazardous waste” was a new form of pollution, and that new categories of description would be needed. Air and water pollutants were usually designated by working backward from their adverse effect on the environment; toxic chemicals were designated by name and concentration; and other pollutants by such characteristics as pH and “oxygen demand.”² These criteria for designation developed slowly over a century or more of professional experience; hazardous waste regulation would require a similar development in a period of months.

§ 14:25 Designation of hazardous wastes—Categories of hazardous wastes—Listed wastes—Thresholds for identifying wastes

The statute analyzes the task into three steps. First, criteria are set up for triggering the process—some hazard to health or the environment must exist.¹ EPA has taken these criteria from those in the statutory definition of “hazardous waste,” which in turn are borrowed from the Clean Air Act's threshold criterion for designation of toxic air pollutants² combined with a rough paraphrase of the “imminent hazard” authority found in several statutes.³ Hazardous wastes therefore must be either “toxic” or otherwise “hazardous.”

§ 14:26 Designation of hazardous wastes—Categories of hazardous wastes—Listed wastes—Criteria for listing wastes

The second step is to establish criteria for identifying waste which may cause

⁷40 C.F.R. §§ 262.20 to 262.21.

[Section 14:24]

¹See 40 C.F.R. § 261.3(c)(2). *But see* § 14:31.

²See § 2:2.

[Section 14:25]

¹See RCRA § 3001(a), 42 U.S.C.A. § 6921(a) (“criteria for identifying the characteristics of hazardous waste”); 40 C.F.R. § 261.10 (same).

²Compare RCRA § 1004(5)(A), 42 U.S.C.A. § 6903(5)(A) with Clean Air Act § 112(a)(1), 42 U.S.C.A. § 7412(a)(1).

³Compare RCRA § 1004(5)(B), 42 U.S.C.A. § 6903(5)(B) (“substantial present or potential hazard to human health or the environment”) with, e.g., Clean Air Act § 303, 42 U.S.C.A. § 7603 (“imminent and substantial endangerment to public health or welfare”); Clean Water Act § 504(a), 33 U.S.C.A. § 1364(a) (“imminent and substantial endangerment to the health of persons or to the welfare of persons”); RCRA § 7003(a), 42 U.S.C.A. § 6973(a) (“imminent and substantial endangerment to health or the environment”).

hazards to the public health or the environment that exceed the thresholds.¹ EPA's regulations set up two distinct classes of criteria. The first are criteria EPA will use itself to "list" waste generically;² the second are criteria every generator must use to determine whether a particular batch of waste is "hazardous."³

Common to both procedures are four cardinal criteria: "ignitability," "corrosivity," "reactivity," and "toxicity."⁴ These criteria are operationally defined by testing methods and analytical procedures employed by EPA or required to be used by generators.⁵ These definitions depart somewhat from the meaning the words convey to a layman; the biggest surprise is "toxicity." This is not the toxicity of the waste itself, but the toxicity of the waste's components that might be expected to leach out of a landfill; "EP" stands for an "extraction procedure," in which the waste is dissolved in mildly acidic water. The fraction which passes through a filter is chemically tested for the presence of a few listed "toxic" chemicals in concentrations that may exceed drinking water quality standards. The actual toxicity of the waste is not determined. Only eight heavy metals and six pesticides were listed for this purpose in RCRA's first ten years, but EPA in 1986 broadened this procedure to include more toxic organic chemicals.⁶

In the Hazardous and Solid Waste Amendments of 1984 (HSWA), Congress indicated its dissatisfaction with the scope of the extraction procedure toxicity characteristic test by requiring EPA to expand the characteristics of hazardous waste and to identify additional indicators of toxicity. In March 1990, EPA revised its toxicity characteristic test, defining regulatory levels for thirty-nine organic constituents.⁷ The regulatory thresholds were derived by first identifying toxicity levels for the individual constituents. Second, EPA estimated the degree to which each constituent would be diluted and attenuated during migration from a landfill to a water source. Third, EPA calculated the concentration of a constituent in leachate. Concentration in leachate, when combined with the dilution or attenuation factor, equals the toxicity level. The leachate concentration equals the regulatory threshold. To simulate generation of leachate containing the constituents of concern, EPA developed a toxicity characteristic leaching procedure (TCLP). The TCLP is designed to mimic generation of a leachate containing toxicity characteristic constituents in a "worst-case" management situation where hazardous and municipal waste are disposed in one landfill. The TCLP test became effective in 1990 and replaced the EP test for determining toxicity under 40 C.F.R. § 261.24.⁸

Additional criteria are used by EPA to "list" categories of waste for regulation,⁹ including a reactivity test, and a definition of "acute" toxicity.¹⁰ If the waste contains one or more of the constituents listed in Appendix VIII of the regulations as "toxic," EPA will list the waste unless it passes muster under general criteria related to characteristics of the waste, the hazard the waste poses in use, and the responses

[Section 14:26]

¹See RCRA § 3001(a), 42 U.S.C.A. § 6921(a); 40 C.F.R. §§ 261.11 to 261.24.

²40 C.F.R. §§ 261.11, 261.20.

³See 40 C.F.R. §§ 261.20, 262.11.

⁴See 40 C.F.R. §§ 261.21 to 261.24.

⁵40 C.F.R. §§ 261.21 to 261.24 (and regulations referred to therein).

⁶See 40 C.F.R. § 261.24

⁷RCRA § 3001(g), 42 U.S.C.A. § 6921(g).

⁸For a contemporaneous analysis of this change, see Stever, "Recent Development Under RCRA, Toxic Substances Control Act, and in Toxic Tort Litigation," ALI-ABA Course of Study Materials: Environmental Law, Feb. 15-17, 1990, Washington, D.C. at 129-131.

⁹See 40 C.F.R. § 261.11.

¹⁰40 C.F.R. § 261.11(a)(2).

already being taken by other agencies.¹¹ Finally, the regulations reserve authority for EPA to classify wastes as hazardous by applying the general hazard criteria in the statute.¹²

§ 14:27 Designation of hazardous wastes—Categories of hazardous wastes—Listed wastes—Hazardous waste lists and identification symbols

There are two categories of lists: the first describes waste streams, from general or particular sources;¹ the second category lists particular chemical species.²

The first category of lists includes types of waste—spent solvents, wastewater treatment sludges, distillation bottoms, and the like; some are listed without regard to source,³ while others are listed if they derive from particular industrial sources.⁴ EPA has to some extent followed categories used in the statutory determination of solid waste, especially in emphasizing “sludges” from air pollution control and wastewater treatment, a focus of the statute as a whole.⁵

The second category contains chemical “products”—by which seems to be meant particular chemical species rather than the products made from them—and “intermediates” listed by generic chemical names—which are hazardous wastes when they become wastes by any means.⁶

Each of the listed chemicals and wastes is identified by the principal characteristics that make it hazardous, which are shown by six symbols called “Hazard Codes”; these are used on reports and manifest forms.⁷ Department of Transportation symbols are used in transit.

§ 14:28 Designation of hazardous wastes—Categories of hazardous wastes—Listed wastes—Listing procedures and delisting petitions

EPA’s initial regulations attempted an inclusive listing of all hazardous wastes that met the statutory criteria, and was effective on November 19, 1980.¹ It is not clear why EPA felt obliged at that time to include essentially all eligible wastes in the program at once. Multiple listing and delistings have occurred since 1990² and EPA now moves with considerable caution before adding new categories of wastes to

¹¹40 C.F.R. § 261.11(a)(3). *Env’tl. Def. Fund v. EPA*, 210 F.3d 396 (D.C. Cir. 2000) (holding that EPA’s decision not to list fourteen solvents as hazardous waste was within its authority even though constituents of the wastes were listed in Appendix VIII).

¹²RCRA § 1004(5), 42 U.S.C.A. § 6903(5); 40 C.F.R. § 261.11(b). The Agency is authorized by the statute to list “infectious” wastes as well, but it has not included this among its criteria. For a general review of the listing criteria, see Stever, *Law of Chemical Regulation and Hazardous Waste* Ch. 5.

[Section 14:27]

¹See 40 C.F.R. §§ 261.31 to 261.32.

²40 C.F.R. § 261.33.

³See 40 C.F.R. § 261.31.

⁴See 40 C.F.R. § 261.32.

⁵See RCRA § 1004(27), 42 U.S.C.A. § 6903(27); 40 C.F.R. § 261.2.

⁶See 40 C.F.R. § 261.32.

⁷40 C.F.R. § 261.30(a). The symbols are as follows: Ignitable Waste (I); Corrosive Waste (C); Reactive Waste (R); Toxicity Characteristic Waste (E); Acute Hazardous Waste (H), and Toxic Waste (T).

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¹See 45 Fed. Reg. 33084, 33119 (May 19, 1980).

²See, e.g., 55 Fed. Reg. 18496 (May 2, 1990) (designating four new to RCRA list); 55 Fed. Reg. 46354 (Nov. 2, 1990) (listing petroleum sludges); 77 Fed. Reg. 56558 (Sept. 13, 2012) (delisting a particular wastewater treatment sludge).

its hazardous listings. Congress has confirmed the agency's initial impulse toward complete coverage, however, and has required EPA to consider several large categories of waste omitted from its lists.³

The governor of any state may petition EPA to "identify" or list any waste.⁴ Any interested person may petition EPA to exclude from a listed category a waste produced at a particular generating facility.⁵ Such a petition triggers a *de novo* review of the waste, however.⁶

§ 14:29 Designation of hazardous wastes—Categories of hazardous wastes—"Characteristic" wastes

If generators find their wastes are not listed, they must still test their wastes for the four cardinal "characteristics" of hazardous waste—ignitability, reactivity, corrosivity, and toxicity.¹ EPA regulations prescribe sampling techniques and the tests to be used to measure these characteristics.² Generators must also apply their knowledge of the wastes and the processes which generated them.³

§ 14:30 Designation of hazardous wastes—Categories of hazardous wastes—Mixtures

By EPA rule, listed wastes remain regulated as hazardous wastes even if mixed with large quantities of nonhazardous wastes; this rule carries out the general policy against treating pollutants by diluting them, but there are numerous exceptions to this rule.¹ The largest exception is if the hazardous waste is hazardous solely because it exhibits characteristics that generators must test for in unlisted wastes—the four cardinal "Subpart C" characteristics—and if the *mixture* does not exhibit any of these characteristics, then the mixture is not a hazardous waste. This is a curiously permissive rule, and allows generators to discharge large quantities of otherwise regulated waste by diluting them, a practice that would not be permitted

³RCRA § 3001(e), 42 U.S.C.A. § 6921(e), added by the HSWA, requiring EPA to list, "where appropriate," chlorinated and halogenated dioxins and dibenzofurans. This section also required the EPA to make listing determinations in regards to a series of other wastes.

⁴RCRA § 3001(c), 42 U.S.C.A. § 6921(c).

⁵40 C.F.R. § 260.22. 54 Fed. Reg. 27114 (June 27, 1989) (EPA clarifying delisting rules); 53 Fed. Reg. 21639 (June 9, 1988) (notice of policy determination on the delisting model); see Florini, "EPA's Delisting Program for Hazardous Wastes: Current Limitations and Future Directions," 19 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 10558 (Dec. 1989); *Ethyl Corp. v. EPA*, 918 F.2d 225 (D.C. Cir. 1990). EPA has published a manual, entitled *Petitions to Delist Hazardous Wastes—A Guidance Document*, that describes the data and information that should be included in a delisting petition submitted pursuant to 40 C.F.R. §§ 260.20 and 260.22. The Guidance is available from the National Technical Information Service. See 58 Fed. Reg. 19250 (Apr. 13, 1993).

⁶See RCRA § 3001(f), 42 U.S.C.A. § 6921(f); Stever, *Law of Chemical Regulation and Hazardous Waste* Ch. 5.

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¹EPA's toxicity characteristic rules were upheld in all respects, except for their application to certain mineral processing and electric utility wastes, in *Edison Elec. Inst. v. EPA*, 2 F.3d 438, 23 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 21173 (D.C. Cir. Aug. 6, 1993). See also *U.S. v. WCI Steel, Inc.*, 72 F. Supp. 2d 810, 49 *Env't. Rep. Cas. (BNA)* 1685, 30 *Env'tl. L. Rep.* 20169 (N.D. Ohio 1999) (holding that corrosivity of wastewater may be determined by samples that were representative of the wastewater, even though the sampling method did not adhere to sampling methods set forth in EPA regulations).

²See, e.g., 40 C.F.R. §§ 261.21 to 261.24.

³See 40 C.F.R. § 262.11; § 14:26.

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¹RCRA § 1004(27), 42 U.S.C.A. § 6903(27); 53 Fed. Reg. 31138 (Aug. 17, 1988); 40 C.F.R. §§ 268, 261.11.

in other programs.² The exception does not apply to some acutely toxic chemicals, which are not “characteristic” wastes measured by the EP toxicity test.

The mixture rules were vacated and remanded to EPA in *Shell Oil Co. v. EPA*³ on December 6, 1991 because of a lack of notice to affected parties. The court ruled that affected industries had insufficient notice in the December 1978 proposal that EPA would regulate mixtures of hazardous and nonhazardous waste as hazardous wastes. Such notice and an opportunity to comment is required under the Administrative Procedure Act.

The court similarly found that the industries were not given proper notice of EPA’s intent to regulate as hazardous waste all solid waste generated from treating or disposing of hazardous waste. This aspect of the rule, known as the “derived-from” rule, was also remanded to EPA. Subsequently, EPA reenacted the rules based on a “good cause” exemption in the Administrative Procedure Act.⁴

Subsequently, the D.C. Circuit denied EPA’s request for clarification to determine whether the *Shell Oil* decision will apply retroactively to enforcement actions filed prior to the decision. However, on June 4, 1992, the Eighth Circuit in *United States v. Goodner Bros. Aircraft*⁵ held that the *Shell Oil* decision applies retroactively. In light of this determination, the *Goodner* court held that two defendants convicted of RCRA violations must be retried because the jury may have based its guilty verdicts on a finding that the wastes at issue were hazardous under the mixture rule. The court also ignored EPA’s argument that the convictions were based on the analogous state mixture rule, which was not implicated by the *Shell Oil* decision.⁶

§ 14:31 Designation of hazardous wastes—Categories of hazardous wastes—Exceptions and variances; Recovery of wastes

A listed waste, or a waste found to have hazardous characteristics, may still escape regulation if it falls into an exclusion or is eligible for one of the variances provided by statute or regulation.¹ The exclusions and variances fall into two broad categories—first, a series of specific exemptions based on varied policies and interests; second, exclusions and variances which encourage the recycling of hazard-

²See 40 C.F.R. § 261.3(a)(2)(iii); Stever, *Law of Chemical Regulation and Hazardous Waste* Ch 5. The dilution process is “treatment” that may require a permit, although the residue is not a hazardous waste.

³*Shell Oil Co. v. EPA*, 950 F.2d 741, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 20305 (D.C. Cir. 1991).

⁴57 Fed. Reg. 7628 (Mar. 3, 1992), rule expiration date removed, 57 Fed. Reg. 49278 (Oct. 30, 1992); see also *Mobil Oil Corp. v. EPA*, 35 F.3d 579 (D.C. Cir. 1994) (by prohibiting termination of EPA’s interim mixture and derived-from rules pending further administrative action by the Agency, Congress rendered moot a suit challenging the validity of the interim rules).

⁵*United States v. Goodner Bros. Aircraft*, 966 F.2d 380, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 21201 (8th Cir. 1992), cert. denied, 506 U.S. 1049, 113 S. Ct. 967 (1993); see also *In re Hardin County, RCRA Appeal No. (3008) 93-1* (EPA Apr. 12, 1994) (holding the mixture rule void from its effective date).

⁶See also *In re Hardin County, RCRA Appeal No. (3008) 93-1* (EPA Apr. 12, 1994) (Environmental Appeals Board did not allow EPA to enforce Ohio rule). But see *Rollins Env’tl. Serv. (NJ), Inc. v. State*, 634 A.2d 1356 (N.J. Super. Ct. App. Div. 1994) (New Jersey may enforce the mixture and derived-from rules enacted in the state); *U.S. v. Bethlehem Steel Corp.*, 38 F.3d 862, 39 Env’t. Rep. Cas. (BNA) 1449, 24 Env’tl. L. Rep. 21499 (7th Cir. 1994) (holding that in the absence of a valid mixture rule, hazardous wastewater treatment sludges that are mixed with nonhazardous wastes do not constitute hazardous waste).

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¹See generally Stever, *Law of Chemical Regulation and Hazardous Waste* Ch. 5; see also *Center for Community Action and Environmental Justice v. BNSF R. Co.*, 764 F.3d 1019, 78 Env’t. Rep. Cas. (BNA) 2085 (9th Cir. 2014) (holding that emission of particulate matter does not constitute “disposal” of solid waste under RCRA and, therefore, finding it unnecessary to decide whether diesel particulate matter is “solid waste”).

ous wastes. The first category of exemptions limits or qualifies the statute's effectiveness, while the second is important in carrying out the statute's fundamental purpose of discouraging disposal and stimulating recovery of wastes.

§ 14:32 Designation of hazardous wastes—Categories of hazardous wastes—Exceptions and variances; Recovery of wastes—Miscellaneous exclusions

The boundaries between RCRA and other statutes are marked by a series of exclusions from the definition of “hazardous waste.” Gaseous emissions to the air are not solid wastes because they are not contained,¹ and are regulated, if at all, under the Clean Air Act. Discharges authorized by some Clean Water Act permits are also excluded from the definition of solid waste, as are the discharges from oil and gas drilling operations² and irrigation return flows, whose exemption from regulation under the Clean Water Act is preserved by a similar exclusion in RCRA.³ “Source, special nuclear, or byproduct materials,” terms of art for radioactive materials regulated by the Department of Energy or the Nuclear Regulatory Commission, are also excluded.⁴ Wastes disposed of in injection wells or by ocean dumping remain hazardous waste, but by regulation, such disposal is regulated under other statutes.⁵

One of these boundaries is especially important. Industrial discharges into sewage treatment systems are regulated under the Clean Water Act, and so are excluded from the definition of “solid waste.”⁶ Since they are not wastes, these discharges are not listed hazardous wastes, and their presence in sewage sludge does not render the sludge subject to regulation, unless the sludge itself exhibits hazardous characteristics.⁷ Regulation under the Clean Water Act has moved much more slowly than under RCRA however, creating a very large loophole in the system for regulating hazardous wastes.⁸ In 1984, Congress told EPA to close the loophole by the end of 1987, by regulating under either statute as it chose.⁹ In November 1990, EPA published regulations to comply with this directive.¹⁰ The “domestic sewage” exemption was discussed in *Comite pro Rescate de la Salud v. Puerto Rico Aqueduct*

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¹See RCRA § 1004(27), 42 U.S.C.A. § 6903(27).

²This exemption applies only to wastes that are uniquely associated with primary field operations associated with oil or gas. It does not apply to wastes that are only secondarily associated with exploration, development or production, such as wastes generated by transportation or manufacturing operations. 58 Fed. Reg. 15284 (Mar. 22, 1993).

³58 Fed. Reg. 15284 (Mar. 22, 1993); 40 C.F.R. §§ 261.4(a)(2)-(b)(5); *see also* State v. PVS Chemicals, Inc., 50 F. Supp. 2d 171, 48 Env't. Rep. Cas. (BNA) 1670 (W.D. N.Y. 1998) (applying RCRA's wastewater exclusion to discharges subject to permit under the Clean Water Act to avoid duplicative regulation). RCRA also contains an anti-duplication provision which expressly excludes from regulation “any activity or substance which is subject to” the Clean Water Act and certain other statutes “except to the extent that such application (or regulation) is not inconsistent with the requirements of such Acts.” RCRA § 1006(a), 42 U.S.C. § 6905(a). *But see* Goldfarb v. Mayor and City Council of Baltimore, 791 F.3d 500, 80 Env't. Rep. Cas. (BNA) 2156 (4th Cir. 2015) (RCRA's anti-duplication provision is not jurisdictional).

⁴See RCRA § 1004(27), 42 U.S.C.A. § 6903(27); 40 C.F.R. § 261.4(a)(4). Naturally-occurring radioactive materials and isotopes made in accelerators remain under EPA's jurisdiction, as do otherwise hazardous wastes which happen also to contain “source, special nuclear or byproduct material.”

⁵See 40 C.F.R. §§ 270.60, 270.64.

⁶RCRA § 1004(27), 42 U.S.C.A. § 6903(27); 40 C.F.R. § 261.4(a)(2).

⁷See 40 C.F.R. § 261.3(a)(2).

⁸See § 14:61.

⁹See RCRA § 3018, 42 U.S.C.A. § 6939.

¹⁰EPA proposed regulations under § 4010(c) on November 23, 1988, 53 Fed. Reg. 47632. The rules

and Sewer Authority.¹¹ The First Circuit rejected the claim that untreated sanitary waste discharged from the workplace constitutes “domestic sewage” within the meaning of the statute and 40 C.F.R. § 261.4 and thus that the mixture of such waste with industrial waste constituted an exempt “mixture.” The court held that the term “domestic sewage” as used in § 1004(27) applies only to untreated sanitary waste that originates from residences, not from workplaces. The court also found that the mixture exclusion and the definition of domestic sewage provided in 40 C.F.R. § 261.4 apply only to Subtitle C, not to §§ 7002 and 7003, and that defining “domestic sewage” differently under the two portions of the statute was reasonable given their different purposes. Leaving the mixture issue to another day, the First Circuit observed that because the industrial park’s sewage has subsequently been rerouted to another POTW which receives sewage not only from the park but also from residences, the lower court will be obliged on remand to consider whether the defendants’ discharges will be exempt because their sewage now mixes with genuine, residentially-generated “domestic sewage.”

Some other exclusions express uncertainty whether some industries should be subjected to the burden of hazardous waste regulation. Some mining wastes, most of the wastes produced in electric power production, and “cement kiln dust,” which otherwise undoubtedly would meet the criteria for listing as hazardous, are excluded while EPA studies the need for regulation.¹²

In 1993, EPA promulgated a final regulatory determination that four large-volume fossil fuel combustion waste streams—fly ash, bottom ash, boiler slag and flue gas emission control waste—would not be regulated under Subtitle C of RCRA. This determination was based on the limited risk that these waste streams pose, and on the adequacy of alternative state and federal regulatory programs.¹³

Further, RCRA applies only to hazardous waste within the territorial jurisdiction of the United States.¹⁴

“Household wastes” were excluded from “hazardous waste” by regulation, and Congress has ratified EPA’s reading of the statute, with some qualifications.¹⁵ Trash from hotels and other similar wastes are excluded along with “household wastes” and incinerators or “resource recovery” facilities that handle *only* household wastes and other non-hazardous wastes excluded from regulation.¹⁶

Some other wastes are excluded for a variety of reasons, and those exclusions are scattered throughout EPA definitions of solid and hazardous waste, as well as under the heading for exclusions.¹⁷ EPA has chosen to exclude certain wastes from regulation as hazardous waste, including where it determines that such regulation is not necessary to protect human health and the environment.¹⁸ But EPA’s policy deci-

became final on July 24, 1990, 55 Fed. Reg. 30082 (July 24, 1990). See 40 C.F.R. Part 403 amendments to pretreatment standards.

¹¹Comite pro Rescate de la Salud v. Puerto Rico Aqueduct & Sewer Auth., 888 F.2d 180, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20211 (1st Cir. 1989), cert. denied, 494 U.S. 1029 (1990).

¹²RCRA § 3001(b)(3)(A)(iii), 42 U.S.C.A. § 6921(b)(3)(A)(iii). The reports were required on fairly tight schedules, RCRA § 3002, 42 U.S.C.A. § 6982.

¹³58 Fed. Reg. 42466 (Aug. 9, 1993). This determination was required by RCRA § 3001(b)(3)(C).

¹⁴Amlon Metals, Inc. v. FMC Corp., 775 F. Supp. 668, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 20235 (S.D.N.Y. 1991).

¹⁵See RCRA § 3001(i), 42 U.S.C.A. 6921(i); 40 C.F.R. § 261.4(b)(1).

¹⁶RCRA § 3001(i), 42 U.S.C.A. 6921(i); 40 C.F.R. § 261.4(b)(1). Of course, if the wastes *produced* at the incinerator have hazardous characteristics, they enter the regulatory system. The incinerator will be regulated as a generator rather than a disposal facility.

¹⁷See 40 C.F.R. § 261.3(a).

¹⁸See, e.g., Military Toxics Project v. E.P.A., 146 F.3d 948, 28 Env’tl. L. Rep. 21350 (D.C. Cir. 1998)

sions with respect to excluded wastes have not always withstood judicial scrutiny.¹⁹

§ 14:33 Designation of hazardous wastes—Categories of hazardous wastes—Exceptions and variances; Recovery of wastes—Recovery of wastes

Similarly complex exclusions apply to some wastes which are recovered for reuse. The statute encourages the recovery of waste for new uses, but discourages its casual disposal; the line between the two is both important and difficult to draw. For instance, if an oily waste is sold for dust suppression on local roads, has it been “recovered” or just disposed of in a particularly hazardous way?

EPA’s hazardous waste regulations draw this line by excluding from the definition of “solid waste,” materials that would be wastes, or in fact have become wastes, but instead of being disposed of are used as raw materials in a production process or directly as commercial products.¹ Materials reclaimed from wastes, which would otherwise be defined as wastes because they result from a waste treatment process, are similarly excluded if used as raw materials or sold as products.²

There are exclusions within the exclusions, however, for uses of some wastes which require continued regulation. Some materials recovered from wastes continue to be solid wastes if they are “used in a manner constituting disposal”; used as a fuel; reclaimed; or accumulated speculatively.³ These provisions are particularly aimed at the use of contaminated oils sprayed on roads or burned as heating fuel in home and commercial boilers.

The HSWA in 1984 somewhat dampened the earlier enthusiasm for recycling, and authorized the Agency to place less weight on recycling when designating used oil as a hazardous waste, regulating used oil as a hazardous waste, and promulgating regulations for the control of recycling.⁴ Complex regulations for the control of contaminated heating oil or any other material contaminated with hazardous waste were spelled out. “Dust suppression or road treatment” was prohibited.⁵

§ 14:34 Facilities for which permits are required

(upholding conditional exemption for military munitions as a rational policy decision).

¹⁹*See, e.g.,* Natural Resources Defense Council v. E.P.A., 755 F.3d 1010, 78 Env’t. Rep. Cas. (BNA) 1745 (D.C. Cir. 2014) (vacating Comparable Fuels Exclusion, promulgated at 63 Fed. Reg. 33782 (June 19, 1998), because Congress intended that EPA regulate all hazardous-waste-derived fuels except those expressly excluded in 42 U.S.C.A. § 6924(q)); Sierra Club v. E.P.A., 755 F.3d 968, 78 Env’t. Rep. Cas. (BNA) 2095 (D.C. Cir. 2014) (same with respect to Gasification Exclusion Rule, promulgated at 73 Fed. Reg. 57 (Jan. 2, 2008), but noting that 42 U.S.C.A. § 6924(q) does not necessarily require full regulation under RCRA).

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¹*See* 40 C.F.R. § 261.2(e).

²*See* 40 C.F.R. §§ 261.1(c), 261.2(c); *see* Am. Mining Cong. v. EPA, 824 F.2d 1177, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 21064 (D.C. Cir. 1987).

³*See* 40 C.F.R. § 261.2(c). The burden of proving the exclusion falls on the respondent in an enforcement action. 40 C.F.R. § 261.2(f). To further complicate matters, and to encourage the development of new uses and markets, EPA regional administrators may grant case-by-case “variances” from classification as a solid waste for recovered materials. 40 C.F.R. § 260.30. There is a similar procedure for classifying certain “enclosed flame combustion devices” as boilers, so that burning constitutes use as a fuel, rather than treatment of a waste. 40 C.F.R. § 260.33. There are parallel provisions, however, for reclassifying exempt uses back into the category of waste storage, treatment, or disposal. 40 C.F.R. §§ 260.40 to 260.41. These rules are so complex and so subject to discretionary determinations by EPA that it is probably good practice to seek a determination from the regional administrator at the outset.

⁴The Congressional declaration of purpose in the 1976 statute had omitted the need to protect health and the environment in regard to used oil recycling, and this omission was corrected in the HSWA of 1984. *See* 42 U.S.C.A. § 6901(a).

⁵*See* RCRA § 3004(l), 42 U.S.C.A. § 6924(l).

Treatment, storage or disposal of hazardous wastes is prohibited, except at facilities whose owners and operators have permits issued in accordance with EPA regulations (or at “interim status” facilities which are treated as if they had permits).¹ Anyone who wishes to operate a hazardous waste “TSD” facility must apply for a permit, and may not operate the facility without one.² Where one owns a facility that is operated by another, both are required to sign the permit application, and the permit is issued in both names.³

§ 14:35 Facilities for which permits are required—“Facility”

Only the owners and operators of a “facility” may receive a permit. A “facility” is the area within property boundaries, and includes in that area land, structures, or appurtenances—language which usually applies only to real estate, and not to movables.¹ This has made it difficult to license mobile treatment units. A “hazardous waste facility” is a facility where treatment, storage, or disposal of hazardous wastes is carried out, and must have a permit. The functions which trigger the permit requirement are as follows.

§ 14:36 Facilities for which permits are required—Treatment

“Treatment” is broadly defined in the statute. Treatment is any activity which reduces hazardous waste’s volume, makes it easier to manage, reduces its hazardous qualities, or makes recovery easier.¹ Incineration and other methods of destroying wastes are “treatment” rather than disposal.

§ 14:37 Facilities for which permits are required—Storage

“Storage” has several definitions. The statute defines it as any “containment” of hazardous waste that is not disposal.¹ EPA’s regulations have a general definition, which is not the same as the statute’s. EPA’s definition is as follows: “Storage means the holding of hazardous waste for a temporary period, at the end of which

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¹See RCRA § 3005(a), 42 U.S.C.A. § 6925(a).

²RCRA § 3005(a), 42 U.S.C.A. § 6925(a); 40 C.F.R. § 270.10. TSD regulations, including corrective action requirements, apply only to currently operating facilities. *Acme Printing Ink Co. v. Menard, Inc.*, 870 F. Supp. 1465, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 20784 (E.D. Wis. 1994).

³The regulations require both the owner and operator of the facility to sign the permit application and certify to the truth of the facts supplied in the application. 40 C.F.R. § 270.10(b). However, the Ninth Circuit has limited the scope of the certification requirement for absentee landowners to their knowledge of the activity and their liability for that activity. *Systech Env’tl. Corp. v. U.S. EPA*, 55 F.3d 1466, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 21247 (9th Cir. 1995).

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¹The statute does not define “facility.” In EPA’s regulations, the term is defined in somewhat circular fashion as a place where regulated activities occur. 40 C.F.R. § 260.10(a). The emphasis of EPA’s regulations is in fact on permitted activities, but the owner of the real estate where the activity occurs is required to assume responsibility. Limiting the definition to structures, real estate and appurtenances makes it difficult to regulate mobile treatment units. *See United Techs. Corp. v. EPA*, 821 F.2d 714, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 21015 (D.C. Cir. 1987); *see also Fishel v. Westinghouse Elec. Corp.*, 617 F. Supp. 1531, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20001 (M.D. Pa. 1985) (intent to operate a regulated facility not relevant to status); *see also Stever, Law of Chemical Regulation and Hazardous Waste*.

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¹RCRA § 1004(34), 42 U.S.C.A. § 6903(34).

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¹RCRA § 1004(33), 42 U.S.C.A. § 6903(33).

the hazardous waste is treated, disposed of, or stored elsewhere.”² This introduces a series of other defined terms into the definition, and arguably creates some gaps that EPA must then fill elsewhere in its regulations.³ EPA has set separate criteria for categories of vessels used to store wastes.⁴

Generators often will hold hazardous wastes before transporting them for treatment or disposal, and transporters will hold them for loading or transshipment. Since it would not be practical to impose “storage facility” permit requirements in every such instance,⁵ EPA created some exceptions to the storage regulations, which Congress embroidered upon. These exceptions defy brief summary and must be consulted. There are separate exceptions for different classes of generators, depending on size,⁶ and for transporters.⁷ Probably the largest exception is the one for generators of more than 1,000 kilograms per month, who may hold wastes for up to ninety days without becoming subject to storage facility permit regulations, so long as the wastes are accumulated in marked and dated tanks and other requirements are met.⁸

Generators during the allowed accumulation period are not subject to the requirements for “storer” vessels at other facilities but are subject to some special rules of their own.⁹

§ 14:38 Facilities for which permits are required—Disposal

“Disposal” is also complex. The statute defines it as accidentally or intentionally releasing hazardous waste onto land or into water, “so that the hazardous waste or any constituent thereof may enter the environment.”¹

This evidently is a two-part definition. Wastes must first be put on the land or into the water and second, this placing must be done in a way that may allow uncontrolled dispersal thereafter. This seems to fuse the definitions of “disposal” and

²40 C.F.R. § 260.10 (“storage”). This regulation is ambiguous; it is not clear whether holding wastes for on-site disposal is “storage,” nor whether wastes held for transportation to another site are in “storage.” When a generator holds wastes for less than ninety days, subject to certain conditions, they are exempt from the permit requirements for storage “facilities.” 40 C.F.R. § 262.34; *see* §§ 14:40, 14:41. The statute’s more inclusive and clear definition probably governs in other situations.

³*See, e.g.*, 40 C.F.R. § 266.22 (“storers” of recyclable materials which will be used in a manner that constitutes disposal).

⁴*See* 40 C.F.R. §§ 264, Subpart I (containers), Subpart J (tanks); *see also* RCRA § 3004(w), 42 U.S.C.A. § 6924(w) (EPA to regulate underground tanks that cannot be entered for inspection); 53 Fed. Reg. 34079 (Sept. 2, 1988) (EPA interpretation of final hazardous waste standards).

⁵EPA has issued a specific accumulation period for electroplating waste water treatment sludge (F006), which allows the waste to be stored for 180 days if the waste is being stored for legitimate metals recovery. It may be stored for 270 days if the electroplating operator must transport the waste over 200 miles for recycling. 65 Fed. Reg. 12378 (Mar. 8, 2000).

⁶*See* 40 C.F.R. §§ 261.5, 262.34.

⁷40 C.F.R. § 263.12 (transfer facility requirement).

⁸40 C.F.R. § 262.34(a).

⁹40 C.F.R. § 263.12.

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¹The term “disposal” means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground water. RCRA § 1004(3), 42 U.S.C.A. § 6903(3). *See* Smith, “CERCLA Compliance with RCRA: The Labyrinth,” 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 10518 (Dec. 1988). The acts enumerated in the statute, not the decision or intent to take those acts sometime in the future, will trigger “disposal.” *See, e.g.*, *U.S. v. Humphries*, 728 F.3d 1028 (9th Cir. 2013), for additional opinion, *see*, 539 Fed. Appx. 782 (9th Cir. 2013), cert. denied, 134 S. Ct. 1800, 188 L. Ed. 2d 766 (2014) and cert. denied, 134 S. Ct. 1800, 188 L. Ed. 2d 766 (2014).

disposal “facility,” and gives an odd twist to each. The incineration of wastes, for instance, is not disposal, but treatment; disposal can only be done at a land or water-based facility.² Since disposal in water is regulated under other statutes, “disposal” in fact is very nearly synonymous with land disposal.

The 1984 Amendments created a separate definition of “land disposal” for the purpose of banning land disposal of most wastes, which encompasses prolonged storage on land and the use of soil for treating wastes (land treatment) as well.³ For other purposes, however, “disposal facility” is separately defined by EPA as a facility where waste is intentionally placed, and where the waste will remain until closure.⁴

§ 14:39 Persons affected by hazardous waste regulations—Generators of hazardous waste

Generators’ principal obligation is to see that wastes are sent to permitted facilities for storage, or ultimate treatment and disposal, and that the government is notified of any other disposal or release. This responsibility is discharged by arranging for proper management and by documenting the arrangement with a “manifest,” a shipping document that must accompany the waste until it reaches the designated destination.¹ Proprietors of treatment, storage, or disposal facilities who receive properly documented wastes must return a copy of the manifest to the generator, who in turn must keep records and report any failure to receive this evidence of proper disposal.²

To help EPA and the states keep track of millions of manifests, every generator must obtain an identification number.³ EPA also assigns numbers to all designated wastes; as the manifest system now uses a single form in every state, the movement of hazardous wastes around the country is slowly being documented.

In October 2012, the enactment of the Hazardous Waste Electronic Manifest Establishment Act added another section to Subtitle C of RCRA.⁴ This legislation requires EPA to establish an electronic manifest system that could be used by any user, subject to reasonable service fees that are to be deposited by EPA into a fund intended to maintain the system.⁵ It also enabled EPA to enter into contracts and create an advisory board for purposes of establishing and maintaining an effective

²See *Center for Community Action and Environmental Justice v. BNSF R. Co.*, 764 F.3d 1019, 78 Env’t. Rep. Cas. (BNA) 2085 (9th Cir. 2014) (plaintiffs alleging that air emissions of diesel particulate matter were deposited on nearby land and water failed to state a claim because emitting waste directly into the air does not constitute “disposal”). *But see* *Little Hocking Water Ass’n, Inc. v. E.I. du Pont Nemours and Co.*, 91 F. Supp. 3d 940, 965 (S.D. Ohio 2015) (“RCRA’s legislative history and purpose supports [sic] a finding in this case that the aerial emissions of C8 particulate matter, which fell onto the ground, remained there, and contaminated the groundwater, constitutes [sic] disposal of solid waste under RCRA.”).

³See RCRA § 3004(k), 42 U.S.C.A. § 6924(k).

⁴See 40 C.F.R. § 260.10: “‘Disposal facility’ means a facility or part of a facility at which hazardous waste is intentionally placed into or on any land or water, and at which waste will remain after closure.”

[Section 14:39]

¹See 40 C.F.R. § 262.20(b).

²See 40 C.F.R. § 262.40.

³40 C.F.R. § 262.12.

⁴Hazardous Waste Electronic Manifest Establishment Act, Pub. L. No. 112-195, 126 Stat. 1452 (adding RCRA § 3024, codified at 42 U.S.C.A. § 6939g).

⁵RCRA § 3024(b)-(d), 42 U.S.C.A. § 6939g(b)-(d).

system and designated appropriations for start-up activities.⁶ EPA promulgated regulations in 2014 to meet the legislative directive.⁷ Under the regulations, the “e-Manifests” are an optional alternative to using paper manifests, although EPA expects most users to choose the electronic versions.⁸ EPA anticipates that the e-Manifest system will be online in Spring 2018.⁹ It will be effective in all states and will be carried out by EPA unless the state has received authorization to do so.¹⁰ The regulations describe the procedures that generators of hazardous waste must follow with respect to preparing e-Manifests.¹¹

The focus of the hazardous waste regulations is the “generator” of hazardous wastes, who must identify the wastes and ensure that they are properly managed; the ultimate purpose of the statute is to discourage generators from producing or disposing of wastes. It is therefore somewhat unfortunate that the regulations make it difficult to determine who is responsible for carrying out the generator’s duties.

The statute does not define “generator.” EPA’s regulations state that a generator is “any person, by site, whose act or process first causes a hazardous waste to be subject to regulation.”¹² The regulations which describe the generator’s responsibilities simply provide that they are applicable to “generators,”¹³ but whether this includes the owner of a factory (who does not perform any act, although he or she may own a “process”),¹⁴ or the production worker who turns a valve, or both, is not very clear. Furthermore, many wastes are created by inaction or omission; when materials are accumulated, but never used or sold, for instance, they become hazardous wastes by the lapse of time.¹⁵ In this case, the materials seem to become wastes without a generator; and while the owner and operators of the facility may now require a storage permit, if they do not direct the waste-generating activity, no one seems to be obliged to identify the wastes or create the manifests that allow EPA to enforce its regulations.

The peculiar phrase in the definition, “any person, by site,” signals the source of the difficulty. Some “generator” requirements apply to a facility where wastes are produced, while others apply to particular persons.¹⁶ By combining the two sets of requirements in a single definition of generator, the regulations make it difficult to determine who is responsible for either set.

§ 14:40 Persons affected by hazardous waste regulations—Generators of hazardous waste—Generators as persons

⁶RCRA § 3024(e)-(f), (i), 42 U.S.C.A. § 6939g(e)-(f), (i).

⁷See RCRA § 3024(g), 42 U.S.C.A. § 6939g(g); 79 Fed. Reg. 7518 (Feb. 7, 2014).

⁸40 C.F.R. §§ 262.24, 262.25.

⁹<https://www.epa.gov/hwgenerators/hazardous-waste-electronic-manifest-system-e-manifest>.

¹⁰See RCRA § 3024(g)(3), (h), 42 U.S.C.A. § 6939g(g)(3), (h); 40 C.F.R. §§ 271.3(b)(4), 271.4(c).

¹¹See 40 C.F.R. §§ 262.20(a)(3), 262.24, 262.25.

¹²40 C.F.R. § 260.10; *see also* 40 C.F.R. § 270.2, a slightly different definition in the permit regulations. Since generators are not required to obtain permits, the Part 270 definition is not generally applicable.

¹³See 40 C.F.R. § 262.10(a). Apparently in response to this difficulty, the regulations provide that “any person who generates a hazardous waste” is subject to enforcement action under RCRA “if he does not comply with the requirements of this part.” 40 C.F.R. § 262.10(g). This is not very helpful, since many of the persons who “generate” a waste—say by turning a valve—cannot possibly comply with the requirements for the facility, or for identifying the waste, while it is not clear once again that a corporate owner or operator ever “generates” a waste.

¹⁴See *United States v. Env'tl. Waste Control, Inc.*, 698 F. Supp. 1422, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20674 (N.D. Ind. 1988).

¹⁵See, e.g., 40 C.F.R. § 261.2(c)(4); *see* § 14:33.

¹⁶See, e.g., 40 C.F.R. §§ 262.10(c)-(d) 262.11.

The “person” who “generates” a waste must determine if it is hazardous.¹ “Person” is very broadly defined in the statute, and plainly may include any business entity, government, or natural person.² It is not clear that the owner of a site or the supervisor of an operation is the person who “generates” a waste, however, although arguably EPA intends to hold both responsible for the proper management of wastes.

Persons who generate wastes are subject to liability for any violations of the rules which apply to generators and generators’ facilities.³ These are obligations that ordinarily can only be fulfilled by the manager of a facility. For instance, when a chemical plant is properly maintained, there may still be leaks and spills from process equipment which is hosed down; the wash water may be collected and discharged through a treatment plant. The routine leaks and spills, so long as proper maintenance is kept up, will not be “wastes,”⁴ but if a pipe breaks or there is some failure of maintenance, the resulting spills may be hazardous wastes. Furthermore, part of the definition of a hazardous waste is the quantity produced in any one month at a facility, and the manner in which the material is used after it is produced.⁵ Only the person in charge of a facility can ensure that wastes generated in the whole facility under varying conditions of maintenance will be monitored. Subordinate personnel who improperly create or dispose of hazardous wastes may violate the prohibitions against unpermitted disposal⁶ but it seems unreasonable to hold them to the obligations imposed on generators, as present regulations appear to do. On the other hand, it might be helpful to clarify that the *person in charge* of a facility is responsible for identifying wastes, and tracking them into the regulatory system,⁷ which the regulations also fail to do.

Generators who plan to dispose of their wastes at landfills or other land disposal facilities must determine whether the wastes are eligible for land disposal at the point of generation, without dilution.⁸

Importers and exporters of hazardous waste are treated as “generators.”⁹

§ 14:41 Persons affected by hazardous waste regulations—Generators of hazardous waste—Generators as places

[Section 14:40]

¹40 C.F.R. § 262.11.

²See RCRA § 1004(15), 42 U.S.C.A. § 6903(15).

³See 40 C.F.R. § 262.10(g).

⁴See 40 C.F.R. § 261.3(a)(2)(iv)(D).

⁵See 40 C.F.R. § 261.3(b), § 261.5(b).

⁶United States v. Johnson & Towers, Inc., 741 F.2d 662, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20634 (3d Cir. 1984).

⁷Cf. Clean Water Act § 311(b), 33 U.S.C.A. § 1321(b); CERCLA § 103, 42 U.S.C.A. § 9603 (“person in charge” of facility is required to give notice to government when petroleum or “hazardous substances,” which include all hazardous wastes, are released to the environment). Cf. Lawrence, “Liability of Corporate Officers Under CERCLA: An Ounce of Prevention May Be the Cure,” 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 10377 (Sept. 1990).

⁸See § 14:64; 40 C.F.R. § 262.11(d).

⁹For example, an importer of hazardous waste must execute a manifest and sign a certification statement normally signed by a generator. The manifest must include both the name and address of the foreign generator and the EPA identification number, name, and address of the importer. An importer must also comply with other requirements imposed on generators, such as submitting biennial reports. See C.F.R. §§ 262.10(d) and 262.20(a). See generally RCRA § 3017, 42 U.S.C.A. § 6938 (exporters); 51 Fed. Reg. 8744 (1986) (codified at 40 C.F.R. §§ 260, 262, 263, 271); 40 C.F.R. § 262.50 (exporters); 40 C.F.R. § 262.60 (importers).

At any place,¹ the persons responsible for compliance (a) send notices to EPA when hazardous wastes are first generated; (b) provide manifests for wastes shipped off-site; and (c) keep records of the notices, manifests, and reports.²

For each place where wastes are generated, there must be a plan for minimizing waste production.³ If any wastes are accumulated, the persons responsible for compliance must ensure that certain minimum standards for design and operation are maintained, that suitable containers are used, and that personnel are available and trained for responding to emergencies.⁴ If the accumulation of waste exceeds specified amounts and times, the facility as a whole becomes a storage facility for which a permit is required.⁵ Within the specified limits, however, generators, unlike most other persons, may store wastes without a permit.

There is a series of exemptions from some or all of these requirements for “small quantity generators”—where less than 1,000 kilograms of hazardous waste is generated in any one month.⁶

The small-quantity exemption is not a static category, and does not depend on the size of a business or even on the amount of wastes generated in the past. It is based on a continuously recalculated rate of waste generation, and varies from month to month: “The Agency [EPA] has always taken the position that a generator may be subject to different standards at different times, depending upon his generation rate in a given calendar month.”⁷

§ 14:42 Persons affected by hazardous waste regulations—Generators of hazardous waste—“Small quantity” generators

EPA had originally excluded from the regulations applicable to generators all who produced less than 1,000 kilograms of hazardous waste per month, on the theory that this large category of generators produced only a small fraction of all hazardous waste, and that regulation of the small generators would be unduly burdensome for them and for the Agency. Congress disagreed with this judgment, in part because small-quantity generators despite their small share of total wastes, were viewed as a large part of the problem that RCRA had set out to correct.¹

The statute now lowers the exemption from 1,000 to 100 kilograms per month, but allows EPA to ease the burden of regulation for generators who produce between 100 and 1,000 kilograms.²

The result is that there are now three categories of the “small quantity generator” exemption: generators between 100 and 1,000 kilograms per month; generators of less than 100 kilograms per month; and generators of still smaller quantities of acutely hazardous waste. Generally speaking, generators in the first category are

[Section 14:41]

¹There is no term corresponding to “facility” where hazardous wastes are generated.

²See 40 C.F.R. § 262, Subparts B and D.

³See RCRA § 3002(b), 42 U.S.C.A. § 6922(b).

⁴See 40 C.F.R. § 262.34.

⁵See 40 C.F.R. § 262.34.

⁶See RCRA § 3001(d), 42 U.S.C.A. § 6921(d).

⁷51 Fed. Reg. 10146 (Mar. 24, 1986); *see also* 45 Fed. Reg. 76620 (Nov. 19, 1980).

[Section 14:42]

¹See § 14:7, 14:8. EPA published its final Hazardous Waste Generator Improvements Rule on November 28, 2016. 81 Fed. Reg. 85732. The rule will go into effect on May 30, 2017. The Rule includes a new section to address how a generator makes a generator category determination.

²RCRA § 3001(d), 42 U.S.C.A. § 6921(d).

subject to the same regulatory requirements that apply to other generators, except that wastes may be accumulated for up to 180 days—so long as the quantity of waste does not exceed 6,000 kilograms; if the 100–1,000 kilogram generator must send his wastes more than 200 miles for off-site handling, he or she may accumulate for up to 270 days, to allow more efficient shipments, but the total quantity is still limited to 6,000 kilograms.³

The second category includes generators who produce less than 100 kilograms of waste in any one month, so long as the waste is not “acutely hazardous” waste, which is separately defined for this purpose and subject to separate limits.⁴ Generators in this category are so-called “conditionally exempt small quantity generators,” and are exempt from regulation as generators, so long as they observe the conditions of the exemption.⁵

The conditions of the exemption are substantial. First, of course, the exemption only applies month by month, and to be sure of having it, the generator presumably must test the wastes produced at the facility, and must ensure that none are the acutely hazardous wastes with lower cutoffs, and that hazardous wastes (which he must identify) are not accumulated in amounts or times beyond the conditional exemption limits. This somewhat lessens the value of the exemption from the requirement to test wastes and determine if they are hazardous.

Further, the conditionally exempt small quantity generator must send acutely hazardous waste to either a permitted hazardous waste facility, a reclamation facility, or another facility licensed by the state to receive solid wastes.⁶ Many state-licensed facilities may require documentation equivalent to the manifests required under RCRA for hazardous wastes, and many states eliminate the small-generator exclusion entirely.

One hundred kilograms of waste is only fifteen gallons of acid, or of water contaminated with listed wastes; the exemption is fairly narrow, and few businesses can be confident of remaining within it from month to month if they generate any industrial wastes at all. The small quantity generator may not mix his wastes with used oil or with fuel destined for burning, without complying with the regulations applicable to wastes from large-quantity generators.⁷

The third category of small-quantity generator exclusion applies to generators of acutely hazardous wastes (generally those listed as hazardous wastes for their toxicity) of one kilogram or less in any one month (or up to 100 kilograms of soil or debris contaminated with acutely hazardous waste).⁸ Acutely hazardous wastes may be accumulated only up to the monthly allowance.⁹ Acutely hazardous wastes within the very narrow allowance for small-quantity generators must still be sent to state-licensed facilities, although not necessarily hazardous waste facilities.¹⁰

The small-quantity generator exemption therefore hardly gives them *carte blanche*. The generator must at a minimum keep a watchful eye on wastes to identify any listed wastes which may be acutely hazardous. If the volume of any wastes exceeds 100 kilograms per month, it is probably good practice to test them to determine if they are hazardous wastes subject to regulation. EPA has given a low priority to

³See 40 C.F.R. § 262.34(d)-(e).

⁴40 C.F.R. § 261.5.

⁵40 C.F.R. § 261.5(b).

⁶40 C.F.R. § 261.5(b).

⁷40 C.F.R. § 261.5(h).

⁸40 C.F.R. § 261.5(e).

⁹40 C.F.R. § 261.5(e).

¹⁰40 C.F.R. § 261.5(e).

enforcement against generators, and has generally been reluctant to impose requirements on small-quantity generators. The agency has undertaken a campaign to educate the small-quantity generators on their obligations under the first category, but has made little effort to reach the conditionally exempt small generators.

§ 14:43 Persons affected by hazardous waste regulations—Generators of hazardous waste—Generators’ on-site management of wastes

Generators, more often than not, manage their hazardous wastes after production. Indeed, unless the wastes are accidentally spilled at the time of production, a generator can hardly avoid storing the wastes briefly, and disposing of some—if only floor sweepings and hoseings—on site. So long as generators stay within the limits prescribed by regulations, and carry out activities considered ancillary to the production of wastes, they do not require permits for these activities. For instance, generators may store unlimited quantities of wastes for up to ninety days without obtaining the permit required for “storage facilities.”¹ Generators may sometimes transport wastes within their facilities without identifying themselves as “transporters.”²

When a generator of more than 100 kilograms per month of hazardous wastes treats or disposes of these wastes on-site, or stores them for more than ninety days (180 days for small-quantity generators), a permit is needed as it would be for any other hazardous waste management facility.

§ 14:44 Persons affected by hazardous waste regulations—Transporters of hazardous waste

EPA does not impose significant added burdens of regulation on transporters of hazardous waste who must, of course, comply with Department of Transportation regulations for hazardous substances. EPA requires that transporters obtain identification numbers (which are in no sense permits), carry generator’s manifests with every load of hazardous waste, identify the wastes they are carrying, and deliver the manifests along with the wastes.¹

Transporters, like generators, must notify EPA or a state agency of hazardous wastes they may have delivered for disposal before the manifest system took effect if, as was commonly the case before RCRA was effective, the transporter was free to choose the destination for the wastes; there are criminal penalties for failing to give this notice.² And again, as in the case of generators, transporters may store and handle wastes for brief periods in ways that are ancillary to the transportation without a permit.³ Finally, importers and exporters are both generators and transporters; it is not clear which set of rules governing ancillary storage and other handling would govern.⁴

[Section 14:43]

¹See 40 C.F.R. § 262.34; see § 14:36.

²See 40 C.F.R. § 263.10(b). Generators who treat, store or dispose of wastes at the facilities where they were generated do not need to prepare manifests. See 40 C.F.R. § 262.20.

[Section 14:44]

¹See generally 40 C.F.R. § 263. For the Department of Transportation regulations, see 49 C.F.R. §§ 171 to 179.

²See CERCLA § 103(c), 42 U.S.C.A. § 9603(c).

³See 40 C.F.R. § 263.12 (hazardous waste in containers may be stored for up to ten days at a “transfer facility”).

⁴See 40 C.F.R. § 263.10(c).

§ 14:45 Persons affected by hazardous waste regulations—Owners and operators of hazardous waste management facilities; Other persons who manage hazardous wastes

Here we reach the neck of the funnel; hazardous wastes have been channeled by generally-applicable, self-executing rules to a few facilities where they are stored, treated, or disposed.

Facility “owners” and “operators” are principally responsible for compliance with facility regulations. Owners and operators must “have” permits, which contain the applicable law,¹ and owners and operators are subject to penalties for noncompliance.²

“Owner” is circularly defined, but appears to be the holder of title. “Operator” is the person in charge of overall operation of the facility.³

No one may treat, store, or dispose of hazardous waste except in accordance with a permit; while only owners or operators must have permits, employees and any others who manage the wastes also may be individually subject to both civil and criminal penalties for violations.⁴

§ 14:46 Permit procedures and general provisions

The whole complex program of hazardous waste regulation finally draws itself to a point, and focuses on the owners and operators of hazardous waste management facilities, who must apply to a state agency or EPA for a permit, and who may not operate their facility if the permit is denied. Treatment, storage, or disposal of hazardous waste except in accordance with a permit is prohibited.¹

§ 14:47 Permit procedures and general provisions—The role of state agencies; Authorization

As in other environmental protection programs, state agencies are expected to assume primary responsibility for implementing and enforcing the hazardous waste permit system. States may adopt their own statutes and regulations for this purpose, and submit them to EPA. After publishing a notice for comment, EPA must approve the state plan, unless it is “not equivalent” to the federal program; it is inconsistent with programs in other states; or the state provides inadequate assurance the plan

[Section 14:45]

¹See RCRA § 3005(a), 42 U.S.C.A. § 6925(a).

²See RCRA § 3008, 42 U.S.C.A. § 6928.

³See 40 C.F.R. § 260.10. See *United States v. Env'tl. Waste Control, Inc.*, 698 F. Supp. 1422, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20674 (N.D. Ind. 1988); see also *In re Paoli R.R. Yard PCB Litigation*, 790 F. Supp. 94, 35 Env't. Rep. Cas. (BNA) 1070, 22 Env'tl. L. Rep. 21517 (E.D. Pa. 1992), judgment aff'd, 980 F.2d 724 (3d Cir. 1992) (holding that EPA's cleanup of a contaminated site in its regulatory capacity did not make the Agency an operator under CERCLA).

⁴See *United States v. Johnson & Towers, Inc.*, 741 F.2d 662, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20634 (3d Cir. 1984); RCRA § 3009(a), 42 U.S.C.A. § 6925(a); see also RCRA § 3008, 42 U.S.C.A. § 6928. The *Johnson & Towers* opinion assumes that the permit requirement applies only to owners and operators—forgetting that the prohibition against disposal without a permit applies to everyone—and therefore leaves open the anomalous possibility that persons who are not connected with facilities at all are not subject to criminal prosecution.

[Section 14:46]

¹RCRA § 3005(a), 42 U.S.C.A. § 6925(a).

will be enforced. Once approved by EPA, the state program is said to be “authorized.”¹

Unless and until a state program is authorized, EPA must administer the RCRA program within that state; once the state program is “authorized,” however, the state carries out its program “in lieu” of the federal program.² Since the state is acting in lieu of EPA, and not as its agent, it is not subject to the federal statutes which regulate federal actions; for instance, the federal Administrative Procedure Act continues some permits in effect after their expiration date, but there is often no comparable provision in state law.³ EPA has concurrent authority to enforce the authorized program, but the federal agency enforces the state’s regulations, rather than its own.⁴

The statute calls for “equivalent” state programs, and in theory EPA could have allowed considerable experimentation by the states, requiring only equivalent results. However, the agency instead has required state programs to be equivalent to the federal in their provisions, as well as in their performance; EPA’s standard therefore amounts to a requirement that state programs adopt statutes and regulations identical in all important respects to the federal. There are some odd departures from this standard, however; for instance, the states were not required to have interim authority to impose civil penalties for violations of their laws. Where EPA’s authorization rules have such gaps, the agency tends to fill them in its oversight policy. States were not required to have administrative civil penalty authority, for instance, but if they fail to levy penalties EPA may override state actions with its own enforcement program.⁵

§ 14:48 Permit procedures and general provisions—The role of state agencies; Authorization—Interim and final authorization

Authorization is broken into several stages, and as a result, different portions of a hazardous waste program may be administered by different levels of government.

To allow states to assume responsibility for hazardous waste regulation as quickly as possible, RCRA provided for a transition step, “interim authorization,” whose requirements were less exacting than final authorization. If EPA determined that a state program was only “substantially equivalent” to the federal program, the agency could grant “interim authorization” for the state to operate its program in lieu of the federal program until the program was entirely equivalent and was finally authorized.¹

Interim authorizations ended on January 31, 1986; after that date, state law was

[Section 14:47]

¹See RCRA § 3006, 42 U.S.C.A. § 6926.

²See RCRA § 3006(b), 42 U.S.C.A. § 6926(b).

³See 5 U.S.C.A. § 558(c). Federally issued permits must also comply with the Wild and Scenic Rivers Act, 16 U.S.C.A. §§ 1271 to 1287; the Endangered Species Act, 16 U.S.C.A. §§ 1531 to 1542; the Fish and Wildlife Coordination Act, 16 U.S.C.A. §§ 661 to 666c; and the Coastal Zone Management Act, 16 U.S.C.A. §§ 1451 to 1464. Federal agencies are also subject to procedural requirements of various kinds, in the Administrative Procedure Act, 5 U.S.C.A. §§ 551 to 706, and the National Environmental Policy Act, 42 U.S.C.A. §§ 4321 to 4361. This last statute may not be applied in all its terms to EPA, if a court finds that RCRA provides the “functional equivalent” of its procedures, which is the view that EPA takes. State law may, of course, provide equivalent requirements. See *Alabamians for a Clean Environment v. Thomas*, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20460 (N.D. Ala. 1987); Stever, *Law of Chemical Regulation and Hazardous Waste* Ch. 5.

⁴See RCRA § 3008, 42 U.S.C.A. § 6928.

⁵See § 9:42.

[Section 14:48]

¹RCRA § 3006(c), 42 U.S.C.A. § 6926(c).

carried out in programs with final authorization, while federal law was to be carried out by EPA everywhere else.² However, EPA's resources for administering hazardous waste programs were limited; the agency therefore adopted a practice of contracting with the states to administer portions of the federal program. The 1984 amendments authorized such agreements to carry out the new programs imposed by those amendments, but were silent as to agreements to carry out the older program.³

To add a final layer of complexity, when Congress amended RCRA extensively in 1984, some of the changes were self-executing and others required changes in authorized programs. Until the states had time to enact parallel provisions and submit them for final authorization, EPA was required to administer these provisions, even in authorized states.⁴

Finally, federal law does not entirely preempt state law in this field; state requirements which fall outside the RCRA specifications, or which are more stringent than RCRA, may continue in effect even under authorization.⁵ Before authorization, divergent state requirements remain in effect unless they are so inconsistent with EPA's program as to be constitutionally preempted.⁶ In authorized programs, EPA has authority to enforce state requirements which are consistent with, but more stringent than, the federal program; EPA probably does not have authority to enforce state law which is outside the federal requirements, and in any case will not. It is not always clear whether a requirement is more stringent, or just different, from federal law. States may enforce their delegated RCRA programs against federally owned and operated facilities.⁷

§ 14:49 Permit procedures and general provisions—The role of state agencies; Authorization—Status of state programs

To summarize, in any state, a hazardous waste program may now have one or more of these four components: A program carried out by the state under an agreement with EPA; an "authorized" program carried out by the state in lieu of EPA's; a program carried out directly by EPA; and a portion of the state program which is outside and not inconsistent with federal law. (For an example of the last of these: RCRA does not contain any limits on siting of hazardous waste facilities, so long as performance-based requirements are met. Local governments almost always have zoning and other siting restrictions, which are not preempted by federal law; some states may have elaborate site-approval procedures, which allow public participation.)

It is difficult to ascertain the status of any state program. EPA publishes authorization actions in the *Federal Register*, and some but not all of these are collected in Part 272 of Title 40, Code of Federal Regulations. EPA tracks each state's authori-

²See RCRA § 3006(c)(1), 42 U.S.C.A. § 6926(c)(1); 51 Fed. Reg. 4128 (1986).

³See RCRA § 3006(c)(3), 42 U.S.C.A. § 6926(c)(3).

⁴See RCRA § 3006(g), 42 U.S.C.A. § 6926(g).

⁵*Hazardous Waste Treatment Council v. Reilly*, 938 F.2d 1390, 33 Env't. Rep. Cas. (BNA) 1699, 21 Env'tl. L. Rep. 21228 (D.C. Cir. 1991) (holding that North Carolina's stringent hazardous waste program does not conflict with federal law even though it interfered with a company's plan to build a treatment facility in the state).

⁶See RCRA § 3009, 42 U.S.C.A. § 6929.

⁷*United States v. Colorado*, 990 F.2d 1565, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20800 (10th Cir. 1993).

zation status and makes it available online.¹ As of December 2016, 51 states and territories received authorization to implement the initial RCRA program, while several also have authority to implement various additional parts of the RCRA program (e.g., corrective action).

One useful document for determining the status of any one state's program is usually a Memorandum of Agreement (MOA) entered into between the state and EPA's regional administrator.² The MOA defines the portions of the program which the state will administer, and those for which EPA reserves authority; it may also contain extensive agreements about inspection and enforcement procedures which reflect EPA's policies for exercising oversight authority.³ The MOAs are not published, but are public records available from EPA regional offices.

As a practical matter one must begin with state law, which is always in effect to some degree; most states have their own permit program, whether or not authorized to carry out a permit program in lieu of the federal.⁴ But it is probably wise to assume that there is also a parallel federal program, even in authorized states, and to consult EPA regional offices, the MOA, and state agencies about applicable law.

Most of this complexity is transitional; eventually, the programs should settle down to final authorization, but the transition has been greatly prolonged by changes in EPA regulations and amendments in the statutes. To soften the impact of changes, EPA may authorize states to carry out programs, based on the law as it existed on the date one year before the state applied for authorization, or January 26, 1983, whichever is later,⁵ but later enactments must be absorbed into the authorized program by the same elaborate process as the initial authorization.

§ 14:50 Permit procedures and general provisions—The role of state agencies; Authorization—Withdrawal of authorization

After public notice and comment, and after affording the state an opportunity to cure the defect, EPA may withdraw any authorization it has granted, if it finds the program is not being administered or enforced in accordance with the requirements of EPA guidelines.¹

§ 14:51 Permit procedures and general provisions—Permit procedures

The owners and operators of hazardous waste management facilities in existence on November 19, 1980, the effective date of EPA's permit regulations, are required

[Section 14:49]

¹EPA, RCRA State Authorization, <https://www.epa.gov/rcra/federal-register-notice-and-state-authorization-tracking-system-stats-reports-state>.

²MOAs accompany every interim or final authorization. See 40 C.F.R. §§ 271.5(a)(4), 271.8. EPA regional offices usually have two other agreements with the states: financial assistance agreements, and "state/EPA agreements" which are informal memoranda consolidating EPA's financial assistance and oversight policies, all of which may deal with hazardous waste program delegations. These agreements should all be made consistent with each other. 40 C.F.R. § 271.8(c).

³See 40 C.F.R. § 271.8. Facility operators may be particularly concerned to know how pending permit applications and existing permits are handled after an authorization. This must be separately negotiated in each state, and the arrangements are contained in the MOA. EPA may complete action on pending applications even after authorizations, as it has in other programs.

⁴See Stever, *Law of Chemical Regulation and Hazardous Waste* app. (compendium of state hazardous waste law).

⁵See RCRA § 3006(b), 42 U.S.C.A. § 6926(b).

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¹See RCRA § 3006(e), 42 U.S.C.A. § 6926(a). See, e.g., *North Carolina v. EPA*, 881 F.2d 1250 (4th Cir. 1989) (denial of stay of withdrawal of state authorization).

to submit the first part—Part A—of a permit application to EPA (or an authorized state).¹ Facilities which closed before July 26, 1982, were excused from completing their applications.² However, owners and operators of land disposal facilities which closed after that date must still complete their applications and hold permits during the period after the facility is closed—which may be thirty years or longer—during which the law requires continuing surveillance and corrective action.³ Persons who wish to operate a new facility must apply for a permit and receive it before beginning construction.⁴

Permits are issued for a fixed term not to exceed ten years, are reviewed after five years, and may be modified, suspended, or revoked by EPA during their term.⁵

Permits may be issued to classes of facilities, a single facility, or for a “unit” within a facility if there have been no releases from other units by the facility.⁶ Permits may be issued for “units” when a single facility⁷ is the site of different processes, such as separate waste treatment or disposal processes; or where there are separate, independently managed waste management activities.⁸

Both the owner and operator of a facility must sign the permit application, and the signers must be “principal executive officers” if either is a corporation; there are equivalent requirements for other types of business organization or government.⁹

The permit application is in two parts. “Part A,” which serves as a notice to the government, is brief and is filed on a specified form, generally within six months after the effective date of regulations which first subject the facility to RCRA standards.¹⁰ This portion of the application contains only a general description of the facility and the activities that are carried out there.¹¹

The second portion of the application, “Part B,” is a detailed narrative statement, containing a great deal of technical detail, as well as the results of environmental monitoring; interim status land disposal facilities were required to complete their applications by November 8, 1985, or within twelve months of coming within RCRA

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¹The statute requires facility owners and operators to “have” permits, RCRA § 3005(a), 42 U.S.C.A. § 6925(a), and EPA regulations require persons who must have permits to apply for them. 40 C.F.R. § 270.10. Until EPA acts on the application, the facility has “interim status,” if it meets other requirements. See § 14:127.

²See 40 C.F.R. § 270.1(c).

³40 C.F.R. § 270.1(c).

⁴RCRA § 3005(a), 42 U.S.C.A. § 6925(a). The statute actually requires anyone “planning” a new facility to apply, and prohibits construction until a permit has been granted. EPA regulations only require, however, that a permit be obtained before “physical construction” begins. See 40 C.F.R. § 270.10(f). This is narrower than the apparent statutory requirement, and is inconsistent with the definition of an “existing facility,” where “construction” is said to begin on entering into a binding agreement to construct. 40 C.F.R. § 270.10(e). The effect is to broaden the category of “existing” facilities, and somewhat to vitiate the impact of technology-forcing requirements for new facilities, since under EPA’s regulations, long-term contracts have the effect of grandfathering a facility out of new technology-forcing requirements, even if construction is delayed for many years.

⁵See RCRA § 3005(c), 42 U.S.C.A. § 6925(c); 40 C.F.R. §§ 270.41 to 270.50.

⁶See 40 C.F.R. § 270.1(c)(4).

⁷See § 14:46.

⁸See 40 C.F.R. § 270.10(b).

⁹See 40 C.F.R. § 270.11. The present requirement was adopted in settlement of litigation. See 48 Fed. Reg. 39611, 39619 (Sept. 1, 1983); Stever, *Law of Chemical Regulation and Hazardous Waste* Ch. 5.

¹⁰40 C.F.R. § 270.10(e)(1)(i). EPA may effectively extend this deadline where good cause is shown. See 49 Fed. Reg. 17716 n.1 (Apr. 24, 1984).

¹¹See 40 C.F.R. § 270.13.

requirements, whichever is later.¹² For new facilities, Part B need not be submitted until called for.¹³

Congress anticipated that EPA would take some time to issue permits for existing facilities and, therefore, provided a limited grandfather period during which existing facilities that submitted Part A of their applications and obtained local permits would be treated as if they held federal permits. This is called “interim status” in the statute.¹⁴ EPA has indeed been slow to act on the permit applications from existing facilities, and some thousands of facilities remained in interim status ten years after the passage of RCRA. When Congress amended the statute in 1984, it set schedules for EPA to act on the permit applications. Existing facilities were to complete their applications and show compliance with interim status standards for groundwater monitoring and financial responsibility by November 8, 1985. Interim status for land disposal facilities in existence on November 8, 1984, is limited to four years, and for other facilities, eight years.¹⁵ Many—perhaps most—land disposal facilities failed to show compliance by November 9, 1985, and were required to close.

§ 14:52 Permit procedures and general provisions—“Interim status” during permit processing

This status is conferred by the statute itself, and applies to any facility in existence on the date of the regulations which cause it to be a hazardous waste facility that has applied for a permit, and whose permit has been neither granted nor denied.¹ The definition of “in existence” is borrowed from the Clean Air Act and requires the facility to have been in operation or under construction on the applicable date and to have received all necessary state and local waste management permits (zoning approval is not required).²

While EPA does not confer interim status, it may terminate the status.³ A facility operator may ask for a determination whether his facility has interim status. The letter is issued by a regional administrator or regional counsel of EPA, but such letters are only opinions and are not subject to judicial review.⁴ In most states, a state agency now administers the interim status program, but the practice has persisted

¹²See RCRA § 3005(e)(3), 42 U.S.C.A. § 6925(e)(3).

¹³See 40 C.F.R. § 270.10(e)(4). Persons who propose to build new facilities must *complete* their applications by 180 days before they plan to begin physical construction. 40 C.F.R. § 270.10(e)(4). Since EPA rarely finds an initial application complete, and regularly asks for supplemental information, it is good practice to consult the agency well before submission, and to allow a year or more for processing of the ostensibly final application.

¹⁴See RCRA § 3005(e), 42 U.S.C.A. § 6925(e).

¹⁵RCRA § 3005(c)(2)(C), 42 U.S.C.A. § 6925(c)(2)(C). EPA is required to act on permit applications before those terms end, but it seems that if EPA fails to act, interim status will expire by operation of the statute unless the facility has filed a permit application. See 40 C.F.R. § 270.73(c), (d), (f), and (g).

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¹RCRA § 3005(e)(1), 42 U.S.C.A. § 6925(e)(1); 40 C.F.R. §§ 270.2, 270.70(a); Stever, *Law of Chemical Regulation and Hazardous Waste* Ch. 5.

²40 C.F.R. § 270.2 (“existing hazardous waste management facility”).

³See RCRA § 3005(e)(1)(C), 42 U.S.C.A. § 6925(e)(1)(C); 40 C.F.R. § 270.10(e)(4). Failure to submit requested information is the only ground for termination, but as EPA may properly request information concerning compliance status, the Agency plainly may terminate interim status for noncomplying facilities. The statute also says that interim status will terminate if “other plaintiff[s]” than EPA prove the deficiency, which presumably creates a right of action for declaratory judgment actions by some class of injured plaintiffs.

⁴See *Hempstead County & Nevada County Project: Landfill Comm. v. EPA*, 700 F.2d 459, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20385 (8th Cir. 1983).

of requesting determinations from the federal EPA.

Facilities in interim status must comply with a few important requirements imposed by federal and state law.⁵ Generally, they must maintain security at their facilities, and maintain records for inspection. Land disposal facilities must monitor groundwater quality, and take corrective action whenever impermissible contamination is found. Even if they close before receiving a final permit, interim status facilities must follow federal requirements for closing a facility, for surveillance (and corrective action if required by a permit) for thirty years after closure, and for any continued period after that time during which corrective action is required by a permit. Facility owners and operators must also submit evidence of insurance and of their financial ability to comply with federal closure and post-closure requirements.⁶

These are substantial requirements. They mirror the parallel requirements for permitted facilities, which are described in more detail below. The burden of drilling wells and monitoring the groundwater beneath a landfill, for instance, or of providing the needed financial assurance of monitoring and any required cleanup during the facility's life plus thirty years may be well beyond the resources of a landfill owner; many interim status land disposal facilities therefore may become abandoned Superfund cleanup sites in coming years.

Interim status terminates on the date EPA takes final action on a permit application; when EPA otherwise terminates the status; or on the date provided in the statute, whichever is soonest.⁷

§ 14:53 Permit procedures and general provisions—Permit issuance and modification

EPA's permit issuance procedures are similar under each of the environmental protection statutes, but there are enough slight dissimilarities to require a separate procedure in each program. Because the slight differences are imbedded in the statutes, EPA has been unable to create a unified procedure.¹

The hazardous waste permitting procedures are set out in Title 40, Part 270 of the Code of Federal Regulations. However, some disposal wells require permits under the Safe Drinking Water Act, which requires slightly different procedures;² and disposal into surface water³ or into the oceans,⁴ of course, requires still other permits.

Permits are issued for a term not to exceed ten years, are reviewed after five years, and may be modified or terminated by the issuing agency.⁵

⁵See 54 Fed. Reg. 9596, 9598 (Mar. 7, 1989) (EPA amends interim status facility regulations and allows flexibility to comply with federal and state law).

⁶See RCRA § 3005(e)(2), 42 U.S.C.A. § 6925(e)(2); 40 C.F.R. § 265.

⁷See RCRA § 3005(e)(1)(C), 42 U.S.C.A. § 6925(e)(1)(C); 40 C.F.R. § 270.10(e)(4).

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¹For the sad history of EPA's "consolidated permit regulations," see 48 Fed. Reg. 14146 (1983); Stever, *Law of Chemical Regulation and Hazardous Waste* Ch 5.

²See 40 C.F.R. §§ 144.31 to 144.55.

³See 40 C.F.R. §§ 122.21 to 122.50.

⁴See 40 C.F.R. §§ 220 to 229. See *United States v. T & S Brass & Bronze Works, Inc.*, 701 F. Supp. 1422, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20857 (4th Cir. 1988); *United States v. Clow Water Sys.*, 701 F. Supp. 1345 (Ohio 1988); *United States v. Env'tl. Waste Control, Inc.*, 698 F. Supp. 1422, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20674 (N.D. Ind. 1988); *United States v. Allegon Metal Finishing Co.*, 696 F. Supp. 275, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20148 (W.D. Mich. 1988).

⁵See RCRA § 3005(c)(3), 42 U.S.C.A. § 6925(c)(3); 53 Fed. Reg. 37912 (Sept. 28, 1988) (EPA

§ 14:54 Permit procedures and general provisions—General requirements for facility permits¹

Individual facility permits will contain general requirements, categorical requirements established for that class of facility, and in most cases, facility-specific requirements negotiated with the permit issuing agency. The general and categorical requirements are described in detail in Part 264 of EPA's regulations, Title 40 of the Code of Federal Regulations. The prescribed requirements are often highly specific and leave little room for discretion. Others, however, are stated quite generally in the regulations; agency permit writers may translate them into detailed site-specific requirements. The following is a summary of the general requirements. In the next section, we will summarize the more important categorical requirements.

§ 14:55 Permit procedures and general provisions—General requirements for facility permits—Design standards

All designs must meet some minimum performance standards. These are common-sense requirements that are stated in general terms. Incompatible wastes which might react or explode when brought together must be physically separated, and facility units must be designed and located in a way that protects them from earthquakes and floods, that prevents emergencies, and allows response action to be taken when emergencies of any kind do occur.¹ These very general statements are likely to be translated into site-specific terms by EPA permit writers wherever categorical design standards do not apply.

§ 14:56 Permit procedures and general provisions—General requirements for facility permits—Operating requirements

The general operating requirements are extensive and detailed. The facility of course must comply with the manifest system; there are several operating procedures designed to support this system.

First, the facility operator must test each new waste received (and each waste received from a new generator), and must note any discrepancies between its test and the information on the manifest.¹ The sample must be representative, taken in accordance with an approved waste analysis plan, and must be analyzed in accordance with the detailed requirements EPA has specified in Part 261 of its regulations.² The permit holder must return to the generator a notice that the facility has a permit, and that the waste has been accepted; when additional tests are completed it must send a further notice of any variance from the manifest description. The facility must maintain records of these documents and must make regular activity reports to EPA or a state agency.³

The notice and recordkeeping requirements are at the heart of the whole regulatory scheme: The permit holder's records and notices allow the government to enforce the requirement that wastes be channeled to permitted facilities.

amends permit modification requirements).

[Section 14:54]

¹Donald W. Stever is the principal author of this subsection.

[Section 14:55]

¹See 40 C.F.R. §§ 264.18, 264.31, 264.35.

[Section 14:56]

¹See 40 C.F.R. § 264.13.

²See 40 C.F.R. § 264.13.

³See 40 C.F.R. §§ 264.70 to 264.77.

The facility must also have a series of plans for maintenance and inspection, for personnel training, and for response to emergencies, which are usually incorporated into the permit. These plans are detailed and may be the subject of extensive negotiation, although the regulations are stated in only general terms.⁴

§ 14:57 Permit procedures and general provisions—General requirements for facility permits—Financial responsibility—General

Section 3004(a)(6) of RCRA specifically requires that EPA develop standards governing “the maintenance and operation of . . . TSD facilities, requiring such additional qualifications as to ownership, continuity of operation . . . and financial responsibility as may be necessary or desirable.”¹ Owner/operators are to provide either corporate guarantees or one of three mechanisms for insuring liabilities during the facility’s active life and to provide several mechanisms to ensure that the cost of compliance with the closure and postclosure requirements² will be met throughout the regulated death of the entity.³

States may, and often do, require different mechanisms. The regulatory requirement is that alternative state mechanisms be “at least equivalent” to the Subpart H requirements.⁴ State mechanisms may be employed even in states in which EPA administers the RCRA program, when authorized by the Regional Administrator.⁵

Finally, there are notification and other requirements respecting transfer of ownership or operation, and incapacity of either the owner or operator or the financial guarantor.⁶

Permitted facilities’ financial assurances must include the cost of corrective actions to clean up releases; an amendment in 1984 inserted a special requirement that the financial responsibility demonstration for land disposal facilities also include financial responsibility to carry out corrective action relating to off-site contamination.⁷

§ 14:58 Permit procedures and general provisions—General requirements for facility permits—Liability insurance requirements

EPA requires all facilities to insure themselves against third-party claims for

⁴See 40 C.F.R. §§ 264.15 to 264.16, 264.33 to 264.37, 264.50 to 264.56.

[Section 14:57]

¹RCRA § 3004(a), 42 U.S.C.A. § 6924(a), is qualified by a provision stating: “No private entity shall be precluded by reason of criteria established under paragraph (6) from the ownership or operation of facilities . . . where such entity can provide assurances of financial responsibility and continuity of operation consistent with the . . . risks.” This provision, unenlightened by the legislative history, appears to preclude EPA from conditioning TSD facility ownership or operation on such factors as absence of criminal record or general moral acceptability.

²See 40 C.F.R. §§ 264.143(a)-(g), 264.145(a)-(g). Regulations authorizing corporate guarantees—self-insurance—were issued in 1986. 51 Fed. Reg. 16422, 16448 (May 2, 1986). See 53 Fed. Reg. 33938 (Sept. 1, 1988) (final rule amending financial responsibility requirements for hazardous waste facilities, allowing few additional mechanisms to demonstrate financial responsibility).

³State and federal facilities, which are otherwise subject to permit requirements, are not subject to the financial responsibility requirements. See 40 C.F.R. § 264.150.

⁴40 C.F.R. § 264.149.

⁵40 C.F.R. § 264.149. *United States v. Power Eng’g Co.*, 191 F.3d 1224 (10th Cir. 1999) (holding that EPA can enforce a state’s financial assurance requirements without requiring compliance with the state’s permitting scheme), cert. denied, 529 U.S. 1086 (2000).

⁶40 C.F.R. § 264.148.

⁷See RCRA §§ 3004(a), 3004(v), 42 U.S.C.A. §§ 6924(a), 6924(v).

bodily injury or property damage.¹ Facilities too small to qualify as self-insurers or unable to shift liability to the state² must purchase insurance in specified amounts to cover both “sudden” and (for land disposal facilities) “nonsudden” accidental occurrences; this is unique as a regulatory device, and controversial.³ A brief historical discussion is necessary to put these requirements into perspective.

The insurance industry is a state-regulated industry. While there is vigorous competition among insurers, the regulated nature of the industry and the need to cooperate in reinsurance pools to cover very large risks have resulted in a certain amount of standardization of liability and other casualty insurance contracts. Thus, while individual insurers form their contracts to fit their own marketing needs, the variations tend not to affect the fundamental legal undertaking by the insurer and the language by which that undertaking is expressed.

Prior to 1966 most industrial liability insurance policies covered bodily injury or property damage caused “by accident.” The language was construed by a number of courts to provide coverage for claims based on the cumulative effect of prolonged exposure to a hazardous condition or substance. In 1966, the comprehensive general liability (CGL) policy used by American insurers was modified to reflect these decisions; in the revised policies, coverage was premised on an “occurrence,” which was defined to include continuous repeated exposure to conditions resulting in bodily injury or property damage.

In about 1970, the “pollution exclusion” began to appear in CGL policies. This provision excluded from coverage bodily injury or property damage resulting from the discharge, dispersal, escape, or release of pollutants into the environment, unless the event was “sudden and accidental.” Beginning around 1980, insureds began to litigate the applicability of the pollution exclusion clause to damage arising from the slow leaking of hazardous constituents from landfills and other areas where hazardous wastes are present. The pattern of decisions is not uniform. In some cases the courts have found the “sudden and accidental” language to be ambiguous and have construed the coverage liberally in favor of the insured or limited the language to situations in which the damage either was intended by the insured or could reasonably have been expected to result from the insured’s acts.⁴ In other cases, courts strictly interpreted the exclusion to preclude recovery for slow leaking

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¹See RCRA § 3004(t), 42 U.S.C.A. § 6924(t); 40 C.F.R. § 264.147; 46 Fed. Reg. 2802, 2847 (Jan. 12, 1981); 47 Fed. Reg. 16544, 16554 (Apr. 16, 1982); 53 Fed. Reg. 33938, 33950 (Sept. 1, 1988).

²See 40 C.F.R. § 264.150.

³See, e.g., Cheek, Risk-Spreaders or Risk Eliminators? An Insurer’s Perspective on the Liability and Financial Responsibility Provisions of RCRA and CERCLA, 2 Va. J. Nat. Resources L. 131 (1982); Meyer, Compensating Hazardous Waste Victims: RCRA Insurance Regulations and a Not So “Super” Fund, 11 Env’tl. L. 689 (1981).

⁴These courts reached their conclusions by finding the pollution exclusion to be ambiguous and looking to insurance company documents submitted to the insurance commission regarding the breadth of the pollution exclusion. See *Meridian Mut. Ins. Co. v. Kellman*, 197 F.3d 1178 (6th Cir. 1999) (an insurer is liable when the insured party suffers damages caused by a toxic substance that was applied when the insured was in the immediate vicinity and when the toxic substance was applied in a manner consistent with its intended use); *Morton Int’l, Inc. v. Gen. Accident Ins. Co.*, 629 A.2d 831 (N.J. 1993), cert. denied, 512 U.S. 1245 (1994) (insurer needs evidence of exceptional circumstances that objectively establishes an intent to cause harm); *Greenville County v. Ins. Reserve Fund*, 443 S.E.2d 552 (S.C. 1994); *Queen City Farms, Inc. v. Aetna Cas. & Sur. Co.*, 882 P.2d 703 (Wash. 1994); *Hecla Mining Co. v. New Hampshire Ins. Co.*, 811 P.2d 1083 (Colo. 1991); *Just v. Land Reclamation, Ltd.*, 456 N.W.2d 570 (Wis. 1990); *Bentz v. Mut. Fire, Marine & Inland Ins. Co.*, 575 A.2d 795 (Md. Ct. Spec. App. 1990); *Claussen v. Aetna Cas. & Sur. Co.*, 380 S.E.2d 686 (Ga. 1989).

of waste regardless of the insured's intent.⁵

The industry began to rewrite the CGL policies in 1984 to provide greater exclusion for pollution events. The standard CGL policies were rewritten by the Insurance Services Office (ISO) to exclude all pollution coverage from the basic coverage and provide coverage for sudden and accidental pollution events only for an additional premium. Pending acceptance of the new forms by state insurance regulators, a number of insurers began inserting restrictive endorsements on CGL policies excluding all coverage of pollution-related damages. Others have dramatically increased the premiums for the standard CGL coverage, or simply refused to write the coverage. Finally, some companies are seeking regulatory clearance to issue "claims-made" CGL policies.⁶

EPA defined the term "sudden accidental occurrence," for Subpart H purposes, as "an occurrence which is not continuous or repeated in nature."⁷ A "nonsudden accidental occurrence" is one that "takes place over time and involves continuous or repeated exposure."⁸

An occurrence is "accidental" if it "results in bodily injury or property damage neither expected nor intended by the insured."⁹ By specifically requiring coverage for both sudden and nonsudden occurrences, as defined, EPA prospectively avoids the problem presented by the CGL policy's pollution exclusion provision.¹⁰

By defining "nonsudden occurrence" as it does, EPA's nonbinding definition seems to attempt to address, albeit unsuccessfully, the complicated issue of at what point (for example, exposure, manifestation of symptoms, or other) the "occurrence" happens. Much recent insurance coverage litigation has involved the issue of which policy covers a claim of injury premised on latent disease. CGL policies are typically one-year contracts, and a facility may contract with a number of different insurers over time. In either the latent disease following chemical exposure scenario, or a situation in which a drinking water source is contaminated by leachate that escaped from an upgradient landfill years earlier, which policy covers the claim will depend upon how the phrase "damages . . . caused by an occurrence" is construed. A 1991 watershed decision by the United States Court of Appeals for the District of Columbia Circuit, *Independent Petrochem Corp. v. Aetna Casualty & Surety Co.*,¹¹ has established that the term "damages" under CGL policies includes environmental cleanup costs.

The typical CGL policy defines "occurrence" as an "accident, including injurious exposure to conditions, which results, during the policy period, in bodily injury or

⁵These courts found the pollution exclusion to be clear and unambiguous. Thus, there is no coverage for gradual pollution in these jurisdictions. See *Technicon Elec. Corp. v. Am. Homeowners Ass'n*, 544 N.Y.S.2d 531 (1989); *Waste Mgmt. of Carolinas, Inc. v. Peerless Ins. Co.*, 340 S.E.2d 374 (N.C. 1986); *Techalloy Co. v. Reliance Ins. Co.*, 487 A.2d 820 (Pa. Super. 1984).

⁶Under a claims-made policy, the coverage is triggered only when claims are made during the policy period, or any extension bought by the insured for an additional premium. The claims-made policy was developed to reduce the exposure from claims brought long after the occurrences on which they were based, and to make losses more predictable.

⁷40 C.F.R. § 264.141(g).

⁸40 C.F.R. § 264.141(g).

⁹40 C.F.R. § 264.141(g).

¹⁰It does not eliminate the problem, however, for older facilities previously covered by the 1970 version of the CGL policy. "Occurrences" traceable to those policy years will still be subject to the problem of interpretation outlined above. EPA also disclaims any binding effect for its definitions, stating that they are "not intended to limit their meanings in a way that conflicts with general insurance industry usage." 40 C.F.R. § 264.141(g).

¹¹*Independent Petrochem Corp. v. Aetna Cas. & Sur. Co.*, 944 F.2d 940 (D.C. Cir. 1991).

property damage neither expected nor intended from the standpoint of the insured.”¹² As in the judicial literature construing the application of statutes of limitation to latent diseases,¹³ courts construing the CGL policy in cases of latent disease following chemical exposure have divergently interpreted the time of occurrence of and consequent liability for the disease. Some courts have placed liability on the insurer covering the risk at the time of exposure (the “exposure rule”).¹⁴ Others have fixed liability at the point the symptoms became manifest, the point the diagnosis was made, or the date of death if the decedent died undiagnosed.¹⁵ Still others have swept into the coverage net both the policies on the risk from the point exposure began until it ended (or, in the case of an employee injury, until employment at the site(s) of exposure ended) and the policies in effect at the time of manifestation, on a sort of enterprise liability theory.¹⁶ There are other theories as well, including several holdings that the relevant occurrence happens at the point the exposure actually produces diseased tissue, whether or not the disease is diagnosable at that time.¹⁷

EPA’s nonbinding definition seems intended to fix the insurer liability to the entity on the risk at the time exposure or release occurs. Nevertheless, the CGL policies are not required to follow EPA’s language, and even if they were to do so, there is no guarantee that the courts will construe EPA’s language uniformly.¹⁸

Between 1970 and 1980, the insurance industry began to offer a new type of claims-made coverage tailored to environmental damage risks: environmental impairment liability (EIL) insurance. Initially, this coverage was only available for sudden releases of pollutants. EPA’s regulations produced a demand for EIL policies that provided coverage for nonsudden releases, and by 1981 the few excess or surplus lines companies¹⁹ writing such policies were joined by a number of the larger insurers. A reinsurance pool, the Pollution Liability Insurance Association, was formed.

The premiums for nonsudden occurrence EIL policies did not stabilize, however, and by 1985 several companies previously offering the coverage ceased offering it,

¹²EPA’s nonbinding definition inserts the words “continuous or repeated” before “exposure,” and deletes the phrase “during the policy period.” 40 C.F.R. § 264.141(g).

¹³*See, e.g.,* Harig v. Johns-Manville Prods. Corp., 394 A.2d 299 (Md. 1978) (discussing the evolution of the discovery rule).

¹⁴*Ins. Co. of N. Am. v. Forty-Eight Insulations, Inc.*, 633 F.2d 1212 (6th Cir. 1980), *clarified and aff’d on rehearing*, 657 F.2d 814 (6th Cir. 1981), *cert. denied*, 454 U.S. 1109 (1981). *Accord* Porter v. Am. Optical Corp., 641 F.2d 1128 (5th Cir. 1980), *cert. denied*, 454 U.S. 1109 (1981); *see also* Fireman’s Fund Ins. Co. v. Ex-Cell-O Corp., 702 F. Supp. 1317 (E.D. Mich. 1988) (applying Michigan law); Zurich Ins. v. Raymark Indus., Inc., 514 N.E.2d 150 (Ill. 1987).

¹⁵*Eagle-Picher Indus., Inc. v. Liberty Mut. Ins. Co.*, 523 F. Supp. 110 (D. Mass. 1981), *aff’d as modified*, 682 F.2d 12 (1st Cir. 1982); *see also* Metal Bank of Am., Inc. v. Liberty Mut. Ins. Co., 520 A.2d 493 (Pa. Super. 1987); *Mraz v. Canadian Universal Ins. Co.*, 804 F.2d 1325 (4th Cir. 1986).

¹⁶*See* Keene Corp. v. Ins. Co. of N. Am., 667 F.2d 1034, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20105 (D.C. Cir. 1981), *cert. denied*, 455 U.S. 1007 (1982); *Owens-Illinois, Inc. v. United Ins. Co.*, 650 A.2d 974 (N.J. 1994), superseded by statute as stated in *Farmers Mut. Fire Ins. Co. of Salem v. N.J. Property-Liability Ins. Guar. Ass’n*, 74 A.3d 860 (N.J. 2013); *Montrose Chem. Corp. of Cal. v. Admiral Ins. Co.*, 913 P.2d 878 (Cal. 1995).

¹⁷*Am. Home Prod. Corp. v. Liberty Mut. Ins. Co.*, 565 F. Supp. 1485 (S.D.N.Y. 1983); *Sandoz, Inc. v. Employer’s Liability Assurance Corp.*, 554 F. Supp. 257 (D.N.J. 1982); *Indus. Steel Container Co. v. Fireman’s Fund Ins. Co.*, 399 N.W.2d 156 (Minn. Ct. App. 1987); *Aetna Cas. & Sur. Co. v. Abbott Lab., Inc.*, 636 F. Supp. 546 (D. Conn. 1986) (applying Connecticut law).

¹⁸Insurance policy provisions are normally a matter of state law, since the insurance industry is state regulated. Federal courts construing policy language do so in diversity cases, applying state law.

¹⁹Excess and surplus lines are a designation that state insurance regulators give to insurance companies that provide insurance that is not readily available from companies licensed (“admitted”) to transact insurance business in the state.

and premiums rose dramatically. The industry's explanation for this is its concern about the potential ramifications of the Bhopal, India, gas leak, the high litigation costs of hazardous waste cleanup cases, and its concern that the pattern of court decisions construing the CGL policy to cover risks they had not anticipated will repeat itself with the EIL policies.

Unless a variance is obtained²⁰ from the EPA Regional Administrator, the liability limits required of TSD facility insurance are \$1 million per occurrence and \$2 million annual aggregate for sudden occurrences, and \$3 million per occurrence and \$6 million annual aggregate for nonsudden occurrences.²¹

A sufficiently large and solvent entity is permitted to be a self-insurer. It must satisfy the "financial test for liability coverage."²² A combination of insurance coverage and self-insurance is also permitted.

§ 14:59 Permit procedures and general provisions—General requirements for facility permits—Closure, postclosure, and corrective action requirements

All disposal facilities must comply with closure and postclosure requirements; storage facilities such as waste piles and surface impoundments, from which wastes are intended to be removed upon closure, need comply only with the closure requirements. Subpart G contains a general closure performance standard.¹ It also includes more specific closure and postclosure requirements applicable to TSD facilities.² Still more specific requirements appear in the performance standards for individual classes of facilities.³ The closure and postclosure provisions involve a public proceeding, and the application of long-term maintenance and security obligations.⁴

After the 1984 HSWA amendments, many facilities were unable or unwilling to meet the new provisions, to certify compliance with groundwater monitoring, and to meet financial responsibility requirements. As of January 1988, 956 of the 1,451 land disposal facilities were required to close.⁵ EPA and the states generally run behind schedule in closing violating facilities. For example, as of December 10, 1987, 645 of 1,161 closing facilities had approved closure plans while 204 had

²⁰40 C.F.R. § 264.147(c)-(d).

²¹40 C.F.R. § 264.147(a)-(b). EPA phased in the nonsudden occurrence liability insurance requirements, requiring larger facilities to have insurance in effect in 1982, and the smallest group by 1984. See 40 C.F.R. § 264.147(b)(4).

²²40 C.F.R. § 264.147(f). Several states require a more onerous test for self-insurance than EPA. See also Stever, *Law of Chemical Regulation and Hazardous Waste*.

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¹40 C.F.R. § 264.111. The standard is minimization of the need for further maintenance and minimization of future threats to health or the environment resulting from release of wastes.

²These are: (1) the adoption and approval by EPA of closure and postclosure plans, 40 C.F.R. §§ 264.112, 264.118; (2) specification of a closure timetable, 40 C.F.R. § 264.113; (3) preparation and filing of a survey plat with the local zoning or land use authority setting forth the postclosure restrictions on use of the property, 40 C.F.R. § 264.119; and (4) recording of an instrument of title setting forth the use restrictions, 40 C.F.R. § 264.120.

³Containers, 40 C.F.R. § 264.178; surface impoundments, 40 C.F.R. § 264.228; waste piles, 40 C.F.R. § 264.258; land treatment, 40 C.F.R. § 264.280; landfills, 40 C.F.R. § 264.310; and incinerators, 40 C.F.R. § 264.351.

⁴40 C.F.R. § 264.117.

⁵Stein, "An Environmental Perspective on the RCRA Program and Enforcement," ALI-ABA Course of Study, *Hazardous Waste, Superfund, and Toxic Substances*, Dec. 1-3, 1988, at 331. See Government Accounting Office Report, *Hazardous Waste: New Approach Needed to Manage the Resource Conservation and Recovery Act*, July 1988.

completed the closure process.⁶ Permit holders cannot walk away from the permit, but must achieve “clean closure”⁷ or obtain a post-closure permit as a hazardous waste landfill.⁸ EPA has proposed a rule to delay closure for land disposal units receiving only nonhazardous wastes that previously received hazardous wastes.⁹

The duration of the postclosure period established by EPA is thirty years following completion of closure,¹⁰ although the period may be either reduced or extended by EPA on the basis of the Agency’s perception of the degree of hazard posed by the unit.¹¹ The thirty-year benchmark is more or less arbitrary, since experience, particularly with landfills, has demonstrated that the possibility of release of waste may exist for a long time beyond that point. EPA’s adoption of the thirty-year period was a compromise, albeit a controversial one.¹²

As noted in the preceding sections, the permit holder must provide some form of assurance that the costs of closure and postclosure operation will be met.¹³

CERCLA originally provided a separate fund to finance any cleanup required after proper closure of a land disposal facility. This fund was designed to ease the burden of the long postclosure period, but the statute was poorly worded, and seemed only to apply if EPA had first made a determination that no significant hazard was present at the site after closure. It is not clear under what circumstances EPA could make such a certification, and there is accordingly some doubt how useful the present postclosure fund would be.¹⁴ In the 1986 Superfund reauthorization, the postclosure fund was suspended, pending a study by the Comptroller General and further action by Congress.

In *United Technologies Corp. v. EPA*,¹⁵ the United States Court of Appeals for the District of Columbia Circuit held that the corrective action requirements in RCRA applied to facilities seeking post-closure permits as well as those seeking operating permits.

Post-closure permits are required for any landfill, surface impoundment, waste

⁶Stein, “An Environmental Perspective on the RCRA Program and Enforcement,” ALI-ABA Course of Study, Hazardous Waste, Superfund, and Toxic Substances, Dec. 1–3, 1988, at 332. See Statement of Jugh Wessinger of the Government Accounting Office, testifying before the Subcommittee on Environment, Energy, and Natural Resources Committee on Government Operations of the U.S. House of Representatives on Dec. 15, 1987.

⁷See, e.g., 52 Fed. Reg. 8704, 8706 (Mar. 19, 1987).

⁸52 Fed. Reg. 45788, 45794–45796 (Dec. 1, 1987); see 53 Fed. Reg. 9944 (Mar. 28, 1988) (clarification of clean closure requirements for interim status surface impoundments); *In re Consolidated Land Disposal Reg. Litig.*, 938 F.2d 1386 (D.C. Cir. 1991).

⁹53 Fed. Reg. 20738 (June 6, 1988).

¹⁰40 C.F.R. § 264.117(a)(1).

¹¹40 C.F.R. § 264.117(a)(2).

¹²See 47 Fed. Reg. 32274, 32349 (July 26, 1982).

¹³See 40 C.F.R. § 264.145; see also § 14:57; see also CERCLA §§ 107(k), 111(j), 42 U.S.C.A. §§ 9607(k), 9611(j).

¹⁴The statute provides that all further liability for a site is shifted to the postclosure liability fund after it has been closed in accordance with federal RCRA requirements, and the

facility and the surrounding area have been monitored as required by such [RCRA] regulations and permit conditions for a period not to exceed five years after closure to demonstrate that there is no substantial likelihood that any migration offsite or release from confinement of any hazardous substance or other risk to public health or welfare will occur.

CERCLA § 107(k)(1)(B), 42 U.S.C.A. § 9607(k)(1)(B). The site owner or operator must notify EPA when the required monitoring is complete, and the Administrator then must make an affirmative determination that the statutory requirements were met. Since some eventual leaking of land disposal facilities is likely in most cases, it is not clear when or how the Administrator could allow the shift of liability to the fund.

¹⁵*United Technologies Corp. v. EPA*, 821 F.2d 714, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 21015 (D.C. Cir. 1987).

pile, or land treatment unit that received waste after July 26, 1982, or that closed after January 26, 1983. The term “closure” is defined to mean certification of closure according to 40 C.F.R. § 265.115. An exception to the post-closure permit requirement is provided for units that closed by removal or decontamination according to the requirements of §§ 264.228, 264.259, or 264.280(e). Without a permitting requirement, an owner or operator would be relieved of responsibility for complying with the RCRA § 3004(u) corrective action requirements.¹⁶

Surface impoundments, waste piles, land treatment, and landfill TSD facilities are required to comply with groundwater protection requirements for wastes contained in any “waste management unit” that “receives hazardous waste” after July 26, 1982. Inactive units that received wastes after July 26, 1982, units originally not required to upgrade their interim status groundwater monitoring programs to meet the more stringent Part 264 Subpart F requirements, were required to do so by a 1984 amendment to RCRA § 3005, which legislatively overruled EPA’s regulatory policy.¹⁷

Certain types of the regulated classes of entities were initially exempt from the Subpart F permit requirements.¹⁸ These included surface impoundments, waste piles, and landfill units that had chosen to employ double liners.¹⁹ Totally covered waste piles producing no runoff or leachate and single-lined waste piles located above the seasonal high water table and meeting certain performance standards were also exempt, as were some land treatment facilities whose treatment zone had been shown not to contain hazardous constituent levels above background levels to a statistically significant degree.²⁰ Finally, if, using conservative assumptions about the maximum rate of liquid migration, the TSD could demonstrate that there was no potential for migration to the “uppermost aquifer” during useful life and postclosure period, EPA could waive the Subpart F requirements.²¹

Congress nullified some of these blanket exemptions in 1984 by amending RCRA § 3004 to add a new subsection (p), which prohibits EPA’s exemptions of facilities not located above the seasonal high water table, double-lined facilities, and facilities employing liner inspection. Subsequent to 1984, EPA is allowed to exempt specific evidentiary findings of no impact.

Facilities subject to Subpart F must maintain their groundwater protection system at least during the active life of the unit. Facilities that have been required to undertake “detection monitoring”²² must do so throughout the postclosure period (usually thirty years), and those required to do “compliance monitoring”²³ or undertake “corrective action”²⁴ must continue for a “compliance period,” which can range from the number of years of active life (including prepermitted active years and the closure period) to an indefinite period until the applicable “ground-water

¹⁶52 Fed. Reg. 45788 (Dec. 1, 1987); see Quarles and Sheehan, “Recent RCRA Developments,” ALI-ABA Course of Study Hazardous Wastes, Superfund, and Toxic Substances, Dec. 1–3 (1988).

¹⁷See RCRA § 3005(e), (i), 42 U.S.C.A. § 6925(e), (i). Part 264-exempt entities are, of course, not required to comply with this or any other provision of Part 264. See 40 C.F.R. § 264.90(b)(1).

¹⁸40 C.F.R. § 264.90(b)(2); see also 40 C.F.R. § 264.221(c) (double-liner requirement for surface impoundments); 40 C.F.R. § 264.251(c) (double-liner requirement for waste piles); 40 C.F.R. § 264.301(c) (double-liner requirement for landfills).

¹⁹40 C.F.R. §§ 264.90(b)(2), 264.250(c), 264.253.

²⁰40 C.F.R. § 264.90(b)(3).

²¹40 C.F.R. § 264.90(b)(4).

²²See § 14:120, notes 1–9 and accompanying text. See 53 Fed. Reg. 28160 (July 26, 1988) (proposed amendments to Subpart F groundwater monitoring requirements).

²³53 Fed. Reg. 28160 (July 26, 1988).

²⁴53 Fed. Reg. 28160 (July 26, 1988).

protection standard” has not been exceeded for three consecutive years.²⁵

The permits of facilities at which the groundwater has been contaminated by any hazardous constituents attributable to a regulated unit will also contain: (1) the location where monitoring samples must be taken and at which the facility’s “groundwater protection standard” applies;²⁶ (2) the hazardous constituents for which the facility must monitor;²⁷ (3) the “concentration limits” applicable to the hazardous constituents for which the facility must monitor;²⁸ and (4) other groundwater protection requirements. Normally the “concentration limits” will be background levels determined by prepermit upgradient well sampling and analysis, although EPA has established specific “maximum concentration” limits for a list of fourteen heavy metals and pesticides, which will apply in lieu of a lesser background concentration.²⁹ EPA’s (or the state’s) permit writer may also set “alternate concentration limits,” based on regulatory criteria, that are greater than background levels but do not “pose a substantial present or potential hazard to human health or the environment.”³⁰

One of the criteria upon which alternative concentration limits may be based is the “quantity of groundwater and the direction of groundwater flow.”³¹ It thus appears that dilution is a consideration relevant to groundwater contamination under RCRA, although it has largely been prohibited by Congress from being considered in connection with standard setting for surface water pollution.³²

Facilities at which hazardous constituents have not been found in the uppermost aquifer are required only to perform “detection monitoring,”³³ and EPA maintains a list of constituents from which the permit writer selects as providing a “reliable indication of the presence of hazardous constituents in the groundwater.”³⁴ At all times EPA’s general groundwater monitoring requirements must be followed.³⁵ If at any point a statistically significant increase in any of the parameters or constituents over background levels is found, the entity is required immediately to sample all groundwater monitoring wells for the presence of any of the entire list of hazardous constituents listed in Appendix VIII of Part 261.

Once hazardous constituents are detected in the groundwater, a facility that had

²⁵See 40 C.F.R. §§ 264.90(c), 264.96. EPA amended 40 C.F.R. § 90(a)-(b) on July 15, 1985, implementing the 1984 amendment’s prohibitions. 50 Fed. Reg. 28702, 28746 to 28747 (July 15, 1985).

²⁶This location is established at a vertical surface at the hydraulically downgradient limit of the area that extends into the uppermost aquifer underlying the regulated units. 40 C.F.R. § 264.95(a).

²⁷40 C.F.R. § 264.93(a). These can range from a few substances to the entire Part 261 Appendix VIII list, depending upon (a) which constituents have been identified in the aquifer above background in pre-permit sampling, and (b) which constituents are being disposed of that EPA considers likely to find their way into the groundwater. For criteria used to exclude constituents from monitoring, see 40 C.F.R. § 264.93(b)-(c).

²⁸40 C.F.R. § 264.94. Concentration limits are usually expressed in milligrams per liter.

²⁹40 C.F.R. § 264.94(a)(2).

³⁰40 C.F.R. § 264.94(a)(3), (b)-(c).

³¹40 C.F.R. § 264.94(b)(1)(iii).

³²See *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1041–44, 9 *Envtl. L. Rep.* (Envtl. L. Inst.) 20284, 20296–98 (D.C. Cir. 1979); Clean Water Act § 301(h), 33 U.S.C.A. § 1311(h) (limited exemption for dilution by ocean waters applicable to municipal discharges.)

³³40 C.F.R. § 264.91(a)(4).

³⁴40 C.F.R. § 264.98. The indicator parameters include specific conductance, total organic carbon, and total organic halogens.

³⁵40 C.F.R. § 264.98(a). Subsequent paragraphs of the regulation establish the ground rules for taking samples and determining the statistical significance of variations from background, and for notifying EPA and taking further action if a statistically significant increase in the indicator parameters or constituents is found.

previously been required only to do detection monitoring will, by permit amendment, be required to escalate to the next stage: “compliance monitoring.”³⁶ The critical factors in compliance monitoring are: (1) the point of compliance; (2) the hazardous constituents that must be monitored for; and (3) the “ground water protection standard,” which is one of the trigger levels of concentration that initiates the facility’s obligation to undertake the next stage, “corrective action.”³⁷

A compliance monitoring program generally involves drilling a number of monitoring wells at and downgradient of the active portion of the facility³⁸ and sampling for exceeding of the “groundwater protection standard” established for the hazardous constituents for which monitoring is required.³⁹

Once the groundwater protection standard is exceeded, a corrective action program will inevitably be imposed on the facility unless it can be shown that the levels are a result of erroneous “sampling, analysis or evaluation,” or are caused by “a source other than a regulated unit.”⁴⁰

The 1984 HSWA provisions amending RCRA § 3004(u) mandated that Part B permits for solid waste management units require corrective action for all releases of hazardous wastes or constituents from any solid waste management unit at a TSD facility regardless of the time and the waste placed in the unit.⁴¹ Presently, corrective action requirements are codified at 40 C.F.R. §§ 264.100 and 264.101. On July 27, 1990, EPA proposed the substantive provisions for corrective action, which would become a new Subpart S to the RCRA 40 C.F.R. Part 264 regulations.⁴² The proposed regulation defined requirements for conducting remedial investigations, evaluating potential remedies, and selecting and implementing remedies at RCRA facilities. EPA went on to codify provisions of the proposed regulation related to Correction Action Management Units (CAMUs) in 1993.⁴³ However, EPA withdrew most of the remaining proposal in 1999, based on its assessment that the regulations were not necessary to carry out the corrective action program and that finalizing the final rule would disrupt the state programs authorized to carry out the program at that time.⁴⁴ After years of negotiations and legal challenges to the CAMU rules, in 2002 EPA finally promulgated amendments to the rules, which defined the types of wastes eligible for placement in CAMUs and which established

³⁶40 C.F.R. §§ 264.98(h), 264.91(a)(1), 264.99.

³⁷40 C.F.R. §§ 264.91(a)(2), 264.100.

³⁸See 56 Fed. Reg. 66365 (Dec. 23, 1991) for guidance and amended regulations on the placement of groundwater monitoring wells.

³⁹40 C.F.R. § 264.99(a)-(b). The “ground water protection standards” are somewhat ambiguously defined in 40 C.F.R. § 264.92 as “conditions . . . designed to ensure that hazardous constituents . . . entering the ground water . . . do not exceed the concentration limits in the uppermost aquifer underlying the area beyond the point of compliance.” The term used in § 264.99, however, appears to mean the concentration limits that must not be exceeded at the point of compliance, and other limits and monitoring points designed to detect migration of contaminated groundwater.

⁴⁰40 C.F.R. § 264.99(i)-(j); see § 14:126 (concerning the nature of corrective action). Leachate collected from a listed waste is a hazardous waste. *Al Tech Specialty Steel, Inc. v. EPA*, 846 F.2d 158, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20867 (2d Cir. 1988).

⁴¹In *re Rohm & Haas Co.*, RCRA Appeal No. 98-2, No. TND058660390, 2000 WL 1481387 (Env’tl. App. Bd. Oct. 5, 2000) (noting that RCRA § 3004(u) does not require EPA to institute permit modification procedures or issue a new permit each time EPA wishes to impose corrective action). Section 3004(v) provides for corrective action beyond facility boundaries to remedy releases. This authority modifies the prior strategy for abating releases at facility boundaries. See 40 C.F.R. § 264.100(e)(2), § 264.101(c).

⁴²55 Fed. Reg. 30798 (July 27, 1990). The corrective provisions of the statute are codified. See 50 Fed. Reg. 28702 (July 15, 1985); 52 Fed. Reg. 45788 (Dec. 1, 1987).

⁴³58 Fed. Reg. 8658 (Feb. 16, 1993).

⁴⁴64 Fed. Reg. 54604 (Oct. 7, 1999).

more detailed standards and requirements for CAMU application.⁴⁵

Under RCRA § 3008(h), corrective action orders can provide authority for Superfund-type cleanup at interim status facilities or pre-HSWA permitted facilities where hazardous wastes are released.⁴⁶ Section 3008(h) applies to facilities that do not have § 3004(u) permits, or which have releases not being addressed under § 3004(u) programs. The provision applies to the entire facility, not just the solid waste management units.

§ 14:60 Specific facilities

In addition to the general requirements for all permitted facilities, discussed above, EPA sets requirements for categories of facilities and for certain functional types of equipment used at facilities. In the following subsections we will summarize the major issues in land disposal requirements, which are the focus of the statute's concern, and provide a brief summary of the other categorical requirements. Regulations in these areas are highly detailed, subject to frequent revision, and therefore should be carefully consulted.

§ 14:61 Specific facilities—Land disposal facilities

RCRA's principal purpose is to protect groundwater from improper disposal of hazardous wastes on land;¹ the standards for land disposal facilities therefore define the statute's purpose in precise terms.

EPA did not succeed in its early efforts to supply this precision; after several false starts, the Agency decided to accept an approach which provided for continuing land disposal of most hazardous wastes,² which Congress very bluntly rejected in 1984.³

The central issue is the leaking of liquids from landfills. Hazardous constituents in wastes stay pretty much where they are put, so long as they remain solid. If a landfill is thought of as a source of pollution, most of its emissions are liquids that seep or leak out of the landfill.

To prevent pollution from a landfill, therefore, one keeps liquids—rainfall, liquid wastes, surface water or groundwater—from entering in the first place, or from leaking out, once they are in. EPA began by setting up a system of controls on liquids placed in landfills and performance standards for the landfills themselves, which relied heavily on the notion of a liner and leachate collection system that would capture leaks, and a monitoring system to detect failures in the liner.

By 1984, there was some evidence, and a lot of feeling, that EPA's regulations would delay but would not prevent the eventual seepage of hazardous wastes out of most landfills. In the eastern part of the United States, rainfall and groundwater are ubiquitous, and water is a near-universal solvent; it seems almost impossible to ensure that landfills will remain dry, or that they will not leak at any time in future decades. In the western part of the United States, where there are many dry locations, it had long been common practice to dispose of hazardous liquids, especially solvents, in landfills; these, too, could be expected to leak.

In the 1984 HSWA, Congress addressed these questions in some detail. It greatly

⁴⁵67 Fed. Reg. 2962 (Jan. 22, 2002).

⁴⁶Hearing procedures were established at 53 Fed. Reg. 12256 (Apr. 13, 1987) (codified at 40 C.F.R. Part 24).

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¹See § 14:7, 14:8; see 54 Fed. Reg. 41566 (Oct. 10, 1989) (EPA notice solicits comments on interpretation of the term "land disposal").

²See 47 Fed. Reg. 32274, 32349 (July 26, 1982).

³See HSWA, Pub. L. No. 98-616, 98 Stat. 3221.

tightened the rules for disposal of liquids in landfills; set more stringent performance requirements for the landfills themselves to prevent leaking; and finally, acknowledging that these measures were at best temporary, created a staged ban on continued landfilling of most hazardous substances.⁴

§ 14:62 Specific facilities—Land disposal facilities—Liquids in landfills

EPA had prohibited the disposal of liquid hazardous wastes in landfills, and had prohibited anyone from pouring nonhazardous liquids into a hazardous-waste landfill unless—and this was rarely the case for existing landfills—the facility was protected by an impermeable liner. The Agency had allowed some limited disposal of containers of liquids in hazardous waste landfills, but only if the liquid was absorbed into some material.¹ Since containers eventually break or rust, and absorbent materials release their liquids when crushed or compacted, these regulations would have allowed some liquids to be released into landfills, and eventually to leak out of them. The 1984 Amendments required EPA to modify these regulations, to prohibit even the landfilling of absorbent materials in containers if the materials can release liquids when crushed or degraded.² EPA's rules had also allowed an occasional exception to the bans on containerized liquids; the statute now requires that such exceptions be made only for nonhazardous liquids, and only where there is “no present risk” of contaminating soil or groundwater.³

§ 14:63 Specific facilities—Land disposal facilities—Performance requirements

Early in the RCRA program, EPA had tried to require landfill designs that would not usually leak, and in which leaks could be detected and corrected when they did occur during the lifetime of the facility. This approach was embodied in the Agency's requirement that a landfill (or new surface impoundment for storing liquids) be equipped with an impermeable liner, leachate collection system, and a monitoring system to detect leaks.¹ Evidence had begun to accumulate, however, that the required liners almost always leaked. The 1984 HSWA sharply tightened the Agency's requirements. Section 3004(o) is titled “Minimum Technological Requirements,” and ties the performance requirements for landfills to the progress of advancing technology. It also sets initial requirements at levels Congress evidently believed could be attained by the best technology already available.²

As in other environmental protection programs, the technology-forcing require-

⁴EPA codified some of the more important short-term changes in a discursive *Federal Register* notice on July 15, 1985, 50 Fed. Reg. 28702 (July 15, 1985), and proposed further codifications on March 28, 1986, 51 Fed. Reg. 10706 (Mar. 28, 1986). The long discussions in these notices, which will not appear in the codified regulations, are a valuable guide to the Agency's understanding of the law. On January 14, 1986, EPA proposed new land disposal facility regulations, implementing the new presumptions and prohibitions against land disposal. 51 Fed. Reg. 1602 (Jan. 14, 1986). This proposal was heavily criticized and was greatly modified. See 51 Fed. Reg. 40572 (Nov. 6, 1986); § 14:64.

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¹See 40 C.F.R. § 264.314 (1985).

²See RCRA § 3004(c), 42 U.S.C.A. § 6924(c); H.R. Rep. No. 1133, 99th Cong., 1st Sess. 84 (1984).

³See RCRA § 3004(c), 42 U.S.C.A. § 6924(c); H.R. Rep. No. 1133, 99th Cong., 1st Sess. 84 (1984).

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¹See 40 C.F.R. § 264.301. On January 29, 1992, EPA issued a final rule on standards for leachate collection and removal systems, leak detection systems, construction quality assurance programs, and synthetic and clay liners for owners and operators of new or replacement hazardous waste disposal facilities. 57 Fed. Reg. 3462 (Jan. 29, 1992).

²See 56 Fed. Reg. 50978 (Oct. 9, 1991) (final rule establishing municipal landfill standards); see also *Hazardous Waste Treatment Council v. EPA*, 886 F.2d 355, 19 Env'tl. L. Rep. (Env'tl. L. Inst.)

ments are primarily imposed on new facilities (but also on existing storage impoundments), which must have at least two liners, with a system for collecting liquid that seeps into the space above and between the liners and monitoring of groundwater for leaks.³

The Amendments translate these requirements into performance-based design standards; the liners may be waived in various circumstances when equivalent performance can be shown, or where they are not needed. A generic standard is written into the statute, as a way of providing an effective regulation until EPA gets around to promulgating implementing rules. This unusual, Congressionally-determined design standard is written in the form of a permeability limit for the bottom-most liner of a landfill: Bottom liners, which determine the rate of release of any liquids from the facility, must have permeability of no more than 1×10^{-7} centimeters per second.⁴

§ 14:64 Specific facilities—Land disposal facilities—Land disposal restrictions

In 1984, Congress adopted an overlay of restrictions on land disposal of hazardous wastes.¹ Until then, RCRA had only directed that hazardous wastes be channeled to disposal facilities in compliance with the statute's performance standards. The 1984 amendments, however, established very plainly that land disposal *per se* was disfavored:

[R]eliance on land disposal should be minimized or eliminated, and land disposal, particularly landfill and surface impoundment, should be the least favored method for managing hazardous wastes.²

No longer trusting EPA to implement this policy without firm direction, Congress prohibited land disposal of hazardous wastes on a schedule which automatically takes effect unless EPA adopts regulations granting one of the narrow statutory variances or extensions.³

There are two escape routes from the land disposal ban. First, the wastes may be treated before disposal. If hazardous wastes are first treated by the best available and demonstrated treatment technology, the residue remaining after treatment may be disposed on land.⁴

The second escape from the ban is an exemption procedure. On petition, EPA may allow continued land disposal of a hazardous waste if the Administrator finds that the prohibition is *not* required to protect human health and the environment.⁵ To make such a finding the Administrator must first determine

to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain

21398 (D.C. Cir. 1989) (technology-based standards for hazardous solvents and dioxins are reasonable).

³RCRA § 3004(o)(1), 42 U.S.C.A. § 6924(o)(1).

⁴RCRA § 3004(o)(5)(B), 42 U.S.C.A. § 6924(o)(5)(B).

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¹See HSWA, Pub. L. No. 98-616, 98 Stat. 3221 (extensively amending RCRA § 3004, 42 U.S.C.A. § 6924). In the following discussion we will cite only the current statute.

²RCRA § 1002(b)(7), 42 U.S.C.A. § 6901(b)(7).

³Mobil Oil Corp. v. EPA, 871 F.2d 149, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20847 (D.C. Cir. 1989) (EPA's interpretation of variance provisions upheld as reasonable. Each disposal unit or facility must comply to receive variance waste).

⁴See § 14:67.

⁵See § 14:69.

hazardous.⁶

The schedule for implementing the land disposal prohibition for wastes which do not escape through either route is set out in some detail in the statute, and is discussed below.⁷ EPA may grant limited extensions of these deadlines.⁸

When the Superfund statute was amended and reauthorized in 1986,⁹ a similar but less detailed provision favoring treatment over land disposal was adopted. When choosing the remedy for a site under Superfund, EPA must favor on-site treatment. Disposal at the site is discouraged, and wastes shipped for disposal off site are subject to RCRA requirements, including the restrictions on land disposal.¹⁰

§ 14:65 Specific facilities—Land disposal facilities—Land disposal restrictions—Framework of regulations

On January 14, 1986, the Agency proposed a regulatory framework implementing the new land disposal restrictions.¹ The proposal was not a success.

The statute provided two principal routes by which a hazardous waste could escape the land disposal prohibition. First, interested persons could petition for an exemption based on a finding by EPA that the prohibition was not needed to protect health and the environment. Second, EPA could establish standards for prior treatment of the waste, and after such treatment the residue could be disposed on land.

The Agency had devised a “screening model” to use in making these two related determinations.² The screening model was an effort to set risk-based groundwater quality standards. The model would predict the concentration of hazardous chemicals that would migrate through groundwater under usual conditions, if a land disposal facility failed to contain it. When wastes were so dilute or immobile that the model predicted no significant risk from migration of the wastes, EPA proposed to allow land disposal. If wastes passed the screening model they would be eligible for exemption, and if they did not, treatment would have to achieve the screening-model levels, if adequate technology were available.

EPA also proposed to allow land disposal of wastes treated by the best available, demonstrated technology, even when the criteria of its screening model would not be met;³ the environmental quality standards implicit in the screening model were only a goal to be achieved by advancing technology, but which never need be exceeded.

Finally, EPA proposed that treatment methods that created risks greater than the risks permitted by the screening model for land disposal would not be accepted as “available” treatment technology.⁴

⁶RCRA § 3004(d)(1), 42 U.S.C.A. § 6924(d)(1).

⁷See § 14:66.

⁸See § 14:69.

⁹See SARA, Pub. L. No. 99-499, 100 Stat. 1613.

¹⁰See § 14:123. The land disposal restrictions did not apply to Superfund response and RCRA corrective action wastes until November 8, 1988. See § 14:66.

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¹51 Fed. Reg. 1602 (Jan. 14, 1986).

²51 Fed. Reg. 1602, 1624 to 1676 (Jan. 14, 1986).

³51 Fed. Reg. 1602, 1676 to 1680 (Jan. 14, 1986); see Hazardous Waste Treatment Council, Inc. v. EPA, 886 F.2d 355, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 21398 (D.C. Cir. 1989).

⁴51 Fed. Reg. 1602, 1680 to 1690 (Jan. 14, 1986).

This proposal brought down a rain of fiery criticism.⁵ First, several members of Congress objected; the statute plainly required a prohibition of land disposal except where the Agency found there would be “no migration” from the site.⁶ EPA had converted this to a risk-based environmental quality standard in its proposed rules, while the statute seemed to require a flat prohibition. Second, the Agency had proposed not to require even available treatment when the screening model showed it would not be needed to meet the risk-based standards.⁷

On November 7, 1986, one day before the statute’s first “hammer” provisions would have taken effect, EPA published its final regulations,⁸ and abandoned the screening model for the time being. Instead, the regulations allowed exemptions only where a petitioner could show that there would be “no migration” of land disposed wastes. The Agency said it expected to grant few exemptions.⁹

Treatment standards are based on the technology found to be demonstrated and available, and treatment is required, regardless of the degree of risk which remains.¹⁰ However, treatment technology which causes risks greater than those of land disposal are not considered “available.”¹¹

EPA abandoned its risk-based approach only grudgingly, and announced that it would consider using the screening model at another stage in the hazardous waste regulation program—perhaps in the process of listing wastes as hazardous.¹²

§ 14:66 Specific facilities—Land disposal facilities—Land disposal restrictions—Schedule of restrictions

The statute sets up categories of wastes and for each category sets a date on which the land disposal prohibition becomes effective.¹ EPA’s regulations establishing treatment standards for each category of wastes must be effective on the same date.² If EPA’s regulations are delayed, in each case the land disposal prohibition was to effect on the statutory date. The regulations were promulgated in three separate rules. The first set of the land ban rules was promulgated in August 1988³ and the next set was promulgated in June 1989.⁴ The last set of the land ban rules was issued on June 1, 1990.⁵

§ 14:67 Specific facilities—Land disposal facilities—Land disposal restrictions—Treatment standards

⁵The Agency received comments arguing “strongly” against use of the screening model from eleven members of Congress. *See* 51 Fed. Reg. 40572, 40578 (Nov. 7, 1986).

⁶*See, e.g.,* Letter from Rep. Dennis E. Eckart to EPA Administrator Lee A. Thomas, January 13, 1986.

⁷*See* 51 Fed. Reg. 40572, 40578 (Nov. 7, 1986).

⁸*See* 51 Fed. Reg. 40572 (Nov. 7, 1986).

⁹51 Fed. Reg. 40572, 40578 (Nov. 7, 1986).

¹⁰51 Fed. Reg. 40572, 40588, 40638 (Nov. 7, 1986) (codified at 40 C.F.R. Part 268, Subpart D); *see* § 14:67.

¹¹*See* 51 Fed. Reg. 40572, 40592 (Nov. 7, 1986). The comparative risk methodology is that described in the Agency’s January 14, 1986, proposal. *See* 51 Fed. Reg. 1602, 1680 to 1690 (Jan. 14, 1986).

¹²*See* 51 Fed. Reg. 40572, 40578 (Nov. 7, 1986).

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¹*See* RCRA § 3004(d)-(g), 42 U.S.C.A. § 6924(d)-(g).

²*See* RCRA § 3004(m), 42 U.S.C.A. § 6924(m).

³53 Fed. Reg. 31138 (Aug. 17, 1988); 40 C.F.R. § 268; *see also* 54 Fed. Reg. 36967 (Sept. 6, 1989) (EPA corrects first set of land ban rules).

⁴54 Fed. Reg. 26594 (June 23, 1989).

⁵55 Fed. Reg. 22520 (June 1, 1990).

Wastes treated with the best demonstrated, available treatment technology (BDAT) are exempt from the land disposal prohibition.¹ BDAT standards are technology-based performance standards, similar in some ways to BAT standards for toxic discharges under the Clean Water Act.² The Agency has authority, however, to specify actual treatment methods rather than performance standards.³

In its first set of regulations, EPA measured performance solely by a Toxicity Characteristic Leaching Procedure (TCLP), which measures the concentration of hazardous constituents in a characteristic landfill leachate.⁴ Treatment standards are therefore written in units of concentration (as are most Clean Water Act effluent limits and Clean Air Act emission limits). Consistent with its policy under those other statutes, EPA forbids dilution as a treatment method.⁵ EPA prohibits generators from diluting their wastes before disposal to avoid the land disposal prohibition and expressly removes dilution from the acceptable methods of treatment.⁶

Standards for BDAT are promulgated by EPA at Part 268, Subpart D of its RCRA regulations for particular wastes.

Variances from treatment standards may be obtained for wastes with characteristics that do not allow treatment to the stated standard.⁷

§ 14:68 Specific facilities—Land disposal facilities—Land disposal restrictions—Comparative risk

An innovation of the BDAT rules is the concept of comparative risk. A treatment technology will not be considered “available” if the risks to health and the environment from the discharges of such treatment exceed the risks of untreated land disposal.¹ This provision will become more meaningful when EPA adopts rules concerning air emissions. Tank treatments and incineration, the most common methods of treatment, both may have significant air emissions.

§ 14:69 Specific facilities—Land disposal facilities—Land disposal restrictions—Exemptions and variances

On petition by any interested party, EPA may grant an exemption from the land

[Section 14:67]

¹See RCRA § 3004(m), 42 U.S.C.A. § 6924(m).

²BDAT standards are uniform, technology-based performance standards, as are Best Available Technology (BAT) standards under the Clean Water Act. *See* 51 Fed. Reg. 40572, 40588 (Nov. 7, 1986); § 14:76; § 14:104. EPA distinguishes them from BAT, however. BDAT must have been demonstrated in-use, while BAT may be based on bench or pilot-scale technology. 51 Fed. Reg. 40572, 40588 (1986). EPA also performs a comparative risk assessment before determining that a technology is “available” for hazardous waste treatment, but no comparative risk assessment is performed under the Clean Water Act.

³EPA may require either “levels” or “methods” of treatment. RCRA § 3004(m), 42 U.S.C.A. § 6924(m). Even when a method is promulgated, however, EPA apparently plans to allow alternative methods to be used on a demonstration of equivalent performance. *See* 51 Fed. Reg. 40572, 40642 (Nov. 7, 1986) (codified at 40 C.F.R. § 268.42(b)).

⁴*See* 51 Fed. Reg. 40572, 40642 (Nov. 7, 1986) (codified at 40 C.F.R. Part 268, Subpart D).

⁵*See* 51 Fed. Reg. 40572, 40592 (Nov. 7, 1986); *see also* § 14:21 (general policy against dilution as method of pollution control).

⁶*See* 51 Fed. Reg. 40572, 40639 to 40641 (Nov. 7, 1986) (codified at 40 C.F.R. §§ 268.3, 268.7).

⁷51 Fed. Reg. 40572, 40642 (Nov. 7, 1986) (codified at 40 C.F.R. § 268.44).

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¹*See* 51 Fed. Reg. 40572, 40592 (Nov. 7, 1986). The comparative risk assessment methodology is set out in detail in EPA’s January 14, 1986, proposal. *See* 51 Fed. Reg. 1602, 1680 to 1690 (Jan. 14, 1986).

disposal prohibition for any method of land disposal of hazardous waste.¹ The petitioner must demonstrate that the prohibition is not necessary to protect health or the environment, for as long as the waste remains hazardous, taking into account long-range uncertainties, the goals of proper waste management, and the “persistence, toxicity, mobility and propensity to bioaccumulate” of the wastes which are the subject of the petition.² The petition must include a demonstration,

to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous.³

Although generic petitions are authorized, as a practical matter petitions for exemption must be filed on a site-specific basis. EPA expects few petitions will be granted.⁴ The Agency may also grant exemptions for certain surface impoundments used to treat wastes.⁵

The statute also authorizes EPA to grant generic extensions in deadlines for land disposal prohibitions.⁶ The extensions in time, called “variances,” may not exceed two years. The Agency also may grant site-specific extensions of up to one year.⁷ During the period of the variance, some additional restrictions are imposed on land disposal. Wastes for which the variance has been granted must be disposed of in facilities which meet the minimum technological requirements for new land disposal facilities;⁸ wastes subject to site-specific variances may not be disposed even in such facilities unless there is no practical alternative open to the generator.⁹

Finally, the Agency may grant variances from treatment standards. These resemble the “fundamentally different factor” variances granted under the Clean Water Act. They do not exempt a waste from treatment, but establish an alternate treatment standard when a petitioner shows that the uniform national standard cannot be met for a particular waste.¹⁰

§ 14:70 Specific facilities—Injection well disposal: Underground injection control (UIC)¹

[Section 14:69]

¹See RCRA § 3004(d)(1), (e)(1), (g)(5), 42 U.S.C.A. § 6924(d)(1), (e)(1), (g)(5); *cf.* RCRA § 3004(f)(2), 42 U.S.C.A. § 6924(f)(2) (determination, on same factors, that deep-well injection need not be prohibited).

²RCRA § 3004(d)(1), (e)(1), (g)(5), 42 U.S.C.A. § 6924(d)(1), (e)(1), (g)(5); *cf.* RCRA § 3004(f)(2), 42 U.S.C.A. § 6924(f)(2).

³See, *e.g.*, RCRA § 3004(d)(1), 42 U.S.C.A. § 6924(d)(1); *see* 40 C.F.R. Part 268.

⁴See 51 Fed. Reg. 40572, 40578, 40582 (Nov. 7, 1986). The regulation governing these petitions asks for site-specific data, including a description of the disposal site. *See* 51 Fed. Reg. 40572, 40640 (Nov. 7, 1986) (codified at 40 C.F.R. § 268.6).

⁵See 51 Fed. Reg. 40572, 40639 (Nov. 7, 1986) (codified at 40 C.F.R. § 268.4).

⁶See RCRA § 3004(h), 42 U.S.C.A. § 6924(h).

⁷RCRA § 3004(h), 42 U.S.C.A. § 6924(h); *see* 51 Fed. Reg. 40572, 40639 (Nov. 7, 1986) (codified at 40 C.F.R. § 268.5).

⁸See RCRA § 3004(h), 42 U.S.C.A. § 6924(h); 51 Fed. Reg. 40572, 40641 to 40642 (Nov. 7, 1986) (codified at 40 C.F.R. §§ 268.30(b), 268.31(c)).

⁹See RCRA § 3004(h)(2), 42 U.S.C.A. § 6924(h)(2); 51 Fed. Reg. 40572, 40639 (Nov. 7, 1986) (codified at 40 C.F.R. § 268.5).

¹⁰51 Fed. Reg. 40642 (Nov. 7, 1986) (codified at 40 C.F.R. § 268.44).

[Section 14:70]

¹By Donald W. Stever.

Part C of the Safe Drinking Water Act² establishes a program for regulating deep-well injection of wastes, called the Underground Injection Control (UIC) program. The disposal of wastes, particularly petroleum extraction wastes, by injecting them into deep “dry” wells, is a relatively common practice, particularly in the Southwest. As the hazardous waste land disposal industry began to come under regulatory scrutiny in the 1970s, disposal of hazardous wastes into wells began to increase. Migration of contaminants injected into injection wells is the concern of the UIC provisions.

There is an obvious interrelationship between the thrust of the RCRA regulatory program and the UIC program. Indeed, though the two programs are administered by different subparts of EPA the injection of hazardous wastes has come to be considered more of a hazardous waste regulatory issue than a drinking water regulation issue. Injection wells are land disposal facilities and require a RCRA permit. However, SDWA permits are considered generically to be RCRA permits “by rule.”³

EPA maintains four sets of UIC regulations: (1) general criteria and performance standards for injection wells, which form a national regulatory floor; (2) standards and procedures for approval of state UIC programs;⁴ (3) standards and related provisions from state UIC programs that have been approved in whole or in part by EPA;⁵ and (4) procedural and substantive permit requirements for injection wells regulated directly by EPA in those states whose UIC program elements for that class of well have not been approved by EPA.⁶

EPA’s Part 146 regulations divide the universe of injection wells into six categories. Class I wells are those used by hazardous waste generators or owner/operators of hazardous waste TSD facilities, as those entities are defined in the RCRA regulations,⁷ and other industrial and municipal injection wells.⁸ Class II wells are those used by the petroleum industry in connection with conventional oil and gas extraction.⁹ Class III wells are those used in the mining and power generation (including geothermal) industries.¹⁰ Class IV wells are hazardous waste disposal wells in which hazardous or radioactive waste is disposed of above, within, or

²42 U.S.C.A. §§ 300h to 300h-4.

³See 40 C.F.R. § 270.60(b).

⁴40 C.F.R. Part § 145; see 48 Fed. Reg. 14146 (Apr. 1, 1983); 48 Fed. Reg. 39611 (Sept. 1, 1983).

⁵40 C.F.R. Part 147; see 49 Fed. Reg. 20138, 20197 (May 11, 1984). These regulations are amended frequently to reflect additions, deletions, or modifications to the state program provisions. They resemble EPA’s State Implementation Plan listing under the Clean Air Act. See 40 C.F.R. Part 52.

⁶40 C.F.R. Parts 144, 146, 147. Permit procedures under 40 C.F.R. Part 124 are also applicable. EPA’s failure to promulgate federal UIC permit requirements for states not having primary enforcement authority was the subject of *National Wildlife Fed’n v. Ruckelshaus*, C.A. No. 83-JM-1333 (D. Colo. Dec. 22, 1983). A consent decree, entered on December 22, 1983, resulted in the issuance of a number of federal UIC permit programs. See 49 Fed. Reg. 45292 (Nov. 15, 1984).

⁷EPA’s classification regulation, 40 C.F.R. § 146.5, defines Class I wells to include only wells where the waste was injected “beneath the lowermost formation containing, within one quarter (1/4) mile of the well bore, an underground source of drinking water.” 40 C.F.R. § 146.5(a)(1). Wells injecting waste into, within, or above such a formation are Class IV wells. See 40 C.F.R. § 146.5(d)(1). EPA regulated Class I wells. Class IV wells were not regulated until. Section 405(a) of the HSWA of 1984 inserted a new § 7010 into RCRA (now § 3020), which legislatively overruled the Class IV inaction. The RCRA provision prohibits the disposal of hazardous waste by injection into or above a formation that contains “within one-quarter mile of the well” an underground source of drinking water. The prohibition is self-executing as of May 8, 1985, except in states with more stringent preexisting UIC requirements, and except for reinjections of treated groundwater pursuant to a response action under CERCLA. See RCRA § 3020, 42 U.S.C.A. § 6939b. The provision is made specifically enforceable under the SDWA.

⁸40 C.F.R. § 146.5(a)(2).

⁹40 C.F.R. § 146.5(b).

¹⁰40 C.F.R. § 146.5(c).

into a formation where there is an underground source of drinking water within one-quarter mile of the well bore.¹¹ Class V wells include various other types of injection wells, including such things as cesspools and septic systems serving multifamily or industrial structures or drainage wells, but do not include non-experimental carbon dioxide sequestration wells.¹² The sixth category, Class VI, was added in 2010 to include wells used for geologic sequestration of carbon dioxide (*i.e.*, long-term storage of carbon dioxide).¹³ Class V wells originally permitted for experimental injection of carbon dioxide must be re-permitted as Class VI wells once they outlive their experimental status.¹⁴ Likewise, enhanced recovery wells that utilize carbon dioxide for oil and gas production and are permitted as Class II wells must be re-permitted under Class VI if the “primary purpose” becomes long-term storage of carbon dioxide in the reservoir and there is an increased risk to underground drinking water.¹⁵ Effective March 4, 2014, EPA conditionally excluded carbon dioxide injected for such purposes from the definition of hazardous waste, reasoning that RCRA does not require regulation if it is properly managed and injected pursuant to the requirements for Class VI wells and other specified conditions.¹⁶

There are standards and criteria of a substantive nature applicable to Class I, II, III, and VI wells.¹⁷ Class IV hazardous waste injection wells are prohibited under a 1984 amendment to RCRA.¹⁸

The substantive requirements for the regulated wells, which are enforced by permits issued by the states or by EPA, affect construction, operation, closure, and corrective action¹⁹ of the wells. States may impose more stringent requirements. Decisions on the rate of migration of pollutants, for the purpose of permit conditions, are premised in part on a complex formula set out in § 146.6 of EPA’s regulations from which the “zone of endangering influence” is derived.

Not regulated under the UIC program are wells located in aquifers that are not now, cannot now, and will not in the future be suitable for water supply purposes and aquifers that are “mineral, hydrocarbon or geothermal energy producing, or can be demonstrated by a permit applicant as part of a permit application for a Class II or III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible.”²⁰ There is no similar exclusion for other hazardous waste land disposal facilities.

Although Congress has prohibited hazardous waste disposal into Class IV wells, EPA’s generally permissive regulatory requirements for Class I wells appear to

¹¹40 C.F.R. § 146.5(d). EPA did not promulgate regulatory standards for this class of wells, although EPA’s Part 144 regulations did contain a requirement that they be phased out. The disposal of hazardous waste into them was prohibited by § 7010 of RCRA (now recodified at § 3020), added by § 405 of Pub. L. No. 98-616. The RCRA “interim prohibition” is self-executing as of May 8, 1985, and is applicable in all states except those with more stringent UIC requirements. Such wells may be used to reinject treated waste extracted from the ground then treated pursuant to a CERCLA response action. RCRA § 3020, 42 U.S.C.A. § 6939b. The prohibition is enforceable under the SDWA. It does not appear to be applicable to radioactive waste, at least to the extent the waste is not subject to regulation under RCRA.

¹²40 C.F.R. § 146.5(e).

¹³40 C.F.R. § 146.5(f); 75 Fed. Reg. 77230 (Dec. 10, 2010).

¹⁴See 40 C.F.R. §§ 144.15, 146.81(14).

¹⁵40 C.F.R. § 144.19.

¹⁶79 Fed. Reg. 350 (Jan. 3, 2014) (adding 40 C.F.R. § 261.4(h)).

¹⁷40 C.F.R. Part 146, Subparts B and G (Class I), C (Class II), D (Class III), and H (Class VI).

¹⁸See Ch. 5.

¹⁹*Am. Iron & Steel Inst. v. EPA*, 886 F.2d 390, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20027 (D.C. Cir. 1989).

²⁰40 C.F.R. § 146.4.

make them a viable hazardous waste disposal method in states that have not adopted outright prohibitions or more stringent requirements. This is particularly so in light of the fact that under RCRA such facilities are not required to have a RCRA permit, and have thus been largely outside of the RCRA regulatory loop.

Congress has, however, moved in several directions under the RCRA umbrella to eliminate at least some deep-well injection of hazardous waste. The 1984 RCRA amendments prohibit hazardous waste injection into Class IV wells. In addition, another 1984 addition (to RCRA § 3004(f)), requires EPA to reconsider allowing the injection of cyanides, heavy metals, acids, polychlorinated biphenyls (PCBs), and halogenated organics, solvents, and dioxins, and prohibits further injection of those wastes after August 1988 (and makes the other land disposal discussed in the preceding section applicable), unless EPA has affirmatively determined that continued injection, with whatever controls it imposes, is consistent with public health protection criteria (or EPA standards for pretreatment) set forth in the RCRA provision.

§ 14:71 Specific facilities—Treatment of hazardous wastes

“Treatment” is defined by RCRA as any method or process by which hazardous wastes are reduced in volume or toxicity, and made safer or easier to manage.¹ Any method of destroying a waste’s hazardous qualities is plainly appealing, and RCRA expresses a strong preference throughout for treatment rather than disposal of hazardous wastes. The final hazardous wastes prohibited from land disposal unless first treated by the best demonstrated, available treatment technology were listed in June 1990.² The statutory preference for treatment is general and uncritical, but treatment methods have their own problems. EPA has begun slowly to address these, and late in 1986 announced that it would not consider treatment technology “available” as an alternative to land disposal if its risks were greater than those of proper land disposal.³

“Treatment” includes dilution of a waste with nonhazardous materials, but dilution is not acceptable as a means of avoiding the restriction on land disposal.⁴ Facilities where hazardous wastes are treated require permits under RCRA § 3005.

EPA regulations contain two sets of standards for treatment facilities. The first are general permit requirements for treatment facilities, in Part 264 (during interim status, Part 265 applies); the second are performance standards for facilities which may serve as an alternative to land disposal, in Part 268. The permit standards are not very detailed, and leave a great deal to be negotiated in permits. The Part 268 standards, however, are highly specific performance standards based on the best demonstrated, available technology. BDAT standards have been set for solvent and dioxin wastes. Many hazardous wastes are now covered.⁵ Surface impoundments used to treat wastes, open burning and open detonation on land must achieve BDAT standards or fall within the land disposal prohibition.⁶ For other facilities the BDAT standards are optional, but only if they meet BDAT will EPA allow their residue to be land disposed.

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¹See RCRA § 1004(34), 42 U.S.C.A. § 6903(34).

²55 Fed. Reg. 22520 (June 1, 1990); see RCRA § 3004(d)-(m), 42 U.S.C.A. § 6924(d)-(m); § 14:64.

³See 51 Fed. Reg. 40572, 40592 (Nov. 7, 1986); 51 Fed. Reg. 1602, 1680 to 1690 (Jan. 14, 1986).

⁴51 Fed. Reg. 40572, 40639, 40641 (Nov. 7, 1986) (codified at 40 C.F.R. §§ 268.3, 268.7).

⁵The first set of these rules was promulgated on August 17, 1988. 53 Fed. Reg. 31138 (Aug. 17, 1988). The second set was promulgated on June 23, 1989, at 54 Fed. Reg. 26594 (June 23, 1989). The third set was promulgated on June 1, 1990, at 55 Fed. Reg. 22520 (June 1, 1990).

⁶See 40 C.F.R. § 268.4.

The most common categories of treatment are thermal treatment and tank treatment.

§ 14:72 Specific facilities—Treatment of hazardous wastes—Thermal treatment

This category includes incineration, open burning, detonation, and other thermal treatment.¹ When wastes are hazardous solely because of ignitability or reactivity, burning or detonation may leave no hazardous residue.² Wastes may also be burned as fuel, but this may be considered reuse rather than treatment.³

By far the most common method of thermal treatment is incineration. High-temperature incineration is the most favored method for managing many of the wastes banned from land disposal, including solvents, dioxins, and PCBs. High-temperature incinerators tend to be temperamental and difficult to monitor, and EPA's initial incinerator performance standards were the subject of significant pulling and tugging over the questions of what destruction and removal efficiency was economically or technologically feasible.

EPA's initial incinerator performance standards, issued in the waning days of the Carter administration, required 99.99 percent destruction and removal efficiency. The Agency repealed the initial standards on June 25, 1982, replacing them with less stringent standards. Congress legislatively overruled EPA's 1982 regulation in 1984. RCRA § 3004(o)(1)(B) establishes as statutory incinerator performance standards the EPA regulations "in effect on June 24, 1982."⁴ The statutory standards are effective for all incinerators permitted after the effective date of the 1984 amendments. It is not clear that the pre-1982 requirements are as stringent as the best technology available in 1987, however.

The validity of incinerator permits issued under RCRA cannot be attacked collaterally through a RCRA citizen's suit claiming that the operation of the permitted incinerator would pose an imminent and substantial danger to health or the environment. Rather, permitting decisions must be reviewed on direct appeal under RCRA § 7006(b).⁵

§ 14:73 Specific facilities—Treatment of hazardous wastes—Tank treatment

By far the most common method of treatment is some form of "tank treatment"—biological or chemical treatment to alter or neutralize hazardous wastes.¹ Of all treatment methods, these promise the greatest overall reduction in discharges of

[Section 14:72]

¹See 40 C.F.R. Part 268.

²For a time, incinerator ash was not held to be subject to RCRA disposal requirements. See *Envtl. Def. Fund, Inc. v. City of Chicago*, 727 F. Supp. 419, 20 *Envtl. L. Rep. (Envtl. L. Inst.)* 20375 (N.D. Ill. 1989) (municipal incinerator ash exempt from RCRA if derived solely from household waste); *Envtl. Def. Fund, Inc. v. Wheelabrator Techs. Inc.*, 725 F. Supp. 758, 20 *Envtl. L. Rep. (Envtl. L. Inst.)* 20326 (S.D.N.Y. 1989) (rejection of claim that municipal resource recovery incineration ash must be regulated as hazardous waste). However, in *City of Chicago v. Env'tl. Def. Fund, Inc.*, 511 U.S. 328, 24 *Envtl. L. Rep. (Envtl. L. Inst.)* 20810 (1994), the Supreme Court held that incinerator ash that exhibits the characteristics of hazardous waste is not exempt from regulation under RCRA.

³See § 14:31.

⁴RCRA § 3004(o)(1)(B), 42 U.S.C.A. § 6924(o)(1)(B).

⁵*Palumbo v. Waste Techs. Indus.*, 989 F.2d 156, 23 *Envtl. L. Rep. (Envtl. L. Inst.)* 20876 (4th Cir. 1993).

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¹See 53 Fed. Reg. 34079 (Sept. 2, 1988) (interpretive revisions to hazardous waste storage and

toxic pollutants to the environment.

EPA's qualitative Parts 264 and 265 rules for facility permits will in many cases be supplemented by detailed performance standards for Clean Water Act discharges and BDAT standards to avoid RCRA's land disposal prohibition.²

Beginning in 1990, air emissions from tank treatment were under EPA facility regulations.³

IV. UNDERGROUND STORAGE TANKS*

§ 14:74 Introduction

When EPA began taking inventory of contaminated sites that would require cleanup under Superfund, the Agency discovered a recurring problem: Drinking water supplies had been contaminated by gasoline which had leaked from buried tanks. Gasoline tanks were commonly buried as a safety precaution to minimize the hazard of fire or explosion. The leaking tanks were often at gasoline stations built during the oil boom of the 1950s and 1960s and which had since been abandoned.

Although the leaking tanks were reported to EPA, the Agency decided it had no authority to require cleanup in most situations. Superfund contained an exclusion for "petroleum products";¹ EPA decided this exclusion kept it from responding to gasoline contamination of groundwater,² and was reluctant to expand its struggling Superfund program so quickly without more express Congressional authorization. This was not long in coming. In 1984, Congressman Don Ritter, in whose district some of the more annoying gasoline contamination had been found, introduced a bill to extend Superfund coverage for such situations; Senator Durenburger introduced a similar bill in the Senate.³ The American Petroleum Institute and other tank-owner representatives objected vigorously to extending Superfund liability to their members, and no Superfund bill was enacted that year.

Another common problem that EPA found was sites contaminated by leaking, buried tanks of solvents—especially trichlorethylene, the common degreasing agent. The Agency had ample authority to clean up these leaks, and used it, but because the leaking tanks were not regulated in any way—since they contained product, not wastes, they were not covered by RCRA—it appeared the leaks and cleanups would

treatment tank rules).

²See 40 C.F.R. Part 268; § 14:64.

³See 40 C.F.R. Parts 264 and 265, Subparts AA, BB, and CC.

*Updated from Stever, "Overview of RCRA Land Ban and USR Provisions," ALI/ABA and ELI Course of Study, Environmental Law, Feb. 16–18, 1989, Washington, D.C., at 361.

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¹See CERCLA §§ 101(14), 104(a)(2), 42 U.S.C.A. §§ 9601(14), 9604(a)(2). The exclusion was intended, as we have seen, to draw a boundary between the Superfund bill and another, never enacted, to cover onshore oil spills. See § 14:6. This distinction is clarified, to a degree, in the Oil Pollution Act of 1990 (OPA), Pub. L. No. 101-380, 104 Stat. 484 (1990).

²Memorandum from A. James Barnes, General Counsel of EPA, to Sheldon M. Novick, June 19, 1983. EPA's choice was motivated as much by policy as by considerations of law; the Superfund exclusion did not apply to petrochemicals, but only to "petroleum, including crude oil or any fraction thereof"; the Agency had the option of claiming authority over gasoline itself, as a refined product, or more realistically, over the benzene which is commonly added to gasoline and which constitutes the principle hazard from spills. In the past, the Agency had claimed authority over a release if it contained any designated hazardous substance, and EPA had to ignore its own administrative precedents in order to decline jurisdiction over the benzene in gasoline spills. See also CERCLA § 101(14), 42 U.S.C.A. § 9601(14) (petroleum fractions separately designated as hazardous—as benzene is—do not fall within the petroleum exclusion).

³See generally Hearings Before the Senate Subcomm. on Toxic Substances and Environmental Oversight, H. R. Rep. No. 721, 98th Cong., 2d Sess. 73 (1984).

continue indefinitely unless some controls were placed on the sources.⁴

The result of all this was a new regulatory program to apply prospectively to tank owners, but with some provisions that would require tank owners and operators to clean up past discharges; it was attached to the RCRA Amendments of 1984. In 1986, a government cleanup program for abandoned petroleum tanks was added, completing the program.⁵

The new regulatory program, Subtitle I of RCRA⁶—“Underground Storage Tanks” (UST)—sets standards and imposes controls for hundreds of thousands of buried storage tanks everywhere in the United States. In 1986, EPA began the arduous task of notifying the large regulated community of their new responsibilities under the statute. In 1988, EPA replaced its interim UST regulations with final regulations that contain substantive performance standards, recordkeeping and reporting obligations, release response requirements, closure requirements, and financial responsibility requirements.⁷ EPA also issued guidelines for approval of state underground storage tank programs. The final rules construct an elaborate, self-contained regulatory program for underground storage tanks.

§ 14:75 Overview of the regulatory program

The problem the statute focuses upon is caused by the corrosion of buried tanks. Corrosion of buried metals is both virulent and concealed. When dissimilar metals come into contact and are immersed in water, a current may flow across the point of contact. This effect causes some batteries to operate; it also causes severe and rapid corrosion of iron or steel buried in damp earth. The corrosion can be eliminated by “cathodic” protection, which breaks the battery circuit, by insulating the steel with nonconducting materials, or by replacing steel with nonconducting plastic or fiberglass.

Subtitle I of RCRA requires that EPA set national performance criteria for buried tanks that contain “regulated substances”—petroleum and hazardous chemicals—to guard against corrosion and structural defects. The states may establish plans of enforceable regulations to ensure that buried tanks meet the national performance criteria, as well as any additional controls needed to protect environmental quality, and to ensure that significant leaking is stopped and corrective measures taken. The program applies to all tanks used, or formerly used and abandoned, for storing regulated substances. The program is to be principally administered by the states (or EPA where state programs are not approved), with a miniature Superfund for abandoned petroleum tanks.

To bring the regulated community into the new program, the owners of all underground storage tanks in operation or abandoned since 1974 must send notices to state or local agencies. EPA must promulgate design criteria for new tanks and for tanks already in existence, and must also set up criteria for state plans to regulate the tanks.

§ 14:76 Notices—Persons responsible for compliance

⁴Hearings Before the Senate Subcomm. on Toxic Substances and Environmental Oversight, H. R. Rep. No. 721, 98th Cong., 2d Sess. 73 (1984).

⁵HSWA, Pub. L. No. 98-616, tit. VI, § 601, 98 Stat. 3221, 3277–3288 (regulatory program); SARA § 205, Pub. L. No. 99-499, 100 Stat. 1613, 1696 (1986) (codified at RCRA §§ 9001 to 9014, 42 U.S.C.A. §§ 6991 to 6991m).

⁶HSWA, Pub. L. No. 98-616, tit. VI, § 601, 98 Stat. 3221, 3277–3288 (regulatory program); SARA § 205, Pub. L. No. 99-499, 100 Stat. 1613, 1696 (1986) (codified at RCRA §§ 9001 to 9014, 42 U.S.C.A. §§ 6991 to 6991m).

⁷40 C.F.R. Part 280, Subparts A to G (1988); 53 Fed. Reg. 37082 (Sept. 23, 1988).

Owners and operators of underground storage tanks must send notices to state agencies, and must bring their tanks into compliance with eventual regulations. Owners alone are responsible for initial notices;¹ owners and operators are jointly responsible for later compliance.² These terms are defined elsewhere in the RCRA regulations.³ The notice requirements apply to owners of existing tanks, to owners of tanks taken out of service after 1973, and to owners of new tanks brought into operation after the effective date of the notice requirement—November 8, 1984.⁴ Notices must describe the age, size, type, location, and use of each tank.⁵

Persons who “deposit” regulated substances in underground tanks must inform the tank owners of their duty to send notices to EPA or state agencies; this “depositor” obligation begins thirty days after the notice forms are published, and continues for eighteen months.⁶ Thirty days after criteria for new tank performance are published, anyone who sells a new tank must inform the buyer of his notice obligation.⁷ In the 1988 revisions, EPA imposed an enforcement-related notification requirement, which expands on the original Part 280 regulations’ notification requirement, and the Appendix I form was expanded.

§ 14:77 Regulated substances—Designated pollutants

The UST program applies to all tanks used for storage of liquid “petroleum” or hazardous substances (as defined in CERCLA).¹ Hazardous substances are defined in CERCLA to include most chemicals designated as toxic or hazardous under other statutes. “Petroleum” includes “crude oil or any fraction thereof” (a term borrowed from CERCLA where it is understood to include gasoline) which is liquid at room temperature and pressure.² Collectively, these are called “regulated substances.”³

When the hazardous waste and UST portions of RCRA are taken together, regulation should extend over all underground tanks which contain liquid petroleum or hazardous substances, whether products or wastes, regardless of the statutes under which they are designated. EPA’s UST program does apply to both hazardous substances and petroleum, although it does have some separate requirements for USTs containing those substances.⁴

§ 14:78 Sources subject to regulation

An underground tank is defined in the statute:

The term “underground storage tank” means any one or combination of tanks (including underground pipes connected thereto) which is used to contain an accumulation of regulated substances, and the volume of which (including the volume of the underground

[Section 14:76]

¹See RCRA § 9002, 42 U.S.C.A. § 6991a.

²RCRA § 9002(a), 42 U.S.C.A. § 6991a(a).

³Compare RCRA § 9001(3)-(4), 42 U.S.C.A. § 6991(3)-(4) with 40 C.F.R. § 260.10 (“operator” and “owner”). The operator is the person responsible for overall operation of the facility.

⁴See RCRA § 9002(a)(2), 42 U.S.C.A. § 6991a(a)(2); 50 Fed. Reg. 46602 (Nov. 6, 1985).

⁵See RCRA § 9002(a)(2), 42 U.S.C.A. § 6991a(a)(2); 50 Fed. Reg. 46602 (Nov. 6, 1985).

⁶See RCRA § 9002(a)(5), 42 U.S.C.A. § 6991a(a)(5); 50 Fed. Reg. 46602 (Nov. 6, 1985).

⁷See RCRA § 9002(a)(6), 42 U.S.C.A. § 6991a(a)(6); 50 Fed. Reg. 46602 (Nov. 6, 1985).

[Section 14:77]

¹See RCRA § 9001(7), 42 U.S.C.A. § 6991(7).

²RCRA § 9001(6), 42 U.S.C.A. § 6991(6).

³See RCRA § 9001(7), 42 U.S.C.A. §§ 6991(7).

⁴See 40 C.F.R. §§ 280.41, 280.42.

pipes connected thereto) is 10 per centum or more beneath the surface of the ground.¹

The regulatory definition generally follows the statutory language, with some elaboration on it. The exemptions and deferrals, however, are primarily products of EPA's regulatory choices and priorities.

The UST regulations apply to any "UST system," as defined in the regulations, unless excluded by them or deferred pending further rulemaking. UST systems are only subject to the regulations if they contain "regulated substances," defined to include (1) any CERCLA hazardous substances not regulated as a hazardous waste under Subtitle C of RCRA, and (2) petroleum, including crude oil or any fraction thereof that is a liquid under standard temperature and pressure conditions.

Connecting "pipes" are sensibly included in the definition, but drawing the boundaries of the tank against which the "10 per centum" will be measured promises to develop into an arcane lore in industries where there is a high degree of interconnection by pipes.

Excluded from regulation are "tanks" which contain substances regulated as hazardous wastes; tanks which are used for farm or home residential purposes; tanks used for heating oil burned on site; septic tanks; and some other industrial facilities exempted for various stated or unstated reasons.²

In addition to hazardous waste storage tank systems, systems containing a mixture of hazardous waste and "other regulated substances" are exempt from regulation. Also exempt are: UST systems that are part of a wastewater treatment facility regulated under §§ 402 or 307(b) of the Clean Water Act, tanks that are actually equipment or machinery hydraulic lift tanks or electrical equipment, systems of 110 gallons or less, systems that contain *de minimis* concentrations of regulated substances, and "any emergency spill or overflow containment UST system that is expeditiously emptied after use."

EPA deferred from regulating wastewater treatment tank systems, systems containing radioactive material regulated under the Atomic Energy Act, systems that are part of an emergency generator system at a nuclear power generation facility regulated by the NRC under Appendix A of 10 C.F.R. Part 50, airport hydrant fuel distribution systems, and UST systems with field-constructed tanks. Partially deferred (temporarily exempt from the release detection requirements) are UST systems that store fuel solely for use by emergency power generators. Those USTs deferred from regulation are nevertheless subject to narrative requirements that new systems be cathodically protected or constructed of or clad with noncorrodible material, or designed to prevent release of the contents (unless experts deem the environment in which the tank is to be located to be noncorrosive, and compatible with the stored material).

Each state must prepare an inventory of underground storage tanks containing regulated substances. RCRA § 9002 was amended in 1986 to require separate inventories for petroleum and hazardous substance tanks; responses to notice are to be aggregated, and the two inventories to be submitted to EPA by the fall of 1987.

§ 14:79 Leak detection and "emission limits"

Many underground storage tanks already in existence are believed to be leaking. The first stage in the control program, therefore, is to identify and correct the leaking tanks, and to clean up spilled material. To accomplish this, EPA must

[Section 14:78]

¹RCRA § 9001(10), 42 U.S.C.A. § 6991(10).

²RCRA § 9001(10), 42 U.S.C.A. § 6991(10); *see* 53 Fed. Reg. 37082 (Sept. 23, 1988) (EPA final rules for hazardous substances and petroleum products stored in underground storage tanks).

promulgate criteria for leak-detection, for corrective measures, and for cleanup.¹

Subtitle I contains the traditional distinction between existing and new sources in setting these criteria. Existing tanks must have leak-detection systems, and corrective action will be required to be taken if leaks are detected.² New sources, however, in addition to meeting these criteria, must meet additional requirements.

The 1988 UST regulations contain specific new tank construction standards, piping standards, spill and overflow prevention requirements, and installation standards. Except for spill and overflow prevention, which are detailed, the standards generally follow, and can be met by conforming to, a number of industry standards. Installers must be certified by tank manufacturers or the state agency responsible for the state's UST program, or the owner/operator must comply with one of several other means of assuring compliance with the regulations, such as installation under supervision of a professional engineer with relevant experience. New tank installations must be certified to EPA and the relevant state agency that the tank and the installation complied with the Part 280 requirements.³

The statute allows EPA to set up categories of tanks, based on age, use and location, industry practice, and the "technical capability" of owners and operators. EPA is not barred from considering economic factors, but the regulations must always be such as "may be necessary to protect human health and the environment."⁴

The statute sets action-forcing schedules to compel EPA and the states to establish rules, but unlike the Clean Air Act and Clean Water Act there is no schedule to achieve environmental quality objectives. This may be in recognition that cleaning up the accumulated leaks of the past century will take time. Within the framework of goals and emission limits, therefore, EPA and the states have considerable latitude to implement technology-based emission limits and achieve environmental quality standards on a reasonable schedule. As a result, if EPA accepts the statute's long-term goals of eliminating significant pollution from this source, it has considerable latitude to establish a cost-effective program to reach the goal in a reasonable time.

The most significant impact the regulations have is on existing USTs, which are required by December 22, 1998, to be upgraded or closed in accordance with the closure requirements discussed in § 14:81. The upgrading standards are generally less rigorous than the standards applicable to new USTs, but nevertheless require significant capital expenditures for owners and operators in states that had not imposed retrofit requirements prior to EPA's regulatory effective date.

The regulations also impose detailed operational requirements that are related to the cathodic protection and leak detection systems required to be installed, which significantly increase the operating costs of UST maintenance, and make use of plastic tanks, where possible, significantly less expensive over the long run.

The regulations establish somewhat different release detection requirements for petroleum and hazardous substance UST systems. The most significant difference between the two sets of requirements is the obligation on the part of hazardous substance UST owner/operators to have a secondary containment system or double-walled tanks, not applicable to petroleum tanks. The regulations also detail the acceptable methodologies and criteria for various types of leak detection. Recordkeeping for leak detection monitoring is required, and records must be maintained for

[Section 14:79]

¹See RCRA § 9003(a), 42 U.S.C.A. § 6991b(a).

²See RCRA § 9003(c), 42 U.S.C.A. § 6991b(c).

³53 Fed. Reg. 37082 (Sept. 23, 1988).

⁴See RCRA § 9003(a), 42 U.S.C.A. § 6991b(a).

one year, unless a different time is established by EPA.

§ 14:80 Corrective action requirements

As in the Subtitle C program, corrective action is triggered by release reporting, which in turn is triggered by release monitoring. The UST release reporting obligations are specified in Subpart E of the UST regulations. The basic reporting requirement is that owners and operators must report, within twenty-four hours, knowledge of (1) discovery of released regulated substances in the neighborhood's environment, (2) unusual operating conditions such as evidence of unusual product loss or the presence of water in the tank, for which there is no benign explanation, or (3) monitoring results from a leak detection system that indicate, after confirming the reliability of the results, that a release may have occurred.¹

Although under some circumstances corrective action may be warranted immediately, the regulations assume that further investigation will normally follow reporting of a suspected release. If offsite impacts are discovered, the owner/operator may be required to undertake an investigation to determine linkage with the UST. Otherwise, the follow-up, pre-corrective action obligations involve determining whether in fact a leak occurred, repairing the UST, and checking the site for other sources of environmental contamination if the system ultimately is shown not to have leaked.

The simplest corrective action requirement of the UST regulations is the obligation to report and clean up spills and overfills. Spills and overfills resulting in a release of more than twenty-five gallons of petroleum or of a hazardous substance in excess of its CERCLA reportable quantity are automatically required to be addressed under the Subpart F corrective action scheme. Smaller spills and overfills simply need to be cleaned up by whatever means the owner/operator chooses, although the regulations presume that the action can normally be accomplished within twenty-four hours.

The Subpart F corrective action requirements are reasonably straightforward, involving notification to the implementing agency, rapid site characterization and free product removal, determination of the extent of residual soil and groundwater contamination, or both, and measures to address such residual contamination over the longer term.

§ 14:81 Closure

The Subpart G closure requirements for UST systems include requirements for temporary as well as permanent closure, site assessment at closure or change in service, and recordkeeping requirements. Temporary closure requirements basically involve requirements that corrosion protection systems be maintained during the closure period, define what is "empty," and impose additional requirements for closures of three months or more.

UST systems closed for more than twelve months must either be closed permanently if they do not meet the Part 280 standards, or be upgraded to meet either the performance standards for new systems or the upgrade requirements.¹

The preferred permanent closure strategy is physical removal and disposal of the

[Section 14:80]

¹Nat'l Tel. Coop. Ass'n v. Exxon Corp., 38 F. Supp. 2d 1, 29 Env'tl. L. Rep. (Env'tl. L. Inst.) 21245 (D.D.C. 1998) (holding that a UST owner may be held liable for damages attributed to negligent remediation if the owner fails to adhere to the corrective action plan).

[Section 14:81]

¹40 C.F.R. § 280.70(c).

tank. *In situ* closure by filling a tank with inert material is permissible under the regulations, but can be difficult in some situations because of the sampling and analysis requirements, which essentially require sampling from beneath the tank. Each closure site must be soil-tested for evidence of past leakage, and if such evidence emerges the corrective action requirements are triggered.

Section 280.73 provides authority for EPA or an authorized state agency to require the owner and operator of a tank closed prior to December 22, 1988 (*i.e.*, before the UST regulations became effective), to assess the excavation zone and go through closure “if releases from the UST may, in the judgment of the implementing agency, pose a current or potential threat to human health and the environment.” This provision poses a potentially significant residual closure liability on owner/operators who decommissioned tanks that had leaked in the past by filling them with cement grout prior to the trigger date, since in some circumstances the application of the site assessment requirements may be impossible without physical removal of the tank.

§ 14:82 The LUST fund—Financial responsibility

When a significant leak or emission is detected, the tank may remain in service if the leak is corrected, but approvable state plans must have adequate regulations to require closures where needed.¹ If significant leakage has already contaminated soil and groundwater, cleanup also may be required.² Cleanup, like other compliance, is primarily the owner and operator’s obligation, and EPA or a state may order owners or operators to clean up contaminated soil or groundwater.

When the spill or leakage is a hazardous substance, EPA may order or carry out a cleanup under Superfund.³ Petroleum and its products—including gasoline—are not covered by Superfund unless EPA expressly lists these products as hazardous, which it has shown no intention of doing. In 1986, this omission was addressed in the SARA, but, instead of extending Superfund, a similar but much smaller Leaking Underground Storage Tank (LUST) Fund was established by an amendment to RCRA.⁴

EPA (or a state under a cooperative agreement with EPA) may draw on the LUST Fund to clean up spills from buried liquid petroleum or petroleum product storage tanks when the owners or operators cannot be found or cannot carry out the measures adequately (or have disregarded an order to carry them out), where the required financial assurances are inadequate for the cleanup, or where prompt action is required and a cleanup is “necessary” to protect health or the environment. EPA is required to give priority to releases of petroleum which pose the greatest threat,⁵ but there is no requirement to set up an elaborate administrative procedure for ranking releases in order of priority, as there is in Superfund, and the entire program may be turned over to states for administration.

To ensure that correction, closure, or cleanup occurs, EPA may—but need not—

[Section 14:82]

¹See RCRA § 9004(a)(1)-(9), 42 U.S.C.A. § 6991c(a)(1)-(9).

²See RCRA § 9004(a)(4), 42 U.S.C.A. § 6991c(a)(4). The statute requires “corrective action,” a term borrowed from EPA’s hazardous waste facility standards for groundwater protection, where it includes actions to restore groundwater quality, as well as to correct the source of contamination. See 40 C.F.R. § 264.100(b).

³See § 14:100, below.

⁴SARA § 205, Pub. L. No. 99-499, 100 Stat. 1613 (1986) (amending RCRA §§ 9001 to 9003, 42 U.S.C.A. §§ 6991 to 6991c).

⁵RCRA § 9003(h)(3), 42 U.S.C.A. § 6991b(h)(3).

require tank owners and operators to provide assurances of financial responsibility.⁶ EPA may also require evidence of financial responsibility to meet the claims of persons injured by leaks.⁷ In 1986, the statute was amended by the SARA to allow a separate set of financial responsibility rules for petroleum tanks, with special attention to the needs of small businesses,⁸ and allowing state funds or risk retention groups to provide the needed insurance.

The UST financial responsibility regulations bear an understandable similarity to the RCRA financial responsibility provisions in their structure. The Subpart H regulations, which were issued in 1988, address financial responsibility only for petroleum USTs and are applicable to all owners and operators of petroleum USTs in existence on the effective date, with limited exemptions.⁹

Owners or operators of facilities engaged in petroleum production, refining, or marketing, and owners or operators of USTs with an average monthly throughput of more than 10,000 gallons are required to obtain “financial assurance” available to cover corrective action or liability to third parties of at least \$1 million “per occurrence,” while smaller operators must hold \$500,000 per occurrence. All UST owners or operators must, in addition, maintain an “annual aggregate” of funds of either \$1 million or \$2 million, depending on the number of USTs subject to regulation.

Financial responsibility may be demonstrated by insurance, risk retention group coverage, surety bond, guarantee, letter of credit, financial test of self-insurance, trust fund, or a state fund or other state assurance, or a combination of two or more. A financial responsibility demonstration is required when new tanks are installed, when a release or suspected release occurs, when a provider becomes incapable of providing assurance, or revokes a mechanism and the owner or operator cannot secure a replacement, or if requested by EPA or the state. There is a specific requirement imposed upon guarantors and insurance carriers that requires notice of cancellation to provide the owner or operator time to seek alternate means of assurance. Records of financial responsibility must be kept until the owner or operator is released, following closure or corrective action, whichever occurs last.

Local governments have four additional mechanisms to demonstrate financial responsibility. These include a bond rating test, a local government financial test, a governmental guarantee, and maintenance of a fund balance.¹⁰

An important provision of the UST financial responsibility regulations allows the implementing agency to require the provider to place funds into a “standby trust,” which the government can draw upon in the event a release occurs or a source of financial responsibility terminates.

§ 14:83 State plans

The states are the primary enforcement agencies for this program. States are not

⁶See RCRA § 9003(d), 42 U.S.C.A. § 6991b(d); *see also* RCRA § 9004(a)(6), 42 U.S.C.A. § 6991c(a)(6); 54 Fed. Reg. 47077 (Nov. 9, 1989).

⁷RCRA § 9003(d), 42 U.S.C.A. § 6991b(d). While EPA is given discretion in forming its own regulations, it appears that the state plans are required to have those elements for approval.

⁸See 53 Fed. Reg. 43322 (Oct. 26, 1988) (final rules for petroleum USTs); 53 Fed. Reg. 3818 (Feb. 9, 1988) (advanced notice of proposed rulemaking for hazardous substance tanks).

⁹See 40 C.F.R. § 280.90(a)-(e). The effective dates were set forth in 40 C.F.R. § 280.91.

Certain USTs are exempted from or deferred from regulation under 40 C.F.R. § 280.10, as are state and federal entities whose debts are the liabilities of the sovereign under § 280.90(c). Most local governments will not qualify for the state and federal entity exemption. A separate local government financial responsibility was considered, but not included in the initial UST financial responsibility rule. *See* 53 Fed. Reg. 43322, 43329 (Oct. 26, 1988).

¹⁰58 Fed. Reg. 9026 (Feb. 18, 1993).

required to submit their programs for approval by EPA; if they do not have approved programs, however, EPA will directly administer the federal requirements.¹ This has generally been sufficient inducement for the states to assume responsibility in other areas.

The statute allows EPA and the states considerable flexibility in designing their plan; a permit system is not required, and states and local government are left free to regulate by general rules, as under the Clean Air Act. EPA and the states must only provide for adequate measures of the traditional kind to accomplish the principal purposes of the statute: protection of health and the environment through leak detection and correction, and the gradual upgrading of new tanks.² Here again, the Agency has broad freedom to adopt a program that benefits from experience in other media.

A number of states had UST regulatory programs in place well before EPA implemented the federal program. The Part 281 regulations, adopted by EPA in 1988, point heavily toward EPA's interest in vigorous delegation of federal authority to the states. For example, they provide for partial delegation, whereby a state may choose to regulate either petroleum or hazardous substance USTs, but not both, and there is provision for interim approval.

The standard for receiving authority to administer the federal program is adoption of a state program that is "no less stringent" than the EPA program.

§ 14:84 Enforcement

EPA and the states are given concurrent enforcement authority; EPA may issue orders or proceed by suit, and may administratively or by judicial action assess civil penalties.¹ The civil penalties are substantial—up to \$25,000 per day of noncompliance²—but there are no criminal penalties.³

Although there is no citizen suit provision in the UST regulatory program, courts have interpreted the language of RCRA's general citizen's suit provision to encompass UST issues, including corrective action for leaking petroleum tanks.⁴

V. EMERGENCY RESPONSE AND LONG-TERM CLEANUP

[Section 14:83]

¹See RCRA § 9004, 42 U.S.C.A. § 6991c; 53 Fed. Reg. 37212 (Sept. 23, 1988).

²See RCRA § 9003(a), 42 U.S.C.A. § 6991b(a).

[Section 14:84]

¹In re U.S. Air Force Tinker Air Force Base, No. UST-6-98-002-AO-1 (EPA ALJ May 19, 1999) (holding that although EPA may administratively fine another agency for alleged UST violations, RCRA §§ 6001, 9001, 9006, and 9007 do not authorize EPA to administratively assess punitive penalties for those same violations).

²See Office of Solid Waste and Emergency Response, U.S. EPA Penalty Guidance for Violations of UST Regulations, OSWER Directive 9610.12 (Nov. 14, 1990). EPA may make violator-specific adjustments between 50 percent increases and 25 percent decreases to matrix penalty values depending on a violator's degree of cooperation, degree of willfulness, and other factors unique to the case.

³See RCRA § 9006, 42 U.S.C.A. § 6991e.

⁴See, e.g., *Agricultural Excess and Surplus Ins. Co. v. A.B.D. Tank & Pump Co.*, 878 F. Supp. 1091, 40 Env't. Rep. Cas. (BNA) 2126, 25 Env'tl. L. Rep. 21091 (N.D. Ill. 1995) (rejecting argument that RCRA citizen suit based on leaking UST was barred because of CERCLA petroleum exclusion); see also *Bowers v. Wurzburg*, 528 S.E.2d 475 (W.Va. 1999) (holding that based on common law tort theory a property owner can be held liable to third parties for damages resulting from lessee's negligent maintenance of USTs, even if the owner has no control over the lessee's operations and has no knowledge of any problems). But see *Park Hiway Enterprises, LLC v. CEM Leasing, Inc.*, 995 P.2d 657 (Alaska 2000) (holding that a gasoline distributor is not liable to third parties for contamination resulting from a service station because the distributor was too remote to impose statutory or common law liability).

§ 14:85 Introduction

“Emergency response” is one of EPA’s functions, which it carries out in different environmental media in collaboration with other agencies. It is a kind of fire-fighting work, for which the Agency maintains highly specialized staff and contractors. The Agency has authority to respond to most situations in which the release of some material into the environment may create a hazard, and it may order others to respond and recover the costs of response from responsible parties.

As often happens, Congress has assembled authority for this function piecemeal, using whatever vehicles were at hand when they were needed. As a result, emergency response and remedial programs are scattered in the hazardous waste laws and in the Clean Water Act. The Clean Water Act program was in fact the first part of the program to be authorized, and it has given shape to much of what followed; the case law and legislative history of the Clean Water Act’s § 311 oil spill response program in some cases may clarify the later hazardous waste statutes’ provisions. As noted in § 14:1, above, the response programs now are principally aimed at soil and groundwater protection, and are dominated by Superfund.

§ 14:86 Oil spills¹—History of oil spill legislation

Section 311 was created by the Federal Water Pollution Control Act Amendments of 1972.² It was a congressional response to the disastrous Santa Barbara oil well blowouts and the *Torrey Canyon* spill, which occurred during the 1960s. The development of § 311 paralleled attempts to establish an international regime for addressing oil spills on the high seas. Much of the considerable complexity of § 311 is a result of Congress’ efforts to engraft onto it many of the established doctrines of maritime law to appease the international maritime establishment and insurance carriers, while not applying those provisions to nonmaritime spillers.

The premise on which § 311 rests is that the custodian of the oil at the time it escapes into the environment is in the best position to clean up the spill, and should be obligated to do so without regard to who was actually at fault in the accident. In addition, it assumes that the private sector should ultimately be financially responsible for oil spill cleanup; accordingly the government should have a right of action to recover public monies spent on oil spills from the defaulting custodian. Finally, since there may be cases in which the custodian is in no sense at fault, there should be a mechanism for shifting the financial responsibility to the person who is at fault. All these concepts are contained within § 311.

Congress amended § 311 in 1978,³ adding a provision authorizing the government to recover, in addition to cleanup costs, the value of lost or damaged natural resources.⁴ It also substantially broadened § 311’s coverage, originally limited to petroleum products, to include a wide range of toxic and hazardous chemicals.⁵

Between 1978 and 1981, when the CERCLA program came into being, § 311(z)

[Section 14:86]

¹By **Donald W. Stever**. Updated by **Celia Campbell-Mohn**. Adapted from *Law of Chemical Regulation and Hazardous Waste*.

²Pub. L. No. 92-500, 86 Stat. 816 (codified as amended at 33 U.S.C.A. §§ 1251 to 1376) [hereinafter cited as Clean Water Act].

³Pub. L. No. 95-576, 92 Stat 2467–69 (1978).

⁴See *United States v. M.V. Zoe Colcatroni*, 602 F.2d 12 (1st Cir. 1979) (general discussion of this provision); *In re Ballard Shipping Co.*, 772 F. Supp. 721 (D.R.I. 1991) (cause of action conferred on federal government only, not on states).

⁵EPA subsequently promulgated a list of hazardous substances subject to the authority of § 311(b)(2)(A). See 40 C.F.R. § 116.4.

contained the sole authority for government financed cleanup of hazardous waste sites posing a threat to human health or the environment. During that period, EPA expended millions of dollars from the § 311 revolving fund on hazardous waste sites. Not all of these sites posed a threat to surface waters. Since § 311 is part of the Clean Water Act, its jurisdiction is coterminous with the Act. As a result, § 311 arguably only authorized the expenditure of funds on hazardous waste sites that posed a threat to “waters of the United States,”⁶ which encompasses only surface waters. Accordingly, a strong argument can be made that a number of EPA’s post-1978 § 311 hazardous waste expenditures were unauthorized since they addressed sites at which only groundwater pollution was implicated.

Section 311’s usefulness as a mechanism to address hazardous waste problems ceased with the enactment of CERCLA,⁷ although, as will become apparent, CERCLA owes its essence to the § 311 scheme. CERCLA has far broader applicability to chemicals and any substances whose discharge may pose a hazard, while § 311 is limited to oil and a list of designated hazardous substances; chemical discharges from vessels are therefore usually handled under CERCLA. But since Congress chose to exempt “petroleum, including crude oil or any fraction thereof”⁸ from its definitions of “hazardous substance” and “pollutant or contaminant,” § 311 remained the primary source of federal authority to address petroleum product spills.⁹ It is unclear to just what extent CERCLA applied to petroleum derivatives¹⁰ and whether both CERCLA and § 311 were applicable when CERCLA applied to a petroleum derivative.

The centerpiece of the § 311 program was the National Oil and Hazardous Substances Contingency Plan (NCP).¹¹ This regulation was initially developed by the

⁶See Clean Water Act § 502(7), (12), 33 U.S.C.A. § 1362(7), (12). The meaning of “waters of the United States,” and therefore the extent of federal regulation, remains a subject of uncertainty and controversy. See, e.g., 80 Fed. Reg. 37054-01 (June 29, 2015) (“This final rule interprets the CWA to cover those waters that require protection in order to restore and maintain the chemical, physical, or biological integrity of traditional navigable waters, interstate waters, and the territorial seas.”). The rule went into effect on Aug. 18, 2015 and as of November 2016 continues to be challenged in courts.

⁷Section 304(b) of CERCLA transferred one-half of the unobligated balance of the Clean Water Act § 311(k) oil pollution cleanup fund to the CERCLA Hazardous Substance Response Trust Fund. Section 304(c) of CERCLA provides that in the event of a conflict between Clean Water Act § 311 and CERCLA, the latter applies. In the event the § 311 fund runs out of money, the CERCLA trust fund can be tapped for oil spills.

⁸CERCLA §§ 101(4), 104(a)(2), 42 U.S.C.A. §§ 9601(4), 9604(a)(2) (“hazardous substance” and “pollutant”).

⁹The Trans Alaska Pipeline Authorization Act, 43 U.S.C.A. §§ 1651 to 1655, contains its own oil spill provision which is similar to, but in some respects more stringent than, Clean Water Act § 311. See *Alyeska Pipeline Serv. Co. v. United States*, 649 F.2d 831, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20592 (Ct. Cl. 1981). In 1990, the OPA repealed the limited oil spill cost recovery provisions under the Deepwater Port Act of 1974 and Title III of the Outer Continental Shelf Lands Act Amendments of 1978, and remaining monies from the Deepwater Port Liability Fund and Offshore Oil Pollution Compensation Fund were rolled into the Oil Spill Liability Trust Fund. See OPA, Pub. L. No. 101-380, §§ 2003 to 2004, 104 Stat. 484, 507 (1990) (repealing 33 U.S.C. § 1517 and 43 U.S.C. §§ 1811 to 1824).

¹⁰CERCLA §§ 1011(14), 104(a)(2), 42 U.S.C.A. §§ 9601(14), 9604(a)(2), remove from the petroleum exemption “any fraction . . . otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of this paragraph.” Subparagraphs (A) through (F) incorporate by reference hazardous waste lists and designations of toxic pollutants compiled by EPA under the environmental protection statutes. Thus, when benzene is a petroleum fraction, since it is listed as a hazardous waste under RCRA, see 40 C.F.R. § 261, it is subject to CERCLA.

¹¹40 C.F.R. § 300. The NCP was significantly amended, primarily as it pertains to hazardous substances, on Nov. 20, 1985. See 50 Fed. Reg. 47912 (Nov. 20, 1985). The NCP was significantly revised again in 1990. See 55 Fed. Reg. 8666 to 8865 (Mar. 8, 1990) (codified at 40 C.F.R. Part 300); see also Starfield, “The 1990 National Contingency Plan—More Detail and More Structure, But Still a Balancing Act,” 20 Env’tl. L. Rep. (Env’tl. Law Inst.) 10222 (June 1990).

Council on Environmental Quality under § 311(c)(2).¹² Following enactment of CERCLA, President Reagan delegated authority to revise the NCP, as mandated by § 105 of CERCLA, to EPA. The revised NCP addresses both oil and hazardous substance response, but preserves the basic intergovernmental coordination scheme originally put together for oil spill response.

Partially the result of the *Exxon Valdez* oil spill in March 1989¹³ and partially the result of over fifteen years of congressional negotiations, on August 18, 1990, the Oil Pollution Act of 1990 (OPA)¹⁴ was signed into law after a unanimous vote in both houses.¹⁵ The Act establishes and enhances: a comprehensive federal liability scheme; a single federal fund called the Oil Spill Liability Trust Fund to pay for response and monitoring costs; federal authority to order removal action or conduct such action itself; standards and reviews for licensing tank personnel; tightened tank equipment standards; spill prevention control and countermeasure (SPCC) plan requirements for onshore facilities, offshore facilities, and vessels; criminal penalties for violations of the Act; and civil penalties for spills of oil and other hazardous substances. The Act also condones participation of the United States in an international oil liability and compensation scheme. The Act applies only to oil discharges occurring after August 18, 1990.¹⁶ The explosion of the *Deepwater Horizon*, a mobile offshore drilling rig, in 2010, has illustrated the limits of the OPA in addressing massive spills.¹⁷

§ 14:87 Oil spills—Oil spill cleanup

The OPA amended § 311(11)(c)(1) of the Clean Water Act to strengthen federal authority to order removal actions and to conduct removal actions. Congress also provided harsh penalties if a discharger improperly refuses to undertake removal work.¹

The OPA significantly revises and expands contingency planning, cleanup, response, and penalty provisions for prevention and removal of oil spills. In addition to the SPCC plans required under § 311 of the Clean Water Act, the OPA requires plans for ports, vessels, and facilities, including both onshore and offshore facilities. The Coast Guard must periodically review the plans. All plans must address “worst case discharges.”² After the *Deepwater Horizon* spill, in 2011 the Department of Interior promulgated regulations governing response plans for offshore oil facilities

¹²The NCP was previously codified at 40 C.F.R. § 1510.

¹³See, e.g., H.R. Doc. No. 19, 101st Cong., 1st Sess. (June 28, 1989), Hearing on Oil Spill Liability and Compensation before the Subcomm. on Water Resources of the Comm. on Public Works and Transportation.

¹⁴OPA, Pub. L. No. 101-380, 104 Stat. 484 (1990) (codified in part in 33 U.S.C.A. §§ 2701 to 2761).

¹⁵135 Cong. Record No. 107, S. 9678–9716 (daily ed. Aug. 3, 1989) and No. 107, S. 10070–10090 (daily ed. Aug. 4, 1989), Senate debate on S. 656.

¹⁶OPA § 1017(e), 33 U.S.C.A. § 2717(e); see Randle, “The Oil Pollution Act of 1990: Its Provisions, Intent, and Likely Effects,” 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 10119 (Mar. 1990).

¹⁷See *Deepwater Horizon* and the Limits of Civil Liability, 86 Wash. L. Rev. 1 (2011).

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¹OPA § 4201, Clean Water Act § 311(b)(6), (7), 33 U.S.C.A. § 1321(b)(6)-(7).

²Requirements for OPA response plans are set forth in various parts of Title 49 of the Code of Federal Regulations, including 49 C.F.R. Parts 150, 154, 171 to 174, 176, and 194. These requirements were established by a series of interim final rules and apply to certain onshore pipelines, 58 Fed. Reg. 244 (Jan. 5, 1993); bulk packagings containing oil, specifically cargo tanks, railroad tank cars and portable tanks, 58 Fed. Reg. 6864 (Feb. 2, 1993); marine transportation-related facilities that handle, store or transport oil, 58 Fed. Reg. 7330 (Feb. 5, 1993); and certain vessels that carry oil in bulk as cargo, 58 Fed. Reg. 7330 (Feb. 5, 1993).

(along with several other requirements related to offshore drilling).³ Those rules created the Bureau of Safety and Environmental Enforcement (BSEE), which is responsible for approving the plans.⁴

The OPA limits the President's discretion to rely on private cleanup efforts, requiring the federal government to direct all cleanup efforts in the event of a major spill posing a "substantial danger to public health or welfare." Simultaneously, the Act broadens the President's authority to clean up spills by allowing federal contractors to perform the cleanup. In the case of smaller spills, the President can choose between performing the cleanup and directing or monitoring private efforts. Response officials and cleanup personnel are shielded from liability absent gross negligence or willful misconduct. The Act establishes a new system of strike teams, Coast Guard district groups, area committees, and contingency plans to respond to spills.

In response to criticism that the OPA over-federalized oil spill response, the Act requires coordination with a proposed Petroleum Industry Response Organization, renamed the Marine Spill Response Corporation. The corporation is an \$800 million fund established by industry that includes five regional centers and a research and development program.⁵

Section 1014 requires that the federal government designate the source of the discharge or threat and notify it that it is a responsible party under the statute. The responsible party then has five days to deny the designation.⁶ If it does not deny, it must advertise the procedures for submitting claims within fifteen days and lasting for thirty days. If the federal government cannot designate a responsible party, or the designated party denies responsibility, then the federal government advertises procedures for submitting claims against a fund.⁷ Section 1016 requires that responsible parties for any vessel over a certain size⁸ establish evidence of financial responsibility up to the maximum liability limitation. Claimants may proceed directly against the guarantor of vessels. Section 1015 allows contribution claims between parties, and does not cut off contribution claims where a party settles with the state or federal government.⁹

§ 14:88 Oil spills—Liability

Title I of the OPA establishes liability for oil spills. The liability provisions and funding mechanism closely model CERCLA, which was originally based on § 311 of the Clean Water Act. The § 311 of the Clean Water Act. The OPA now makes it eas-

³76 Fed. Reg. 64432 (Oct. 18, 2011); *see* 30 C.F.R. Part 254.

⁴*See* 30 C.F.R. §§ 254.2, 254.50. The rulemaking split the responsibilities of the former Minerals Management Service among BSEE, the Bureau of Ocean Energy Management (BOEM), and the Office of Natural Resources Revenue (ONRR). 76 Fed. Reg. 64432 (Oct. 18, 2011); *see also* *Native Village of Point Hope v. Salazar*, 680 F.3d 1123, 74 Env't. Rep. Cas. (BNA) 1801 (9th Cir. 2012) (challenge to approval of spill response plan under Outer Continental Shelf Lands Act mooted by approval of revised plan). BSEE is responsible for safety and environmental enforcement and permitting.

⁵Grumbles, Major Provisions, Themes of the Oil Pollution Act of 1990, *Env't Rep.* 1264 (Nov. 2, 1990).

⁶*Cf.* *Smith Prop. Holdings, 4411 Conn. LLC v. United States*, 311 F. Supp. 2d 69 (D.D.C. 2004) (holding that the Coast Guard was not obligated to reimburse a party for its cleanup costs because it was deemed to be a "responsible party" under the OPA regardless of whether the Coast Guard determined the spill source).

⁷OPA § 1014, 33 U.S.C.A. § 2714.

⁸The threshold size is three hundred gross tons; OPA § 1016, 33 U.S.C.A. § 2716.

⁹OPA § 1015, 33 U.S.C.A. § 2715.

ier for the government to establish liability against a responsible party.¹

Liability is strict, joint, and several. The terms “liable” and “liability” as defined in § 1001(17) are to be construed to be the standard under § 311 of the Clean Water Act which courts have repeatedly held is strict, joint, and several.²

§ 14:89 Oil spills—Liability—Prohibited discharges

Under the OPA a “responsible party” for a “vessel” or a “facility”¹ from which “oil” is “discharged,” or which poses a substantial threat of discharge, is liable.² “Oil” means oil of any kind, or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil.³ Hazardous substances covered under § 101(14) of CERCLA⁴ are not covered under the OPA. This indicates Congress’ intent that oil spills be cleaned up under the OPA and that hazardous releases be cleaned up under CERCLA.⁵ “Discharge” means any intentional or unintentional emission, other than natural seepage, including spilling, leaking, pumping, pouring, emitting, emptying, or dumping.⁶

Liability for discharges under the OPA is broader than under the previously applicable § 311(b) of the Clean Water Act. In fact, the OPA amended § 311(b) to require the President to determine those “quantities of oil and any hazardous substances in the discharges of which may be harmful to the public health or welfare or the environment.”⁷ EPA formerly defined “harmful quantities” as enough to either violate a state water quality standard approved by EPA under § 303 of the Clean Water Act or to “cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.”⁸ EPA and the Coast Guard have signed a Memorandum of Understanding establishing criteria for coordinating penalty actions under the OPA. In general, the agency that provides the on-site coordinator will be designated as the lead enforcement agency.⁹

§ 14:90 Oil spills—Liability—Regulated entities

Liability under § 1002(a) of the OPA applies to *each* “responsible party” for a “vessel” or a “facility” from which oil is discharged. A “responsible party” is defined ac-

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¹The Oil Pollution Act is silent as to the availability of punitive damages. Punitive damages may be available under general maritime law. *See In re Oil Spill by the Oil Rig Deepwater Horizon in the Gulf of Mexico*, on April 20, 2010, 808 F. Supp. 2d 943, 74 Env’t. Rep. Cas. (BNA) 1668, 2011 A.M.C. 2220 (E.D. La. 2011).

²*See, e.g., In re Deepwater Horizon*, 753 F.3d 570, 78 Env’t. Rep. Cas. (BNA) 1633, 2014 A.M.C. 1521 (5th Cir. 2014), adhered to, 772 F.3d 350 (5th Cir. 2014) (path that the oil takes to reach surface waters is immaterial to liability for civil penalties, which is absolute).

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¹*See* § 14:97 for discussion of the regulated entities.

²*See* § 14:88 for discussion of the liability provisions.

³OPA § 1001(23), 33 U.S.C.A. § 2701(23).

⁴42 U.S.C.A. § 9601.

⁵Randle, “The Oil Pollution Act of 1990, Its Provisions, Intent, and Likely Effects,” 21 Env’tl L Rep (Env’tl L Inst) 10119 (Mar 1990).

⁶OPA § 1001(7), 33 U.S.C.A. § 2701(7).

⁷Clean Water Act, § 311(b)(4), 33 U.S.C.A. § 1321(b)(4).

⁸40 C.F.R. § 110.3. Although § 311(b) prohibits a discharge of “oil which may affect natural resources,” EPA added the requirement that it be in harmful quantities as defined in the regulation.

⁹58 Fed. Reg. 19420 (Apr. 14, 1993).

cording to whether the discharge is from a vessel, onshore facility, offshore facility, deepwater port, pipeline, or party responsible for abandonment of any of these.¹

§ 14:91 Oil spills—Liability—Regulated entities—Vessels

Unlike previous coverage of vessels under § 311 of the Clean Water Act which left the maritime industry reasonably immune from liability for oil-spill related costs from tanker spills absent a showing of “willful negligence or willful misconduct,”¹ the OPA holds “any person owning, operating, or demise chartering”² the vessel from which a discharge occurs liable. The OPA, unlike § 311 of the Clean Water Act, requires SPCC plans for vessels.³ The Act also contains detailed provisions requiring double hulls,⁴ traffic service, and tug escort requirements, drug and alcohol abuse, and on-board manning and vessel personnel policies. Floating platforms such as the *Deepwater Horizon* are considered vessels.⁵

§ 14:92 Oil spills—Liability—Regulated entities—Onshore and offshore facilities

The term “facility” is broadly defined under the OPA. Generally, a facility is anything that stands still, or anything that moves except a vessel. Thus, almost any location from which oil is discharged and from which the oil can reach surface waters in the United States or exclusive economic zone are included.¹

Any person owning or operating an onshore facility may be liable, except political entities.² An onshore facility is broadly defined to include any facility of any kind, including motor vehicles and rolling stock located in, on, or under, any land within the United States other than submerged land.³ This is the same definition that applied under § 311 of the Clean Water Act.

Any person owning or operating an offshore facility may also be liable under

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¹Indemnity agreements between responsible parties may be invalidated by a court under specific circumstances. *See generally* *In re Oil Spill by the Oil Rig Deepwater Horizon in the Gulf of Mexico*, on April 20, 2010, 841 F. Supp. 2d 988, 2012 A.M.C. 982 (E.D. La. 2012).

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¹Clean Water Act § 311(f)(1), 33 U.S.C.A. § 1321(f)(1).

²OPA § 1001(32)(A), 33 U.S.C.A. § 2701(32)(A).

³OPA § 4202(a)(5), Clean Water Act § 311(j)(5), 33 U.S.C.A. § 1321(j)(5).

⁴The United States has taken the position that ships meeting the double hull standards in regulations of the International Maritime Organization will not be deemed in compliance with the double hull requirements of the Oil Pollution Act without express approval from the U.S. Government. 58 Fed. Reg. 39087 (July 21, 1993). The Coast Guard has also published a final rule that requires tank level or pressure monitoring (TPLM) devices to be installed on single hull tank barges and tank ships carrying oil or oil residue as cargo. 67 Fed. Reg. 58515 to 58524 (Sept. 17, 2002).

⁵*See In re Oil Spill by the Oil Rig Deepwater Horizon in the Gulf of Mexico*, on April 20, 2010, 808 F. Supp. 2d 943, 74 Env’t. Rep. Cas. (BNA) 1668, 2011 A.M.C. 2220 (E.D. La. 2011).

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¹*See also In re Needham*, 354 F.3d 340 (5th Cir. 2003) (holding that the OPA also allows recovery of cleanup costs if oil spills onto non-navigable waters that are truly adjacent to an open body of navigable water); *Rice v. Harken Exploration Co.*, 250 F.3d 264, 31 Env’tl. L. Rep. (Env’tl. L. Inst.) 20599 (5th Cir. 2001) (holding that plaintiffs may not bring claims under OPA for damages and cleanup costs associated with groundwater contamination allegedly caused by an oil and gas production facility, if there is no discharge to “navigable waters”).

²OPA § 1001(32)(B), 33 U.S.C.A. § 2701(32)(B).

³OPA § 1001(24), 33 U.S.C.A. § 2701(24).

§ 1002 of the OPA.⁴ In the case of offshore facilities, other than a pipeline or a licensed deepwater port, the responsible party is the lessee or permittee of the area in which the facility is located or the holder of a right of use and easement under state law or the Outer Continental Shelf Lands Act.⁵ Political subdivisions are not liable. An “outer Continental Shelf facility” is an offshore facility that is located, in whole or in part, on the Outer Continental Shelf and is or was used for: exploring for, drilling for, producing, storing, handling, transferring, processing, or transporting oil or some combination of these activities.⁶

The OPA drastically revised the requirements for SPCC plans at offshore and onshore facilities. The new provisions will likely require major revisions to almost every existing SPCC plan and a major expansion in private oil spill clean-up capacity.⁷

§ 14:93 Oil spills—Liability—Regulated entities—Deepwater ports, pipelines, and abandonment

The licensee of a licensed deepwater port is the responsible party.¹ In the case of a pipeline, any person owning or operating the pipeline is the responsible party.²

§ 14:94 Oil spills—Liability—Defenses and exclusions to liability

The OPA limits defenses and exclusions previously available under § 311 of the Clean Water Act and CERCLA. Section 1003(a) eliminates liability solely for: an act of God, an act of war, an act or omission of a third party other than an employee, agent, or party in a contractual relationship with the responsible party, or some combination thereof.¹ These defenses are not available if the discharge was caused by gross negligence or willful misconduct, or a violation of an applicable federal safety, construction, or operating regulation.² Formerly, under § 311(f)(1)(C) “negligence on the part of the United States Government” was a complete defense if the discharge resulted solely from that cause.

Section 1002(e) of the OPA excludes from liability: discharges permitted by a federal, state, or local permit, discharges from a public vessel or discharges from an onshore facility subject to the Trans-Alaska Pipeline Authorization Act.³ Bypasses, upsets, and permit violations resulting from the normal operations of point sources governed by National Pollutant Discharge Elimination System (NPDES) permits that were excluded under § 311 of the Clean Water Act, are no longer excluded.⁴

§ 14:95 Oil spills—Liability—Recoverable costs and damages

⁴OPA § 1002(a), § 1001(32)(C), 33 U.S.C.A. § 2701(32)(C), § 2702(a).

⁵43 U.S.C.A. §§ 1301 to 1356.

⁶OPA § 1001(25), 33 U.S.C.A. § 2701(25).

⁷OPA § 4202(a)(5), Clean Water Act, § 311(j)(5), 33 U.S.C.A. § 1321(j)(5).

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¹OPA § 1001(32)(D), 33 U.S.C.A. § 2701(32)(D).

²OPA § 1001(32)(E), 33 U.S.C.A. § 2701(32)(E).

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¹Unocal Corp. v. United States, 222 F.3d 528, 31 Env'tl. L. Rep. (Env'tl. L. Inst.) 20012 (9th Cir. 2000) (holding that a regional rail authority and its contractor were liable to the owner of a pipeline for cleanup costs the owner incurred in connection with an oil spill because the owner exercised due care with regard to the pipeline and took precautions against foreseeable acts or omissions by third parties).

²OPA of 1990 § 1003, 33 U.S.C.A. § 2703.

³43 U.S.C.A. §§ 1651 et seq.

⁴U.S. v. Locke, 529 U.S. 89, 120 S. Ct. 1135, 146 L. Ed. 2d 69, 50 Env't. Rep. Cas. (BNA) 1097, 2000 O.S.H. Dec. (CCH) P 32038, 2000 A.M.C. 913, 30 Env'tl. L. Rep. 20438, 153 O.G.R. 565 (2000)

A responsible party is liable for removal costs.¹ Removal costs include costs incurred to respond to substantial threats of discharges as well as costs to prevent, minimize, or mitigate costs from a discharge.² Removal costs, however, only apply to oil. Removal costs for hazardous substances are covered under CERCLA. Recoverable removal costs for any person other than the federal and state governments and Indian tribes, include “any removal costs incurred by any person for acts taken by the person which are consistent with the National Contingency Plan.”³ This allows and promotes private party, state, and local cleanup actions. Recoverable damages include:⁴ natural resource damages; damages to real and personal property, including loss of use of property; loss of subsistence use of natural resources;⁵ loss of tax and other revenues; loss of profits or earning capacity;⁶ and increased costs of public services.⁷

Natural resource damages, loss of tax revenue, and increased cost of public services are recoverable by governmental entities. Political subdivisions may recover natural resource damages. The other classes of damages are recoverable by private claimants or governments. It is likely that claims for natural resource damages will be subject to jury trial. Under § 1005, responsible parties are liable for interest payments beginning on the thirtieth day after the claim is presented, unless payment is delayed for reasons beyond their control or they have made an offer greater to or equal to the amount due.

A major remedial purpose of OPA was to allow a broader class of claimants for economic losses than allowed under general maritime law.⁸ Under § 1006(d) of the Act, natural resource damages are to be measured by the replacement cost of the resource, not its market value as was an option under CERCLA before *State of Ohio v. Department of Interior*.⁹ Rather, the measure of natural resource damages is to be: the cost of restoring, replacing, rehabilitating, or acquiring the equivalent of the

(OPA savings clause does not affect whether other federal statutes preempt state regulations); *Alaska Sport Fishing Ass'n v. Exxon Corp.*, 34 F.3d 769, 39 ERC (BNA) 1604 (9th Cir. 1994).

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¹OPA § 1002(a), 33 U.S.C.A. § 2702(a).

²OPA § 1001(31), 33 U.S.C.A. § 2701(31).

³OPA § 1002(b)(1), 33 U.S.C.A. § 2702(b)(1).

⁴*United States v. Hyundai Merchant Marine Co. Ltd.*, 172 F.3d 1187 (9th Cir. 1999), cert. denied, 528 U.S. 963 (1999) (holding that the government may recover the costs of monitoring a liable party's response and cleanup operations).

⁵In *In re Petition of Cleveland Tankers, Inc.*, 791 F. Supp. 669 (E.D. Mich. 1992), the court held that in order to recover damages for loss of subsistence use of natural resources, claimant must show that the natural resource was used “to obtain the minimum necessities for life.” To include any business activity within the meaning of “subsistence” would distort the plain meaning of the term. In *re Petition of Cleveland Tankers, Inc.*, 791 F. Supp. 669, 678 (E.D. Mich. 1992).

⁶The *Cleveland Tankers* court also suggested that a dock owner whose business interests were adversely affected by a vessel accident that blocked the channel may not recover for lost profits or impairment of earning capacity “due to the injury, destruction, or loss of real property, personal property, or natural resources.” In *re Petition of Cleveland Tankers, Inc.*, 791 F. Supp. 669, 678–79 (E.D. Mich. 1992). The court found that most of the claimants had not alleged “injury, destruction, or loss” to their property. In *re Petition of Cleveland Tankers, Inc.*, 791 F. Supp. 669, 697 (E.D. Mich. 1992) *S. Port Marine, LLC v. Gulf Oil Ltd. P'ship*, 234 F.3d 58, 31 Env'tl. L. Rep. (Env'tl. L. Inst.) 20344 (1st Cir. 2000) (holding that a claimant is entitled to a jury trial, but that punitive damages are unavailable under OPA).

⁷OPA of 1990 § 1002(b)(2), 33 U.S.C.A. § 2702(b)(2); *see also* *In re Oil Spill by the Amoco Cadiz*, 954 F.2d 1279 (7th Cir. 1992) (ordering payment to the French government for cleanup costs and damages to ninety towns along the coast, fishermen, and others).

⁸*In re Oil Spill by the Oil Rig Deepwater Horizon in the Gulf of Mexico*, on April 20, 2010, 808 F. Supp. 2d 943, 74 Env't. Rep. Cas. (BNA) 1668, 2011 A.M.C. 2220 (E.D. La. 2011).

⁹*Ohio v. Dep't of Interior*, 880 F.2d 432, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 21099 (D.C. Cir. 1989).

damaged natural resources; the diminution in value of those natural resources pending restoration; plus the reasonable cost of assessing those damages. The trustee for the resources is to devise a plan for the restoration, replacement, or acquisition of equivalent resources that serves as the basis for the measure of damages. Restoration rather than replacement is to be the preferred alternative.¹⁰ The National Oceanic and Atmospheric Administration (NOAA) promulgated regulations governing natural resource damage claims under the OPA.¹¹ The rules set up a process for natural resource damage assessments and divide the assessments into three different phases: preassessment, restoration planning, and restoration implementation. NOAA has also issued a number of guidance documents related to the different phases of natural resource damage assessments.¹²

§ 14:96 Oil spills—Liability—Limits on liability

Section 1004 of the OPA sets liability limits for vessels, tankers, onshore and offshore facilities, deepwater ports, and Mobile Offshore Drilling Units. Offshore responsible parties are liable for all removal costs; the caps apply only to damages. The liability limits do not apply if the discharge was caused by gross negligence or willful misconduct, or a violation of an applicable federal safety, construction, or operating regulation. They also do not apply if the responsible party refuses to follow reporting requirements, cooperate with official removal activities, or comply with an administrative or judicial order issued under Clean Water Act § 311(c) or (e) or the Intervention on the High Seas Act. The OPA does not preempt state law or remedies.¹ Therefore the liability limits apply only to claims under the OPA.

§ 14:97 Oil spills—The oil spill liability trust fund

Section 1014 of the OPA establishes an Oil Spill Liability Trust Fund like the Superfund under CERCLA, but intended to be used only where the extensive liability procedures against responsible parties fail.¹ The fund consists of \$1 billion collected from an eight cent per barrel tax on crude oil² with a \$1 billion per incident spending limit, a \$1 billion aggregate borrowing limit, and a \$500 million per incident spending limit on natural resource damages. Under § 1012, the Fund can be used, when the costs are otherwise not recoverable, for: removal and monitoring costs consistent with the NCP and which are not the result of gross negligence or

¹⁰Conference Report H. 6262, Cong. Rec. daily ed. Aug. 1, 1990.

¹¹15 C.F.R. Part 990. NOAA first issued the final regulations on January 5, 1996. 61 Fed. Reg. 440 (Jan. 5, 1996). Those initial rules were challenged in *General Elec. Co. v. U.S. Dept. of Commerce*, 128 F.3d 767, 45 Env't. Rep. Cas. (BNA) 1609, 28 Env'tl. L. Rep. 20263 (D.C. Cir. 1997). In response to certain issues from the case, NOAA promulgated amendments to the final regulations in 2002. 67 Fed. Reg. 61483 (Oct. 1, 2002).

¹²NOAA, Legal Authorities, <https://darrp.noaa.gov/legal-context>.

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¹OPA § 1018, 33 U.S.C.A. § 2718; *United States v. Locke*, 529 U.S. 89 (U.S. 2000) (holding that OPA does not prevent other federal statutes from preempting state statutes or regulations governing maritime operations). *But see* *In re Deepwater Horizon*, 745 F.3d 157, 78 Env't. Rep. Cas. (BNA) 1254, 2014 A.M.C. 2600 (5th Cir. 2014), cert. denied, 135 S.Ct. 401 (2014) (construing Clean Water Act and OPA savings clauses together to hold that state law claims were preempted by the Clean Water Act because discharge of oil did not occur within the state's borders).

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¹*See, e.g.*, *U.S. v. American Commercial Lines, L.L.C.*, 759 F.3d 420, 79 Env't. Rep. Cas. (BNA) 1065, 2014 A.M.C. 2400 (5th Cir. 2014), petition for certiorari filed, 83 U.S.L.W. 3253 (U.S. Oct. 14, 2014) (holding that the fund is the exclusive remedy for a claimant to recover removal costs from a responsible party under the OPA because the OPA does not authorize third-party complaints).

²Internal Revenue Code, 26 U.S.C.A. § 4611(a)-(c).

willful misconduct; natural resource damages; removal costs and damages resulting from oil discharged from a foreign offshore unit; payment of uncompensated removal costs and damages as defined by the Act; and administrative costs. Only the President determines which costs are eligible to be recovered from the fund. Claims against the fund are paid in the order they are filed.³ The statutes of limitations for claims against the fund are the same as for litigation claims.

§ 14:98 Oil spills—Litigation

The OPA requires that challenges to regulations promulgated to implement it must be brought in the United States Court of Appeals for the District of Columbia Circuit within ninety days of promulgation.¹ Claims for removal costs and damages must be brought in the district court in any district in which the discharge occurred, or where the damages or injury was suffered, or in which the defendant resides, may be found, has its principal office, or has appointed an agent, or in the state courts.² Damage claims must be filed within three years from when the discharge was reasonably discoverable with the exercise of due care or for natural resources, within three years after completion of the damage assessment.³ Claims for removal costs must be filed within three years after completion of the removal action,⁴ a difficult thing to judge.

§ 14:99 Oil spills—International matters

Cartage and spillage of oil on the high seas and in the territorial waters of other nations is the subject of a number of international agreements. In addition, the maritime insurance cartel is extremely centralized, and plays a significant role in shaping the law in the international arena.

Among the treaties that affect oil are the 1954 Convention on Pollution of the Sea by Oil,¹ the 1969 Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, the 1969 Convention on Civil Liability for Oil Pollution Damage,² the 1971 Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, the 1973 Convention for the Prevention of Pollution by Ships, the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region and an Oil Spill Protocol thereto, and the 1982 United Nations Convention on the Law of the Sea.³

These international agreements are complex, partially overlapping and in some cases subject to preconditions to being in force which have not yet occurred. They are, for the most part, of concern to governments and the highly concentrated petroleum shipping and offshore extraction industry, and the maritime insurance industry.

³26 U.S.C.A. § 9509(e)(3).

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¹OPA of 1990 § 1017(a), 33 U.S.C.A. § 2717(a).

²OPA of 1990 § 1017(b), 33 U.S.C.A. § 2717(b).

³OPA of 1990 § 1017(f), 33 U.S.C.A. § 2717(f).

⁴OPA of 1990 § 1017(f), 33 U.S.C.A. § 2717(f).

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¹These are technical amendments adopted in 1969 and 1971, of which the former went in force in 1978.

²This Convention is the source of the affirmative defenses and the limitations on liability contained in Clean Water Act § 311, 42 U.S.C.A. § 1321, although the United States is not a party.

³The United States is not a contracting party, but recognizes the maritime pollution provisions as customary international law.

A provision in the OPA that implemented international protocol was deleted by House and Senate conferees. The provision was replaced by a new provision that expresses support for an international liability and compensation regime,⁴ but which does not ratify any of the international agreement.

§ 14:100 Superfund

Superfund is a federal program for cleaning up chemicals and wastes whose release threatens health or the environment, as well as a colloquial name for the statute which creates a broad liability scheme applicable to private party claims in addition to EPA- or state-sponsored cleanups. The program and liability framework was created by CERCLA,¹ which was passed in 1980 growing out of concern over abandoned hazardous waste, and is based in part on the oil spill cleanup program discussed in the preceding section. The history of CERCLA is given in §§ 14:6 to 14:8.

§ 14:101 Superfund—Overview

Under CERCLA EPA may respond to “releases,” including substantial threats of release, of hazardous substances, pollutants, or contaminants.¹ Responses may be of two kinds, “removal” actions²—which are generally emergency actions or limited-duration measures—or “remedial actions,”³ which are long-term measures consistent with a permanent remedy. Together, removal and remedial actions are considered “response” actions in CERCLA parlance.⁴ When EPA receives a notice or report of a release, it assesses the situation and then chooses the appropriate response. Unlike most other environmental protection programs, state governments and private parties generally play only a limited role in the response program. EPA designs site-specific responses, and either carries them out directly, or allows (or requires) other persons to carry them out under EPA supervision.

A “release” in many ways resembles other sources of pollution regulated by federal law. It is usually a spill or disposal of contamination into groundwater or soil whose impacts must be addressed.⁵

CERCLA establishes a revolving trust fund, primarily funded by taxes on petrochemical feedstocks, crude oil, and general corporate income. Additional amounts may come from general revenues.⁶ EPA may draw on this fund to finance its response activities, including the Agency’s necessary overhead.⁷ EPA is autho-

⁴Grumbles, Major Provisions, Themes of the Oil Pollution Act of 1990, *Env’t Rep.* 1264, 1266 (Nov. 2, 1990).

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¹42 U.S.C.A. §§ 9601 to 9675. *See generally* Stever, *Law of Chemical Regulation and Hazardous Waste*.

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¹*See* CERCLA § 104(a), 42 U.S.C.A. § 9604(a).

²*See* CERCLA § 101(23), (25), 42 U.S.C.A. § 9601(23), (25).

³CERCLA § 101(24), 42 U.S.C.A. § 9601(24).

⁴CERCLA § 101(25); 24 U.S.C.A. § 9601(25).

⁵*See* CERCLA § 101(22); 42 U.S.C.A. § 9601(22).

⁶The Superfund was first financed entirely by the tax on chemicals. The initial authorization of \$1.5 billion was increased to \$8.5 billion in 1986, and the additional taxes and appropriations from general revenue were authorized. *See* SARA, Title V (amending the Internal Revenue Code of 1986, 26 U.S.C.A. §§ 59A, 4661 to 4662, 4671 to 4672); CERCLA §§ 111, 221, 42 U.S.C.A. §§ 9611, 9631.

⁷CERCLA § 111, 42 U.S.C.A. § 9611.

alized to draw on the fund for response costs “not inconsistent” with its regulations;⁸ EPA must then see that the fund is replenished by the persons liable for response costs—informally called “responsible parties” or “potentially responsible parties” (PRPs).⁹ If responsible parties decline to reimburse the fund voluntarily, EPA is authorized to bring suit.¹⁰

Other units of government and private persons are authorized or required to carry out responses themselves under some conditions; in these cases, their response costs also may be reimbursed by the fund, or directly by responsible parties.¹¹ When the fund pays for response, the fund will be subrogated to any claims against responsible parties, who always bear the ultimate liability for response costs and for damages to natural resources.¹²

The procedures for the response program are set out in the National Contingency Plan (NCP), Part 300 of EPA’s regulations in title 40 of the Code of Federal Regulations.¹³ The NCP also contains procedures for response under the OPA oil spill program, discussed above.¹⁴

EPA’s responses are triggered by reports and notices from the states, from private parties, and occasionally from its own investigations.¹⁵ An important part of the program, therefore, is the requirement that persons with knowledge of a release give notice to the government (subject to reporting thresholds based on volume). Notices are required for past and present releases to air, water, soil, or groundwater, and there are criminal penalties for failure to give the required notices.¹⁶

EPA may receive such notices or more leisurely reports from state governments, which submit releases to EPA for consideration; other reports come from members of Congress, individual citizens, and EPA’s own staff and contractors. These reports are assembled in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) which, by 1992, listed more than 35,000 sites.

Sites listed in CERCLIS receive a preliminary assessment; this is usually done by an On-Scene Coordinator (OSC), an EPA staff person assigned to a regional office. The preliminary assessment includes a review of the statutory requirements for a federal response, as well as more practical questions, such as a determination if someone else is already making a proper response.¹⁷ The preliminary assessment is a determination whether the federal government has jurisdiction, and whether there is an “imminent and substantial danger” which triggers EPA enforcement

⁸CERCLA §§ 107(a)(4)(A), 111, 42 U.S.C.A. §§ 9607(a)(4)(A), 9631.

⁹See § 14:111.

¹⁰See § 14:128.

¹¹See CERCLA § 112, 42 U.S.C.A. § 9612; see § 14:115.

¹²See CERCLA §§ 107(a), 112, 42 U.S.C.A. §§ 9607(a), 9613.

¹³Extensive revisions of the NCP were published on September 16, 1985, 50 Fed. Reg. 37624 (Sept. 16, 1985); November 20, 1985, 50 Fed. Reg. 47912 (Nov. 20, 1985); March 8, 1990, 55 Fed. Reg. 8666 (Mar. 8, 1990); and September 15, 1994, 59 Fed. Reg. 47384 (Sept. 15, 1994). References to the NCP herein cite the codified sections of the NCP revisions since 1994. See *Versatile Metals, Inc. v. Union Corp.*, 693 F. Supp. 1563, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20473 (E.D. Pa. 1988).

¹⁴See § 14:86.

¹⁵Private parties are required to notify EPA of “releases.” CERCLA § 103, 42 U.S.C.A. § 9603. The states assist in compiling a list of priority “releases” for remedial action, which must include at least one site in each state, and EPA assembles these notices and reports and other information it receives from members of Congress and its own contractors into a list of candidate sites which it gradually screens. See CERCLA § 105, 42 U.S.C.A. § 9605. The Agency has occasionally used aerial photography to identify disturbed soil for investigation.

¹⁶CERCLA § 103(a), 42 U.S.C.A. § 9603(a).

¹⁷See 40 C.F.R. § 300.400.

authority. The EPA has broad discretion to find that jurisdiction and authority exist, guided only by the criteria given in the NCP.¹⁸

The OSC's decision is documented and reviewed, when time allows, by several layers of managers in regional offices and EPA headquarters, but his or her judgment is usually accepted. OSCs will visit the site of a release if additional information is necessary to evaluate the release.¹⁹

EPA has been criticized for moving too slowly in performing these preliminary assessments, and § 116 of CERCLA, added by the SARA of 1986, required EPA to complete by January 1, 1988, a preliminary assessment of all sites in CERCLIS by October 17, 1986.

If the preliminary assessment shows federal jurisdiction, the next step is usually to inspect the site carefully and then to decide whether removal or remedial action is appropriate.²⁰ As discussed below, some imminent and substantial danger must exist if the response is to go beyond monitoring and assessment, to actual cleanup. CERCLA § 116(a)(2) requires EPA to complete site inspections by January 1, 1989, for all sites on CERCLIS on October 17, 1986.

After the inspection, EPA regional staff prepare a "scoping" study, and using this study will decide whether to seek funding for a prompt removal action, or to recommend consideration of longer-term remedial action. In many situations of imminent danger, either removal or remedial action may be appropriate, and the Agency may decide for reasons of general policy to shift releases into one or the other program. Policies vary from time to time, as the Agency's bias shifts from rapid, unfettered removals, to more elaborate and permanent remedies.

If the release is treated as a removal, the OSC will take charge and will coordinate the actions of EPA's contractors, and state and local agencies at the site.²¹ If the Agency decides the release requires the more elaborate, long-term treatment of remedial action, it will begin the elaborate process of ranking the site for the National Priority List (NPL), discussed below.²² Of course, the two are not incompatible; the OSC may decide that emergency action is needed while the site is being evaluated for longer-term cleanup.

Remedial actions are elaborate, long-term affairs, and are centrally managed. Operations on the site are directed by a Remedial Program Manager, who takes over from the OSC. This is likely to be a contractor supervised by EPA staff.

For Fund-financed responses, the cleanup work itself may be done by another EPA contractor, by a state or local government agency under a cooperative agreement with EPA, or by a private party. When private parties do the cleanup, EPA usually insists on their signing an administrative order, or judicial decree, on consent. PRPs who have no present connection with a site, and who therefore may feel that EPA could not require them to perform a cleanup, nevertheless may sign orders on consent so as to be allowed to do the cleanup themselves.²³

§ 14:102 Superfund—Overview—Removal actions

¹⁸40 C.F.R. § 300.415.

¹⁹40 C.F.R. § 300.410.

²⁰See 57 Fed. Reg. 22888 (May 29, 1992) (guidelines for exposure assessments). PRPs may volunteer to undertake investigative work under 40 C.F.R. § 300.700.

²¹40 C.F.R. § 300.415.

²²See § 14:115.

²³The question is whether CERCLA § 106, 42 U.S.C.A. § 9606, authorizes injunctive relief or administrative orders to persons who have no present connection with a release, but who may be PRPs subject to claims for reimbursement of response costs. The legislative history is not helpful and the courts are divided. See § 14:135. The procedure for entering into consent decrees for PRP cleanup was codified in CERCLA § 122, added by SARA in 1986.

The CERCLA removal program is similar in substance and procedure to the Clean Water Act § 311 oil spill removal program, on which it is based. When the OSC has finished his or her preliminary assessment, and found that a basis for federal action exists, the next step is to decide whether removal is appropriate. The factors to be considered are a list of things that an ordinary person would think of as emergencies: whether nearby populations will be exposed through food or drinking water unless action is taken; whether there are hazardous substances in bulk which may be released; whether there are threats of fire or explosion; or the like.¹ Removal actions are rapid or actions limited in duration, generally appropriate to respond to an emergency.²

CERCLA's definition of "removal" distinguishes between the measures needed to monitor and assess a release, and "actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or the environment."³ In general, a response action is authorized merely by the threat of release, but EPA must find that some danger of actual injury exists before it may go beyond monitoring and assessment and undertake actual cleanup. The NCP lists in some detail the actions which are appropriate removal actions in emergency settings. The government, for instance, may put up fences and warning signs; install dikes or pave soil surfaces to reduce runoff; temporarily relocate people; and remove drums or barrels to a safer location.⁴

The list shows by illustration that measures taken in emergencies should be of a temporary and limited kind.⁵ Removals must be limited to six months or an expenditure of one million dollars, unless the Agency makes a new determination that expenditure is still appropriate.⁶ Emergency actions may be taken without significant review inside the government and the public is afforded little or no opportunity to comment.

Removals are usually performed by contractors under EPA supervision, and only rarely by state governments or responsible parties. State and local agencies usually provide security and traditional fire-fighting services, and any relocation of local residents that may be needed.

One troublesome problem is the occasional need to demolish an isolated private residence in an emergency response. When this happens during removal at a site not listed on the NPL, EPA can only compensate the owners for the value of the house as it is when the government finds it—and a contaminated house requiring demolition is essentially worthless. At listed sites where permanent relocation is authorized, however, EPA may compensate persons by the usual standards of condemnation, when value is determined without regard to the factor that led to the condemnation.⁷ In 1995, EPA began to develop a policy addressing relocation at the request of the National Environmental Justice Advisory Council's Waste and Facil-

[Section 14:102]

¹See 40 C.F.R. § 300.415(b)(2).

²See, e.g., *New York v. Next Millennium Realty, LLC*, 732 F.3d 117, 77 Env't. Rep. Cas. (BNA) 1245 (2d Cir. 2013), as corrected, (Oct. 16, 2013) (installation of equipment to remove volatile organic compounds from groundwater was "removal" action at the time relevant to statute of limitations, despite significant duration of use, cost, and fact that it eventually became part of the remedial plan, because it was done urgently in response to concerns about imminent threat to drinking water).

³See CERCLA § 101(23), 42 U.S.C.A. § 6901(23).

⁴See 40 C.F.R. § 300.415(e).

⁵See 40 C.F.R. § 300.415(e); CERCLA § 101(23), 42 U.S.C.A. § 9601(23).

⁶See 40 C.F.R. § 300.415(b)(5); CERCLA § 101(23), 42 U.S.C.A. § 9601(23).

⁷See Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Pub. L. No. 91-646, 84 Stat. 1894 (1971) (codified at 42 U.S.C.A. §§ 4601 to 4655).

ity Siting Subcommittee. Based on this work, the EPA now works with the Army Corps of Engineers to manage the relocation process.⁸ In 1986, Congress authorized a procedure for individuals to petition for a preliminary assessment of health hazards at unlisted sites in CERCLA § 105(d).

The SARA of 1986 eroded the sharp distinction EPA was drawing between removal and remedial actions. Congress amended § 104(b) to require that removal actions “contribute to the efficient performance of any long-term remedial action” where “practicable.” This grows out of a GAO report critical of EPA’s removal actions routinely carried out without much concern for the remedial measures which would follow.

In its early versions of the NCP, EPA had created a larger category of responses that were intermediate between removals and remedial actions. “Planned removals” were abandoned by the Agency, but then revived by Congress in the SARA of 1986, which amended § 104(c)(1)(C) to allow EPA to exceed the time and money limits on removal actions where “otherwise appropriate and consistent with remedial action to be taken.”

§ 14:103 Superfund—Overview—Remedial actions

A “remedy” or “remedial action” is any action “consistent with permanent remedy.” The paragraph-long definition in § 101(24) enumerates both provisional and permanent measures, including confinement of the hazard, on-site treatment or disposal, and relocation of residents and businesses.

The characteristic remedial action is soil and groundwater cleanup. After abandoned drums have been hauled away—either in an emergency removal or in the first stages of remedy—contaminated soil and groundwater must be cleaned up.

Such cleanup is often protracted and expensive, and very little experience was available before CERCLA. EPA has been feeling its way into the new technology. At a typical site, extensive explorations are needed to establish the location of aquifers and the extent of contamination. Wells may be drilled to pump up groundwater for treatment and to prevent further spread of contaminants. Trenches may be excavated and a permeable barrier installed down to bedrock. The site may be capped with asphalt to prevent infiltration of rainwater. A treatment facility may be constructed on site. Arrangements may be made for off-site disposal of the residue of contaminants extracted from groundwater. Such remedies may take years to plan, design, and carry out.

Remedial actions must be both cost-effective and permanent, and the various levels of government and private parties interested in the result must all be allowed an opportunity to participate. Congress has devised an intricate procedure to ensure that these sometimes conflicting aims are all carried out. Each remedial action can be a good-sized pollution control program in itself, with environmental quality standards and controls devised to meet them. Where private parties carry out a cleanup, they may be subject to a site-specific regime of rules embodied in a decree, with stipulated penalties for failure to comply, and the threat of citizen suit for “violations.”

§ 14:104 Superfund—Overview—Early years of the remedial program

The remedial action program has moved very slowly. The statute was enacted on the eve of the new Reagan Administration, which accordingly had the job of setting up a complex new program. The first two years were all but lost through mismanage-

⁸See EPA, Superfund Permanent Relocation Statement of Work Template and Users’ Guide, OSWER Directive 9230.0-108 (Aug. 2004), http://www.epa.gov/superfund/community/relocation/models_ow.pdf; see also 40 C.F.R. Part 24 (setting forth federal relocation procedures).

ment and scandal. The remedial program required new policies and procedures, and there was no adequate beginning for these until 1982, when Anne Gorsuch was replaced by William Ruckelshaus as EPA Administrator. At that point, some intrinsic difficulties became evident.

The statute requires, first, that EPA must survey and rank in order of priority all potential remedial actions.¹ This is a formidable task, as there are tens of thousands of candidate sites. Second, the Agency should identify responsible parties, whose connection to abandoned sites may lie far in the past. EPA may offer them an opportunity to perform a “proper” response, but must at least offer an opportunity to comment on EPA’s plans.² Since there are many more sites than EPA can handle itself, EPA also may encourage or compel responsible parties to respond. From an early stage onward, potentially responsible parties may become interested collaborators and antagonists in the response process.

Third, state governments are given very little formal authority in the program,³ yet they are obliged to contribute at least 10 percent of the cost of any remedial action;⁴ may be treated as if they were responsible parties, liable for up to 50 percent of the cost of response at county and municipal facilities;⁵ and finally, are obliged to pay all of the long-term operating costs for containment and supervision of completed responses.⁶ In substance, the states’ interests are put into conflict with the overall program and in sympathy with the responsible parties, who may also be among their more influential citizens. Having set the EPA and the states at odds, Congress then gave each state a veto over EPA’s remedial actions, by preventing EPA from proceeding without state contributions, which cannot be compelled.⁷

The remedial program, in short, was designed with a series of internal checks and balances to protect private parties and state governments. At each release, EPA would have to manage this *ad hoc* political system before it could even begin serious work. Each site then had to be explored in detail—often extensive drilling was needed and groundwater changes had to be monitored through seasonal fluctuations. Only then could design of the remedy begin—often a first-of-a-kind groundwater containment and treatment system.

Having given EPA an all but unworkable procedure to follow in making decisions, the statute then fell silent on the largest decision of all. CERCLA gave only the most general indication of what purpose was to be accomplished, or what was to be reached in remedial actions. EPA floundered unsuccessfully with this fundamental legislative decision, and it took some years for EPA to finally accept the need to borrow environmental quality standards and goals from other environmental protection programs, a decision promptly ratified by Congress.⁸

EPA has undoubtedly added to the difficulties, of course. It began by suing most

[Section 14:104]

¹See CERCLA § 105(a)(8), 42 U.S.C.A. § 9605(a)(8).

²CERCLA § 104(a)(1), 42 U.S.C.A. § 9604(a)(1).

³See *Exxon Corp. v. Hunt*, 475 U.S. 355 (1986).

⁴See CERCLA § 104(c)(3), 42 U.S.C.A. § 9604(c)(3). The state must also “assume the availability of a hazardous waste disposal facility,” but some states have no licensed hazardous waste disposal facility within their borders.

⁵See CERCLA § 104(c)(3)(C)(ii), 42 U.S.C.A. § 9604(c)(3)(C)(ii).

⁶CERCLA § 104(c)(3)(A), 42 U.S.C.A. § 9604(c)(3)(A).

⁷No remedial action may be taken unless the state agrees beforehand to its share of the cost and other obligations. CERCLA § 104(c)(3), 42 U.S.C.A. § 9604(c)(3); see § 14:119.

⁸The remedy chosen must attain or exceed “applicable or relevant and appropriate Federal public health and environmental requirements.” 50 Fed. Reg. 44912, 47916 (Nov. 20, 1985); see also 40 C.F.R. § 300.430(e)(9)(iii)(B) (“[t]he alternatives shall be assessed to determine whether they attain applicable

of the major PRPs—indeed, the program in part grew out of those suits. The litigation was not a good premise for negotiating complex cooperative arrangements, especially as EPA was unable either to settle or specify final relief, and has often put EPA at odds with the states as well as the PRPs.

The Agency also was slow to use mobile treatment units, the best and perhaps the only likely avenue for rapid technological progress for *in situ* treatment at many Superfund sites, which the statute strongly favors.⁹

Considering all these initial difficulties, it is not surprising the remedial program was slow to begin. Work at many sites bogged down in complex multi-party negotiations and studies. The Agency installed elaborate containment systems at sites where the final remedy was unclear.

By 1986, however, EPA and the states had resolved many of the procedural problems. In the SARA,¹⁰ Congress ratified and elaborated on these solutions. Many states had adopted their own cleanup programs, and had found adequate sources of funding for their share of remedial costs,¹¹ somewhat reducing friction and threats of state veto. SARA removed many minor sources of irritation by giving the states more liberal credits toward their ten- or fifty-percent shares, relieving the states of some liability for sites passively owned, or acquired through bankruptcy or abandonment, and most importantly, shifting to Superfund and responsible parties liability for maintaining (for up to ten years) groundwater treatment systems.¹²

Friction with PRPs was more difficult to smooth. At dozens of sites, EPA had begun with suits for injunctive relief before its own cleanup program was underway; at other sites, PRPs received notices that they would be liable and came forward to try to settle their liability. In either case, questions were raised before EPA had ready answers. In the early 1980s, EPA was still learning how to explore a site adequately and was experimenting with remedies. This made it difficult to resolve disputes with PRPs. To complicate the discussions, the statute seemed to impose joint and several liability, which made it difficult to enter into partial settlements, even when the remedy could be specified, unless all the PRPs had been identified and had come to agreement.

These problems were extensively addressed in amendments to § 113, and new § 122, added by the SARA of 1986. An optional procedure was established for negotiating with PRPs, and EPA was authorized to enter partial settlements and to indemnify private party cleanup contractors. PRPs could no longer challenge EPA remedies until the Agency demanded their participation or billed them for reimbursement.

Finally, and perhaps most importantly, SARA clarified the goals of cleanup and gave EPA ample funds to pursue cleanup at many more sites without PRP participation.

Even with areas of friction smoothed, the remedial program remained extraordinarily difficult to manage. The Administrator of EPA has the final word, but EPA's regional and headquarters staff, the Department of Justice, state agencies, hundreds of PRPs, and neighborhood groups—all separately represented by counsel, and often

or relevant and appropriate requirements under federal environmental laws and state environmental or facility siting laws"). This policy was codified in the SARA, adding new § 121 to CERCLA, with substantial additions. See § 14:123.

⁹See § 14:123.

¹⁰Pub. L. No. 99-499, 100 Stat. 1613 (1986).

¹¹See Stever, *Law of Chemical Regulation and Hazardous Waste*, app. 5L (state hazardous waste laws).

¹²See generally § 14:116. Groundwater maintenance is addressed at CERCLA § 104(c)-(d)(1), 42 U.S.C.A. § 9604(c)-(d)(1).

championed by their representatives in Congress—must all play their parts in *ad hoc* pollution control programs at hundreds of sites.

§ 14:105 Superfund—Releases meriting a response

CERCLA authorizes EPA to respond in certain situations in which some environmental harm has occurred or is imminent.¹ These situations are characterized as actual or threatened “releases.” The definition of “releases” is complex, and the authority conferred is very broad.

There are two elements in a release which establish response authority: Some designated substance must be present, and there must be a release or a threat of a release of that substance to the environment.²

§ 14:106 Superfund—Releases meriting a response—Substances

Most substances designated as toxic pollutants or hazardous wastes under other environmental protection statutes are collectively called “hazardous substances” under CERCLA.¹ CERCLA authorizes EPA to respond to any release or threat of release of any hazardous substance.² EPA may also fill gaps in generic designations under other statutes by responding to imminently hazardous releases or threatened releases of “pollutants or contaminants” which have not been previously designated as toxic or hazardous.³

While the government’s response authority is very broad, private party responsibility and liability may be somewhat more limited, depending on the substances released.

§ 14:107 Superfund—Releases meriting a response—Substances—Hazardous substances

The government may respond to releases in regard to hazardous substances designated under CERCLA or other statutes; and some private parties connected with the release may be jointly responsible for cleanup and jointly liable for cleanup costs and natural resource damages.¹ At least financial liability, and perhaps also the obligation to assist in cleanup, is roughly complementary with provisions of older statutes. When a private party holds a permit under federal environmental protection law, that person will not be liable for response costs connected with “federally permitted releases.”² This seems fair, and accords with EPA’s interpretation of other statutes that compliance with permit provisions is generally compli-

[Section 14:105]

¹See CERCLA § 104(a), 42 U.S.C.A. § 9604(a).

²The court in *Fertilizer Inst. v. EPA*, 935 F.2d 1303, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 21122 (D.C. Cir. 1991), ruled that EPA’s 1989 final rule went too far in requiring those who placed a reportable quantity of a hazardous substance in an unenclosed containment structure to report a release of the substance regardless of whether a reportable quantity of the substance actually volatilizes into the air or migrates into water or soil.

[Section 14:106]

¹See CERCLA § 101(14), 42 U.S.C.A. § 9601(14); *Hassayampa Steering Comm. v. Arizona*, 942 F.2d 791 (9th Cir. 1991) (holding that states have no authority to expand the definition of “hazardous substance” under CERCLA).

²CERCLA § 104(a)(1)(A), 42 U.S.C.A. § 9604(a)(1)(A).

³CERCLA § 104(a)(1)(B), 42 U.S.C.A. § 9604(a)(1)(B).

[Section 14:107]

¹CERCLA §§ 106(a), 107(a), 42 U.S.C.A. §§ 9606(a), 9607(a); see § 14:128.

²CERCLA § 107(k), 42 U.S.C.A. § 9607(k).

ance with applicable law.³

“Federally permitted release” includes releases expressly authorized by Clean Water Act § 402 (which covers most industrial and municipal releases), by SDWA injection well and RCRA permits, or emissions authorized by state regulation under the Clean Air Act, permits, regulations, or municipal ordinances governing discharges into sewers under the Clean Water Act.⁴ Permit holders are not necessarily free from obligation to assist in the cleanup, however, when required to do so.⁵ Pesticide applicators are not required to have permits under federal law, so a separate, similar exclusion is provided for pesticide releases in accordance with federally registered label directions.⁶ Mining wastes and fly ash can be hazardous substances.⁷ The exclusion for federally permitted releases is not available, however, for persons who dispose of their wastes in accordance with federal law at RCRA-permitted facilities. The effect is to impose liability on generators who send their wastes to these facilities if a response at the facility is later required—unless, of course, the release that causes the response is in accordance with the disposal facility’s permit, which is unlikely.

§ 14:108 Superfund—Releases meriting a response—Substances—Pollutants or contaminants

The government may also respond under some conditions to releases of previously undesignated materials when they pose an imminent danger.¹ Private parties arguably may be compelled to cooperate in cleanup of such previously undesignated “pollutants or contaminants,”² but they will bear no liability for the government’s cleanup costs.³

The exclusion from liability for these emergency response actions is not explained, and may be an oversight. So many hazardous substances have been designated,

³See, e.g., 40 C.F.R. § 270.1(A)(1). Senator Randolph remarked:

[T]he congress has never said or suggested that a Federal permit amounts to a license to create threats to public health or the environment with legal immunity. However, in view of the large sums of money spent to comply with specific regulatory programs, liability for federally permitted releases . . . ought to be assessed against the permit holder under the provisions of other laws, not this bill.

126 Cong. Rec. S. 14964 (daily ed. Nov. 24, 1980) (remarks of Sen. Randolph on final text of CERCLA), reprinted in CERCLA Legislative History, Section 13:1.

⁴See CERCLA § 101(10), 42 U.S.C.A. § 9601(10). Also exempt from liability under this definition are state-authorized injections into wells to stimulate oil or gas recovery, and farmers’ applications of fertilizers, which are not so much permitted as they are exempt from regulation under the Safe Drinking Water Act and the Clean Water Act, and certain releases of radioactive materials regulated by the Nuclear Regulatory Commission or the Department of Energy. CERCLA § 101(10), 42 U.S.C.A. § 9601(10). The latter exclusion does not apply to naturally occurring radioactive materials, or radioisotopes manufactured in accelerators.

⁵The exemption for federally permitted releases appears only in the section of the statute which governs liability for the costs of cleanup in § 107. There is no corresponding exemption in the definitions or substantive provisions authorizing injunctions against persons who may aid in cleanup. See CERCLA § 106(a), 42 U.S.C.A. § 9606(a). Owners and operators accordingly may be compelled to assist in cleanup at federally permitted facilities.

⁶CERCLA § 107(i), 42 U.S.C.A. § 9607(i).

⁷Atlantic States Legal Found. v. Tyson Foods, Inc., 682 F. Supp. 1186, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20924 (N.D. Ala. 1988).

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¹CERCLA § 104(a)(1)(B), 42 U.S.C.A. § 9604(a)(1)(B) (district courts authorized to issue such orders as necessary and as the equities of the case require, where there is a release or substantial threat of release of a hazardous substance).

²See § 14:128.

³See, e.g., RCRA § 7003, 42 U.S.C.A. § 6973.

however, and the designations include so many common chemical elements, that this escape from liability will rarely be available.⁴

§ 14:109 Superfund—Releases meriting a response—Risks posed by release

If a previously designated “hazardous substance” is present at a facility, EPA may respond if there has been a release of the substance, or if there is a substantial threat of release.¹ A release is an escape into the outdoor environment by any route.² “Release” authorizing a response is not qualified by any modifiers—any release, no matter how slight, beyond some implied *de minimis* amount, is apparently sufficient to trigger EPA’s authority.³

There may be some implied limit on EPA’s authority to incur costs or impose liabilities in connection with a trivial release,⁴ but the mere presence of a release of a hazardous substance undoubtedly gives the Agency authority to investigate and to decide whether response action is needed.

The logic of this broad authorization is plain; releases of hazardous substances are regulated under other statutes, presumably because EPA or the Congress has determined that such releases may pose hazards. EPA is therefore authorized to rely on a presumption that such releases are hazardous, and to respond accordingly.

EPA may also respond if there has not yet been an actual release of a hazardous substance, but there is a “substantial threat” that a release will occur. Abandoning intact containers is a release, but the mere presence of pollutants in an attended tank is probably not sufficient to create a “substantial threat of release”—at least some evidence that an uncontrolled release is threatened seems to be needed.⁵

With regard to the previously undesignated “pollutants or contaminants,” EPA must make the additional threshold determination that a release or substantial threat of release poses an imminent and substantial danger to public health or

⁴See CERCLA § 107(a), 42 U.S.C.A. § 9607(a).

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¹See CERCLA § 104(a)(1)(A), 42 U.S.C.A. § 9604(a)(1)(A).

²Both “release” (“any spilling, leaking pumping, pouring,” etc.) and “environment” (navigable waters, coastal waters, ground waters, land surface, etc.) are laboriously defined by enumeration. See CERCLA § 101(8), (10), 42 U.S.C.A. § 9601(8), (10). *Carson Harbor Village, Ltd. v. Unocal Corp.*, 227 F.3d 1196, 51 Env’t. Rep. Cas. (BNA) 1193, 31 Env’tl. L. Rep. 20141, 154 O.G.R. 477 (9th Cir. 2000), opinion withdrawn and superseded on reh’g en banc, 270 F.3d 863, 53 Env’t. Rep. Cas. (BNA) 1321, 32 Env’tl. L. Rep. 20180 (9th Cir. 2001) (holding that a former site owner may be responsible for passive migration of hazardous substances that occurred during its tenure of ownership since the definition of the term “disposal” includes passive migration) (reversing determination as to passive migration). *Contra Servco Pac. Inc. v. Dods*, 193 F. Supp. 2d 1183, 1196, 54 Env’t. Rep. Cas. (BNA) 1765, 32 Env’tl. L. Rep. 20536 (D. Haw. 2002) (holding that a prior owner is not liable for passive migration while noting that the term “disposal” requires a demonstration of hazardous substances being affirmatively introduced into the environment). The definition of “environment” contains several overlapping or synonymous terms (groundwater as well as underground drinking water supply); the enumerations seem evidently intended to make the definitions inclusive, rather than to exclude omitted items.

³*Cf.* *United States v. Wade*, 546 F. Supp. 785, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 21051 (E.D. Pa. 1982) (sack of pennies left at cleanup site theoretically sufficient to trigger liability for entire cleanup).

⁴See 40 C.F.R. § 300.415 (preliminary assessment to ensure that authority exists for additional response actions); see also § 14:116.

⁵Some doubt about abandoned containers, raised by, e.g., *United States v. A & F Materials, Inc.*, 578 F. Supp. 1249, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20105 (S.D. Ill. 1984) (mere presence of abandoned wastes in drums is not sufficient to authorize RCRA imminent hazard action), was resolved by the SARA § 101(c), Pub. L. No. 99-499, 100 Stat. 1613 (1986) (amending CERCLA § 101(22), 42 U.S.C.A. § 9601(22)).

welfare.⁶ “Pollutant or contaminant” is very broadly defined to include any material substance capable of posing a threat.⁷ In case of apparent threat, therefore, if EPA does not have the presumption of an earlier designation on which to rely, the Agency must make an *ad hoc* determination that an imminent danger is present.

EPA was required to publish uniform guidelines for its exercise of response authority under CERCLA and other statutes, and it has done so in very general terms, enumerating the very general criteria in the NCP.⁸ EPA considers the population at risk, the potential routes of exposure, the valuable natural resources which may be threatened, and other common sense factors, including the likelihood that another agency of government will handle the situation.⁹

Beyond this recital of general criteria, neither EPA regulations nor case law cast much light on the degree of risk that releases must pose. There are few reported decisions construing EPA’s response authority under CERCLA’s § 104 imminent hazard response language, but similar language is used in § 106, specifying the conditions under which the Agency may seek injunctive relief; under that provision, the limited case law under CERCLA, and the precedents under other statutes, it has been held that only the risk of injury, and not the injury itself, must be “imminent.”¹⁰

The injury which is risked must be something more than *de minimis* damage, and probably can be analyzed in terms of the probability of the harm and the magnitude of the harm if it occurs.¹¹ Extremely improbable events, as well as trivially small damages, are therefore both *de minimis*.¹²

§ 14:110 Superfund—Releases meriting a response—Exclusions

Petroleum and petroleum products are excluded from the definitions of both “hazardous substance” and “pollutant or contaminant,”¹ although EPA may designate any or all as “hazardous substances.” This is a reminder that oil spills and chemical

⁶CERCLA § 104(a)(1)(B), 42 U.S.C.A. § 9604(a)(1)(B).

⁷CERCLA § 104(a)(2), 42 U.S.C.A. § 9604(a)(2). This is another enumeration (“any element, substance, compound, . . . mixture,” etc.).

⁸See CERCLA § 106(c), 42 U.S.C.A. § 9606(c); 47 Fed. Reg. 20664 (May 13, 1982); 55 Fed. Reg. 8666 (Mar. 8, 1990).

⁹See § 14:113.

¹⁰See *U.S. v. W.R. Grace & Co.-Conn.*, 280 F. Supp. 2d 1135 (D. Mont. 2002), *aff’d*, 429 F.3d 1224, 61 Env’t. Rep. Cas. (BNA) 1865, 35 Env’t. L. Rep. 20245, 24 A.L.R. Fed. 2d 631 (9th Cir. 2005) (EPA’s decision that public’s continued exposure to asbestos constituted an immediate risk to the public health was consistent with the NCP and not arbitrary or capricious); *U.S. v. Dickerson*, 660 F. Supp. 227, 25 Env’t. Rep. Cas. (BNA) 2087, 18 Env’t. L. Rep. 20269 (M.D. Ga. 1987), *order aff’d*, 834 F.2d 974, 26 Env’t. Rep. Cas. (BNA) 2081, 18 Env’t. L. Rep. 20305 (11th Cir. 1987) (any release poses an imminent and substantial endangerment); *cf.* *United States v. Price*, 688 F.2d 204, 213–14, 12 Env’t. L. Rep. (Env’t. L. Inst.) 21020, 21024–25 (3d Cir. 1982) (imminent hazard standard under RCRA § 7003); *see also* § 2:9.

¹¹*Cf.* *Ethyl Corp. v. EPA*, 541 F.2d 1, 6 Env’t. L. Rep. (Env’t. L. Inst.) 20267 (D.C. Cir. 1976) (en banc) (“endangerment” threshold for designation of fuel additives), *cert. denied*, 426 U.S. 941 (1976).

¹²*Cf.* *Ethyl Corp. v. EPA*, 541 F.2d 1, 6 Env’t. L. Rep. (Env’t. L. Inst.) 20267 (D.C. Cir. 1976) (en banc) (“endangerment” threshold for designation of fuel additives), *cert. denied*, 426 U.S. 941 (1976); *see* § 2:23 (general discussion of *de minimis* standards).

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¹See CERCLA §§ 101(14), 104(a)(2), 42 U.S.C.A. §§ 9601(14), 9604(a)(2). Sections 101(14) and 104(a)(2) exclude petroleum products but are not applicable to listed substances in excess of amounts occurring in the oil refining process. *See Wilshire Westwood Assoc. v. Atlantic Richfield Corp.*, 881 F.2d 801, 19 Env’t. L. Rep. (Env’t. L. Inst.) 21313 (9th Cir. 1988); *Washington v. Time Oil Co.*, 687 F. Supp. 529, 18 Env’t. L. Rep. (Env’t. L. Inst.) 21376 (W.D. Wash. 1988); *Licciardi v. Murphy Oil USA, Inc.*, No. 93-0490, 1994 WL 285051 (E.D. La. June 20, 1994), *modified*, on *recons.*, *recons. denied*, in part, No. 93-0490, 1994 WL 424375 (E.D. La. Aug. 11, 1994).

spills were treated separately by some of the bills which preceded CERCLA.² EPA decided not to enlarge Superfund to cover the ubiquitous problem of leaking gasoline tanks, and these eventually were addressed by the UST program, which was added to RCRA in 1984, and amended to include a miniature Superfund in 1986.³ There remains an odd gap in coverage, however: Vehicles carrying petroleum or petroleum products and above-ground petroleum storage tanks are not regulated by federal environmental protection law. State law often fills in the gaps, but varies widely.

There are some other idiosyncratic exclusions in the definition of “hazardous substance.” Since it tracks the designations of hazardous substances under other statutes, there is some question whether exclusions under the other statutes also carry forward into CERCLA. For instance, some high-volume wastes from cement kilns, power plants, and mining, which would otherwise be hazardous wastes under RCRA, are excluded from designation under that statute while EPA studies the advisability of regulating them. This exclusion does keep these mineral wastes from *ipso facto* inclusion as CERCLA hazardous substances, but any separately designated hazardous substances found in the mining wastes—and most have designated contaminants—will independently support both EPA’s cleanup authority and liability for responsible persons.⁴ Similarly, petroleum fractions which have been separately designated are “hazardous substances,” even though petroleum as such is excluded.⁵ EPA has generally followed this logic,⁶ but the Agency has not always been consistent; it declines to treat gasoline as a hazardous substance, even though gasoline uniformly contains benzene, a separately designated toxic chemical which is separately manufactured and added to the product.⁷ To date, courts have generally agreed that exclusions under RCRA do not extend to the definition of “hazardous substance” under CERCLA.⁸

Also excluded from the definition of release are vehicle exhaust emissions and pipeline pumping station engine emissions, both of which might extend liability to the oil and gas industry if not excluded; releases of radioactive material covered by the special provisions of other laws; and releases within a workplace, but only to the extent that they give rise to employee claims for compensation.⁹ This last, awkwardly worded exception apparently is not intended to limit EPA response authority, but to keep CERCLA from encroaching on state workers’ compensation

²See § 14:1.

³See § 14:74.

⁴See discussion of RCRA mining waste exclusion, § 14:21; see, e.g., *Eagle-Picher Indus. v. EPA*, 759 F.2d 905, 15 Env’t. L. Rep. (Env’t. L. Inst.) 20467 (D.C. Cir. 1985). Congress ratified EPA’s approach in the SARA, but required that in the future the volume of total wastes being studied under RCRA § 3001(b)(3)(A)(i) should not be considered when ranking new sites. SARA § 125 (amending CERCLA § 125, 42 U.S.C.A. § 9625).

⁵See CERCLA § 101(14), 42 U.S.C.A. § 9601(14).

⁶See, e.g., *United States v. Union Gas Co.*, 586 F. Supp. 1522, Env’t. L. Rep. (Env’t. L. Inst.) 20491 (E.D. Pa. 1984) (“coal tar,” which had caused the response, was not a listed hazardous substance, but several of its constituents had been separately designated, which was sufficient to support EPA’s response action).

⁷See CERCLA § 101(10), 42 U.S.C.A. § 9601(10); discussion in § 14:74 note 2.

⁸See, e.g., *R.R. Street & Co. Inc. v. Pilgrim Enterprises, Inc.*, 166 S.W.3d 232, 60 Env’t. Rep. Cas. (BNA) 1885, 35 Env’t. L. Rep. 20115 (Tex. 2005) (exclusions to RCRA definition of “solid waste” do not affect definition of “hazardous substance” under CERCLA); *State of N.J., Dept. of Environmental Protection and Energy v. Gloucester Environmental Management Services, Inc.*, 821 F. Supp. 999, 37 Env’t. Rep. Cas. (BNA) 1511, 23 Env’t. L. Rep. 21420 (D.N.J. 1993) (same).

⁹See CERCLA § 101(10), 42 U.S.C.A. § 9601(10); discussion in § 14:74 note 2.

laws.¹⁰ CERCLA does not create any private right of action for personal injury damages, however, so this exclusion actually serves no purpose; it is probably a remainder of an earlier draft of the bill. It may, however, create needless confusion for employees who file claims for reimbursement of costs caused by injuries incurred in response activities. Employers are probably jointly liable for such claims, the exclusion and state law notwithstanding, if they are responsible parties.

“Consumer products in consumer use” are excluded from CERCLA’s definition of “facility,”¹¹ rather than from the definition of release, which raises an interesting question about the exclusion’s effect on EPA’s response authority. The term “facility” is used to establish financial liability for some persons through their connection to the site of a release;¹² and in sections of the statute dealing with management of the remedial program. EPA’s enforcement and response authority is keyed solely to the release itself. Arguably, therefore, EPA has authority to respond itself under § 104 to releases or threatened releases caused by consumer products in consumer use, and may ask a district court for an order under § 106 to abate such hazards; the Agency so far has not attempted to assert such authority, however. The exclusion for consumer products in consumer use does not imply any restriction, of course, on the Agency’s authority to respond to releases at landfills and other facilities where consumer products may have been disposed of.

In the SARA, the extensive revision of CERCLA in 1986, Congress added a new category of exclusions which overlaps the exclusion of consumer products in consumer use. EPA may not respond “to a release or threat of release—”

- (A) of a naturally occurring substance in its unaltered form or altered solely through naturally occurring processes, or phenomena, from a location where it is naturally found;
- (B) from products which are part of the structure of, and result in exposure within, residential buildings or business or community structures; or
- (C) into public or private drinking water supplies due to deterioration of the system through ordinary use.¹³

These new exclusions, included in the Senate bill at the Administration’s request, will keep EPA from depleting the Superfund by responding to the massive, newly discovered problems of indoor air pollution from radon gas (produced by the natural decay of naturally occurring radium at building sites or in construction materials), asbestos insulation and pipe, and indoor releases of formaldehyde from insulating materials. EPA was directed to carry out a “demonstration program” of radon control methods in the “Reading Prong” area of Eastern Pennsylvania, New York, and New Jersey, in conjunction with efforts already underway there.¹⁴ Asbestos re-

¹⁰See 126 Cong. Rec. H 16427 (daily ed. Dec. 12, 1980), *reprinted in* 1 Superfund: A Legislative History 37 (M. Needham & M. Menefee eds. 1984) (remarks of Sen. Randolph).

¹¹See CERCLA § 101(9), 42 U.S.C.A. § 9601(9); *see also* § 14:111.

¹²See *Otay Land Co. v. U.E. Ltd., L.P.*, 440 F. Supp. 2d 1152 (S.D. Cal. 2006) (holding that the owners of a shooting range could not recover under CERCLA from former owners because the sources of contamination on the range—iron shots and clay targets—were consumer products in consumer use and the range was not, therefore, a facility), *aff’d in part, vacated in part*, 338 Fed. Appx. 689 (9th Cir. 2009).

¹³CERCLA § 104(a)(3), 42 U.S.C.A. § 9604(a)(3). This provision notwithstanding, however, EPA may respond to such releases if they constitute a health or environmental emergency and no other agency will respond in a timely manner. CERCLA § 104(a)(4), 42 U.S.C.A. § 9604(a)(4).

¹⁴See SARA § 118(k), 100 Stat. 1659; *see* Locke, “Promoting Radon Testing, Disclosure, and Remediation: Protecting Public Health Through the Home Mortgage Market,” 20 *Env’tl. L. Rep. (Env’tl. L. Inst.)* 10475 (Nov. 1990).

moval was addressed by a 1986 amendment to the Toxic Substances Control Act.¹⁵

These restrictions apply only to EPA response authority under § 104, and the Agency presumably retains authority to place these releases on the NPL and order responsible party cleanup.

In the Superfund Recycling Equity Act of 1999, Congress provided an exemption from CERCLA liability for those who arrange for recycling or who handle recyclable material.¹⁶ The shield provision applies to recyclers of scrap metal, glass, paper, plastic, textiles, rubber (except whole tires), and spent lead-acid, nickel-cadmium batteries, and other spent batteries. Under this provision, if a party can demonstrate by a preponderance of evidence that it satisfies the conditions set forth in the statute, then a transaction involving the selling of, or otherwise arranging for, the shipping of the items listed above will be considered an arrangement for recycling.

The shield provisions do not apply if, at the time of the recycling transaction, the person has an objectively reasonable basis to believe that (1) the material would not be recycled; (2) the material would be burned as fuel or energy recovery; or (3) the transaction occurred within ninety days from the enactment of the statute and the consuming facility was substantively not in compliance with federal, state or local environmental laws, regulations or orders. The shield provision also does not apply if: (1) the person has reason to believe that hazardous materials have been added to the recyclable material for purposes other than processing or recycling; (2) the person failed to exercise reasonable care with respect to management and handling of the recyclable material; or (3) the recyclable material contains PCBs at a concentration in excess of 50 parts per million or any other new federal standard.

Under the Small Business Liability Relief and Brownfields Revitalization Act,¹⁷ arrangers or transporters of a *de micromis* amount of waste are exempt from CERCLA liability.¹⁸ To be considered under this exemption, the arranger or transporter must demonstrate that the total amount of material containing hazardous substances that was arranged for disposal or accepted for transport was less than 110 gallons of liquid material or less than 200 pounds of solid materials, and that all or part of the disposal, treatment, or transport of the materials occurred before April 1, 2001. However, under a limited set of circumstances, the President does have the power to determine that the exemption will not apply to a particular person.

§ 14:111 Superfund—Vessels and facilities

As noted in the previous section, EPA's authority is tied to "releases," wherever they may be. The liability of private parties, however, is established through their connection with the "vessels" or "facilities" at which releases of hazardous sub-

¹⁵See Ch 16. If a facility containing asbestos is sold for demolition, rather than as real estate, the seller may be liable under CERCLA. *G.J. Leasing v. Union Elec.*, 825 F. Supp. 1363 (S.D. Ill. 1993), order vacated in part on denial of reconsideration, 839 F. Supp. 21 (S.D. Ill. 1993).

¹⁶Superfund Recycling Equity Act of 1999 § 100a(9) of Act of Nov. 29, 1999, Pub. L. No. 106-113 (codified as amended at 42 U.S.C.A. § 127); see *Cal. Dep't of Toxic Substances Control v. Interstate Non-Ferrous Corp.*, 99 F. Supp.2d 1123 (E.D. Cal. 2000) (holding that the exemption applies retrospectively but that it does not have a retroactive effect); *United States v. Mountain Metal Co.*, 137 F. Supp.2d 1267 (N.D. Ala. 2001) (holding that plaintiffs are barred from seeking contribution from recyclers even though they consolidated their private party action with a pending government cost recovery case). But see *United States v. Atlas Lederer*, 97 F. Supp.2d 830 (S.D. Ohio 2000) (holding that the scrap recycler exemption does not apply retroactively to third-party claims and cross-claims filed as part of a government action); see also *United States v. NL Indus., Inc.*, No. 91-CV-578-JLF, 2005 WL 1267419, (S.D. Ill. May 4, 2005).

¹⁷Small Business Liability Relief and Brownfields Revitalization Act of 2001, Pub. L. No. 107-118, 115 Stat. 2356.

¹⁸CERCLA § 107(o), 42 U.S.C.A. § 9607(o).

stances may occur.

The statute begins by distinguishing between “vessels” and “facilities.” Vessels are watercraft, including any “artificial contrivance” capable of being used for transportation on water.¹ Liability for releases from “vessels” is generally governed by the Clean Water Act’s spill response program and the OPA, described in the preceding section.² Such liability is governed by principles borrowed from maritime law, subject to limits which do not apply to onshore facilities.³ In 1986, SARA created a third category, “incineration vessels,” which includes hazardous waste incinerator ships, and which for most purposes are lumped with onshore facilities rather than vessels, presumably to avoid giving the floating incinerators an advantage over land-based competitors.⁴

CERCLA deals principally with onshore spills, and for these purposes the statute defines “facility” somewhat laboriously.

“[F]acility” means (A) any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, or (B) any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise [has] come to be located; but does not include any consumer product in consumer use or vessel.⁵

It is difficult to generalize from such a disparate catalogue of things at different levels of abstraction, but two ideas are visible. First, it is plain that a facility is simply any ascertainable location, including vehicles in motion.⁶ It is simply the place at which a release is threatened or occurs. Second, the catalogue shows a concern to draw this definition very broadly, despite the interaction of CERCLA with other statutes. It therefore affirmatively includes “facilities” which are granted permits to make releases or are excluded from regulation under other laws. The enumerated cases probably also show that exclusion from liability for releases in accordance with permits⁷ does not otherwise exempt facilities from liability under CERCLA for releases in violation of permits.

As noted in the preceding subsection, the exclusion of “consumer products in consumer use” does not limit EPA response authority, but does limit potential private liability.⁸

§ 14:112 Superfund—Persons affected

CERCLA is not a regulatory statute and does not generally prescribe rules for behavior, but it affects several classes of people, imposes some duties, and creates substantial liabilities.

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¹See CERCLA § 101(28), 42 U.S.C.A. § 9601(28).

²See § 14:87; *see also* § 14:128.

³See CERCLA §§ 107(c), 108(a)(4).

⁴See § 14:87.

⁵CERCLA § 101(9), 42 U.S.C.A. § 9601(9); *see United States v. Conservation Chem. Co.*, 619 F. Supp. 162, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20193 (W.D. Mo. 1985).

⁶In *re Port Auth. of N. Y. & N.J.*, Petition No. 96-5, 2001 WL 624776 (Env’tl. App. Bd. May 30, 2001) (holding that the ocean bottom is a facility because “it constitutes a site where a hazardous substance came to be located”).

⁷See § 14:107, § 14:128.

⁸See § 14:110.

§ 14:113 Superfund—Persons affected—Responsible and potentially responsible parties

One of the principal purposes of CERCLA is to fix liability for cleanup of abandoned facilities, both to fund the cleanup and to discourage the creation of further releases. This liability is fixed on “responsible parties,” the class of persons liable for the costs of response actions taken by others, and for damages to natural resources, when hazardous substances are released or there is a substantial threat of their release.¹ CERCLA provides a revolving fund for government responses; the fund is to be replenished by recoveries from responsible parties.² EPA will clean up hundreds of sites under Superfund, at a total cost which may reach ten billion dollars by 1991.³

Responsible parties may also be subject to injunctions to compel assistance in responses, even at facilities to which they have no present connection.⁴

Whether or not responsible parties may be compelled to participate in a cleanup, however, EPA will offer them an opportunity to comment before carrying out its own response, and their interest in the outcome may prompt involvement at an early stage. Responsible parties therefore are not usually passive recipients of liability, but are collaborators in the response program, sometimes over their own objections, and sometimes over EPA’s objections. This adds a dimension of difficulty and conflict to an already complex program.⁵

Responsible parties and their liability are defined in § 107. The generic term “responsible parties” is not used in this section but in § 104(a)(2), which defines EPA’s response authority; the practice of referring to the parties listed in § 107 as “responsible parties” is, however, universal. Since liability is usually disputed, and some limited defenses are available, it is also common to refer to “potentially responsible parties,” or PRPs, and this term is used in § 122, added in 1986.

“Owners and operators” of facilities are PRPs if they were owners or operators at the time of disposal of a hazardous substance at the facility, or if they are owners or operators at the time of the response, regardless of when the waste was disposed.⁶

“Owner or operator” is defined as a single phrase in a series of somewhat circular enumerations: “any person owning, operating or chartering [a] vessel; . . . any person owning or operating [a] facility,” etc.⁷ It includes common carriers transport-

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¹See CERCLA § 107(a), 42 U.S.C.A. § 9607(a); *United States v. Alcan Aluminum Corp.*, 49 F. Supp. 2d 96, 29 Env’tl. L. Rep. (Env’tl. L. Inst.) 21379 (N.D.N.Y. 1999) (holding that the retroactive application of CERCLA is not a regulatory taking).

²See CERCLA § 107(a), 42 U.S.C.A. § 9607(a); *United States v. Alcan Aluminum Corp.*, 49 F. Supp. 2d 96, 29 Env’tl. L. Rep. (Env’tl. L. Inst.) 21379 (N.D.N.Y. 1999); *see, e.g.*, 126 Cong. Rec. H11787–88 (daily ed. Dec. 3, 1983), *reprinted in* 1 Superfund: A Legislative History 164–65 (H. Needham & M. Menefee eds. 1984).

³The initial authorization of \$1.5 billion for the revolving fund had been exhausted by 1986 and a new five-year authorization of \$8.5 billion enacted.

⁴See *United States v. Wade*, 546 F. Supp. 785, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 21051 (E.D. Pa. 1982); CERCLA § 106(a), 42 U.S.C.A. § 9606(a); § 14:128.

⁵PRPs are generally required to enter a consent decree with EPA specifying the response to be carried out. The procedures for entering into such “settlements” are described in great detail in CERCLA § 122, 42 U.S.C.A. § 9622, added by the SARA of 1986, Pub. L. No. 99-499, 100 Stat. 1613. *See* § 14:135.

⁶See CERCLA § 107(a), 42 U.S.C.A. § 9607(a). The statute is not at all clear as to which owners or operators are liable. *See* 126 Cong. Rec. H11790 (daily ed. Dec. 3, 1980), *reprinted in* 1 Superfund: A Legislative History 166 (H. Needham & M. Menefee eds. 1984).

⁷See CERCLA § 101(20)(A), 42 U.S.C.A. § 9601(20)(A); *United States v. Moore*, 703 F. Supp. 455,

ing hazardous substances.⁸ In the case of an abandoned facility, the phrase includes the owners and operators immediately before abandonment; it excludes mortgagees and other holders of security interests who have not foreclosed.⁹ A trustee can be liable as an owner of property in the trust if it has the power to control the use of the trust property and knowingly allows the property to be used for the disposal of hazardous substances.¹⁰ EPA has not further defined these terms under CERCLA, but it has defined “owner” and “operator” separately in its RCRA regulations.¹¹ States¹² and municipalities¹³ may be PRPs as operators under CERCLA.

Past and present owners and operators of facilities at which hazardous substances, then or later regulated as hazardous wastes, were disposed must provide

18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21272 (E.D. Va. 1988); *cf.* *Tanglewood E. Homeowners v. Charles-Thomas, Inc.*, 849 F.2d 1568, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21348 (5th Cir. 1988). In *In re Paoli R.R. Yard PCB Litig.*, 790 F. Supp. 94 (E.D. Pa. 1992), the court held that EPA's cleanup of a contaminated site in its regulatory capacity does not make the Agency an operator under CERCLA. *But see* *Thomas v. FAG Bearings Corp.*, 50 F.3d 502 (8th Cir. 1995) (where government's involvement goes beyond supervision and rises to the level of “hands-on” operation, government may be liable). An owner can be liable for the full costs of remediating a facility even if he or she owns only a portion of the facility. *United States v. Rohm & Haas Co.*, 2 F.3d 1265, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 21345 (3d Cir. 1993), overruled by *United States v. E.I. DuPont De Nemours & Co. Inc.*, 432 F.3d 161 (3d Cir. 2005). The Ninth Circuit has held that “current” owner liability is determined at the time cleanup costs are incurred, not the time of suit. *Cal. Dep't of Toxic Substances Control v. Hearthside Residential Corp.*, 613 F.3d 910 (9th Cir. 2010).

⁸CERCLA § 101(20)(B), 42 U.S.C.A. § 9601(20)(B).

⁹CERCLA § 101(20)(A), 42 U.S.C.A. § 9601(20)(A).

¹⁰*See* *City of Phoenix v. Garbage Servs. Co.*, 827 F. Supp. 600, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 21314 (D. Ariz. 1993).

¹¹*City of Phoenix v. Garbage Servs. Co.*, 827 F. Supp. 600, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 21314 (D. Ariz. 1993). But a mortgagee who forecloses becomes a responsible party. *See* *United States v. Md. Bank & Trust Co.*, 632 F. Supp. 573, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20557 (D. Md. 1986).

¹²An interesting twist on the notion of “operator” was unsuccessfully raised by several generator defendants in a related case, *United States v. Dart Indus.*, 847 F.2d 144, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21084 (4th Cir. 1988). The court rejected their argument that the state of South Carolina should be a responsible party on account of the activities of the South Carolina Department of Health and Environmental Control, which closely worked with several owner/operators of the site for a number of years while it was increasingly contaminated, on the theory that it “controlled” their activities. *See also* *New York v. City of Johnstown*, 701 F. Supp. 33, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20578 (N.D.N.Y. 1988) (rejection a similar argument); *United States v. Freeman*, 680 F. Supp. 73, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20832 (W.D.N.Y. 1988); *compare* *United States v. New Castle County*, 727 F. Supp. 854, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20499 (D. Del. 1989) (refusing to impose liability on the state where it did not have any commercial interests at stake in regulating the site, its day-to-day actions were not “hands-on” operation, and it never owned or possessed the waste disposed of at the site), *with* *United States v. Ottati & Goss*, 694 F. Supp. 977, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20856 (D.N.H. 1988), *aff'd* in part, 900 F.2d 429 (1st Cir. 1990). Where the state's involvement at the site goes beyond regulation or supervision and rises to the level of “hands-on” operation or control, the state may be liable as a PRP. *See, e.g.*, *United States v. J.R. Stringfellow*, No. CIV 83-2501JMI, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20656 (C.D. Cal. Jan. 8, 1990) (holding state liable under CERCLA as both owner and generator where state, *inter alia*, regularly visited site, hired employees, made operational decisions, arranged for disposal and treatment of hazardous substances at site after closure, and negligently failed to remediate site); *CPC Int'l, Inc. v. Aerojet Gen. Corp.*, 731 F. Supp. 783, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20712 (W.D. Mich. 1989) (state environmental agency may be held liable as owner/operator because its actions at site, including accepting control of operation of purge wells, removal of waste, and entry into a contract arranging for disposal of waste, were more extensive than were regulation of site).

¹³*See* EPA's Interim Municipal Settlement Policy, 54 Fed. Reg. 51071 (Dec. 12, 1989) (EPA clarifies that municipalities may be PRPs); *B.F. Goodrich Co. v. Murtha*, 754 F. Supp. 960, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 20777 (D. Conn. 1991) (holding that a municipality may be held liable as a PRP if there is proof the trash contained hazardous substances), *aff'd*, 958 F.2d 1192, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20683 (2d Cir. 1992).

notices to EPA of the facilities and the substances disposed of there.¹⁴ Other than this, and the priority which EPA gives to their assistance in response actions, owners and operators are treated like other “responsible parties” liable for natural resource damages and the costs of response taken by others. Innocent purchasers of land on which releases are later found are responsible parties, but they may have a defense to liability if they had no reason to know of the contamination.¹⁵ The provisions creating the “innocent landowner” defense also strip landowners of any defense under CERCLA if they knowingly transfer property containing hazardous materials without notifying the purchaser.¹⁶ Innocent purchasers that have been defrauded into purchasing contaminated property may also seek rescission of the purchase contract under state law.¹⁷

Under the 2002 Brownfields Liability Amendments, the innocent purchaser defense was changed by the redefinition of the term “contractual relationship.”¹⁸ To demonstrate that it does not have a “contractual relationship” with the party that caused the release, the purchaser must show that it cooperated with response actions, that it complied with land use restrictions, and that it did not have reason to know that hazardous substances were released or threatened to be released at the facility. To satisfy this standard, the purchaser must demonstrate that it made all appropriate inquiries¹⁹ as to the previous ownership and uses of the facility, and that it took all reasonable steps to prevent or stop the release of contaminants. The new law also created a contiguous purchaser defense where if a person owns real

¹⁴See CERCLA § 103(c), 42 U.S.C.A. § 9603(c).

¹⁵See CERCLA § 107(a), 42 U.S.C.A. § 9607(a); see § 14:128. The SARA clarified that innocent landowners who acquired contaminated property could assert a third-party defense. CERCLA §§ 101(35), 107(b)(3), 42 U.S.C.A. §§ 9601(35), 9607(b)(3); see G. Van Velson Wolf, Jr., “The CERCLA Innocent Purchaser Defense,” 20 *Envtl. L. Rep. (Envtl. L. Inst.)* 10483 (Nov. 1990); cf. *Westwood Pharm., Inc. v. Nat’l Fuel Gas Distrib. Corp.*, 964 F.2d 85, 22 *Envtl. L. Rep. (Envtl. L. Inst.)* 20813 (2d Cir. 1992) (allowing an “innocent seller” defense where that same person would have been protected by the “innocent purchaser” defense); *New York v. Delmonte*, No. 98–CV-649, 2000 WL 432838 (W.D.N.Y. Mar. 31, 2000) (holding that a party given a property “as is” that is later found to be contaminated may not use the innocent purchaser defense against a claim of response costs if the purchaser should have been aware of the potential for contamination and failed to conduct an appropriate inquiry into the property); *City of Emeryville v. Elementis Pigments Inc.*, No. C 99-03719, 2001 WL 964230 (N.D. Cal. Mar. 6, 2001) (holding that because the city took title to the property by virtue of its eminent domain authority and satisfied all the necessary elements of the “innocent purchaser” defense, the city was not subject to CERCLA liability); *Franklin County Convention Facilities Auth. v. A. Premier Underwriters, Inc.*, 240 F.3d 534, 31 *Envtl. L. Rep. (Envtl. L. Inst.)* 20470 (6th Cir. 2001) (holding that a sublessee that failed to exercise due care after it discovered that creosote may have impacted the soil would not qualify as an innocent landowner); *Thomson Precision Ball Co. v. PSB Assoc. Liquidating Trust*, No. CIV.300CV1000, 2001 WL 10507 (D. Conn. Jan. 3, 2001) (holding a plaintiff was entitled to innocent landowner status even though it knew at the time of the sale because the seller concealed the additional contamination for which the plaintiff was seeking cost recovery). A vendor of land who sells the property “as is” can still be liable under CERCLA if the land is later found to be contaminated. *N. Star Co. v. ADM*, No. 3–92–CV-12, 1993 WL 285942 (D. Minn. July 16, 1993).

¹⁶See CERCLA § 101(35)(C), 42 U.S.C.A. § 9601(35)(C); see also *Fallowfield Dev. Corp. v. Strunk*, No. CIV. A. 89-8644, 1993 WL 157723, at *7 (E.D. Pa. May 11, 1993).

¹⁷See *Fallowfield Dev. Corp. v. Strunk*, No. CIV. A. 89-8644, 1993 WL 157723, at *17–19 (E.D. Pa. May 11, 1993) (denying rescission based on Pennsylvania law).

¹⁸CERCLA § 101(35), 42 U.S.C.A. § 9601(35); see 1325 “G” St. Assocs., LP v. Rockwood Pigments NA, Inc., No. Civ. A. DKC 2002-1622, 2004 WL 2191709 (D. Md. Sept. 7, 2004) (slip opinion) (holding that since the 2001 amendments are not retroactive a party must be judged by the innocent landowner criteria that were in effect at the time that the party bought the contaminated property).

¹⁹The “all appropriate inquiries” standard was amended to reference ASTM International’s E1527-13 “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process,” allowing E1527-13 to be used to satisfy the standard effective December 30, 2013, and to remove the ASTM International 2005 standard E1527-05 effective October 6, 2015. 78 Fed. Reg. 79319 (Dec. 30, 2013) (adding E1527-13); 79 Fed. Reg. 60087 (Oct. 6, 2014) (removing E1527-05).

property that is “contiguous to or otherwise similarly situated with respect to,” which is or may be contaminated by a release or threatened release of a hazardous substance from a property not owned by that person, the purchaser will not be considered an owner or operator under § 107.²⁰ Since January 11, 2002, a similar exception has been available for “bona fide prospective purchasers.”²¹

EPA will look first to owners and operators for assistance in response actions, but they are rarely major business enterprises; many Superfund sites are abandoned dumps. The government therefore often must look to the original generators of the wastes which are being cleaned up. As we saw earlier, CERCLA ratified the government’s litigation theory that generators of waste could be held liable for the waste’s ultimate disposition.²² And so, like other hazardous waste laws, CERCLA comes to bear on the generators of wastes.

CERCLA does not use the term “generator,” however; it provides liability for “any person” who “arranges” for transportation of hazardous substances to a facility, or who arranges for treatment or disposal of hazardous substances at a facility where there is a response.²³ However, the person must intend to dispose of the waste, not merely to sell new material for delivery or use in future processing.²⁴ The generator may be liable even if the generator did not choose the disposal site and took reasonable steps to ensure safe disposal.²⁵ (The person need not be responsible for the substance that caused the release to be a responsible party.)²⁶ Municipalities are not per se exempt from being liable as “generators” under CERCLA.²⁷

CERCLA very bluntly discourages generators from disposing of hazardous wastes

²⁰CERCLA § 107(q), 42 U.S.C.A. § 9607(q).

²¹CERCLA § 101(40), 42 U.S.C.A. § 9601(40); CERCLA § 107(r); 42 U.S.C.A. § 9607(r); *see also* *Voggenthaler v. Maryland Square LLC*, 724 F.3d 1050, 77 Env’t. Rep. Cas. (BNA) 1173 (9th Cir. 2013), amended on reh’g, (Oct. 4, 2013) (defendant failed to meet bona fide prospective purchaser exception).

²²*See* § 14:128.

²³*See* CERCLA § 107(a)(3), 42 U.S.C.A. § 9607(a)(3).

²⁴*Burlington N. & Santa Fe Ry. Co. v. United States*, 556 U.S. 599, 129 S. Ct. 1870, 173 L. Ed. 2d 812, 68 Env’t. Rep. Cas. (BNA) 1161 (2009) (no liability as an arranger for seller of a useful product who arranges for transportation that always involves the leakage of the product); *Cal. Dep’t of Toxic Substances Control v. Alco Pac., Inc.* 508 F.3d 930, 37 Env’t. L. Rep. (Env’t. L. Inst.) 20290 (9th Cir. 2007) (suppliers of lead slag and dross to a lead producer could be liable as arrangers because the transactions were arrangement for disposal rather than the sale of useful products); *New York v. Solvent Chem. Co., Inc.*, 225 F. Supp. 2d 270 (W.D.N.Y. 2002) (holding that if a party merely sells a product without any additional transaction regarding the arranging of disposal of a hazardous substance, arranger liability will not be imposed); *Centerior Serv. Co. v. Acme Scrap Iron & Metal*, 104 F. Supp.2d 729 (N.D. Ohio 2000) (holding that oil companies are not liable as arrangers for wastes generated by an independent dealer that leased the service station from the oil company absent a showing by the plaintiff that the oil companies owned or operated the dealership); *Concrete Sales & Serv., Inc. v. Blue Bird Body Co.*, 211 F.3d 1333 (11th Cir. 2000) (holding that customers of an electroplating operation may not be held liable as arrangers because the customers did not have enough knowledge about nor control over the electroplating company’s waste disposal practices); *Edward Hines Lumber Co. v. Vulcan Materials Co.*, 685 F. Supp. 651, 18 Env’t. L. Rep. (Env’t. L. Inst.) 21223 (N.D. Ill. 1988), *aff’d* on other grounds, 861 F.2d 155, 19 Env’t. L. Rep. (Env’t. L. Inst.) 20187 (7th Cir. 1988); *But see Jones-Hamilton Co. v. Beazer Materials & Servs.*, 973 F.2d 688 (9th Cir. 1992) (imposing “arranged for disposal” liability on a chemical company that sent raw materials to a pesticide formulator); *United States v. Aceto Agric. Chems. Corp.*, 872 F.2d 1373, 19 Env’t. L. Rep. (Env’t. L. Inst.) 21038 (8th Cir. 1989) (holding that pesticide active ingredient manufacturer may be liable for disposal of the ingredient by the pesticide formulator); *In re Voluntary Purchasing Groups, Inc. Litig.*, No. Civ.A. 3:94-CV-2477-H, 2002 WL 31156535 (N.D. Tex. Sept. 26, 2002) (intent to dispose of waste is a relevant factor when determining arranger liability, but is not necessarily determinative).

²⁵*O’Neil v. Piccillo*, 682 F. Supp. 706, 18 Env’t. L. Rep. (Env’t. L. Inst.) 20893 (D.R.I. 1988).

²⁶*See United States v. Monsanto Co.*, 858 F.2d 160, 19 Env’t. L. Rep. (Env’t. L. Inst.) 20085 (4th Cir. 1988), cert. denied, 490 U.S. 1106 (1989); *United States v. Wade*, 546 F. Supp. 785, 12 Env’t. L. Rep. (Env’t. L. Inst.) 21051 (E.D. Pa. 1982).

²⁷*N.J. Dep’t of Env’t. Protection v. Gloucester Env’t. Mgmt. Servs., Inc.*, 23 Env’t. L. Rep. (Env’t.

on land. Other “federally permitted releases” are excused from liability; most permitted discharges into sewer systems or into the air are excluded from the definition of releases that may create liability. But disposal of wastes at a RCRA permitted landfill is not a defense to CERCLA liability (unless the release which causes the response was expressly permitted in the facility’s RCRA permit, which is unlikely).²⁸ If EPA later determines that a permitted landfill is a hazard, a generator who sent wastes there may be liable for part of the cleanup, even if the generator was without fault and the landfill was properly permitted.²⁹ There is an exception, however, for persons who are carrying out Superfund cleanups approved by EPA. Such persons may take wastes from a Superfund response site to a land disposal facility, if the facility is operating in compliance with RCRA, and if EPA has properly selected the off-site disposal remedy.³⁰

The net of liability for responsible parties is cast a little wider and also includes persons who accept hazardous substances from a generator and then determine the substance’s disposition. It was formerly a common practice for truckers or disposal companies simply to receive wastes, with nothing said about the site for disposal. Transporters who choose the site of disposal under such arrangements are also responsible parties.³¹

Recent decisions have cast an even wider net on liability. For example, a Canadian corporation that discharged smelter slag into the Columbia River in Canada claimed that CERCLA could not be applied extraterritorially. However, the Ninth Circuit held that, because hazardous materials leached from the slag and were carried into the United States, the release occurred in the United States and that the case, therefore, involved a domestic application of CERCLA.³² Corporate officers may be held personally liable under CERCLA if they could have prevented or significantly abated a hazardous waste discharge.³³ Successor companies can be held liable under CERCLA according to federal common law principles.³⁴ A secured cred-

L. Inst.) 21420 (D.N.J. 1993).

²⁸See CERCLA §§ 101(10), 107(b), 42 U.S.C.A. §§ 9601(10), 9607(b).

²⁹CERCLA §§ 101(10), 107(b), 42 U.S.C.A. §§ 9601(10), 9607(b).

³⁰See CERCLA §§ 121(d)(3), 122(f)(2), 42 U.S.C.A. §§ 9621(d)(3), 9622(f)(2) (added by SARA in 1986).

³¹See CERCLA § 107(a)(4), 42 U.S.C.A. § 9607(a)(4); *Ascon Props., Inc. v. Mobil Oil Co.*, No. CV 85-4253, 34 ERC (BNA) 1177, 1991 WL 340635 (C.D. Cal. Sept. 17, 1991); *Alcatel Info. Sys., Inc. v. Arizona*, 778 F. Supp. 1092 (D. Ariz. 1991); *United States v. W. Processing*, 756 F. Supp. 1416, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 20855 (W.D. Wash. 1991).

³²*Pakootas v. Teck Cominco Metals, Ltd.*, 452 F.3d 1066, 36 Env’tl. L. Rep. (Env’tl. L. Inst.) 20130 (9th Cir. 2006).

³³See *Carter-Jones Lumber Co. v. LTV Steel Co.*, 237 F.3d 745, 31 Env’tl. L. Rep. (Env’tl. L. Inst.) 20406 (6th Cir. 2001) (holding that a corporate officer who was the company’s sole shareholder and controlled the transactions that constituted the CERCLA violations is personally liable for CERCLA cleanup costs under state common law), cert. denied, 533 U.S. 903 (2001); *Riverside Market Dev. Corp. v. Int’l Bldg. Prods., Inc.*, 931 F.2d 327, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 21025 (5th Cir. 1991) (holding that corporate officers may be liable if they direct or personally participate in improper disposal); *United States v. Farber*, No. 86-3736 (D.N.J. Apr. 27, 1992) (finding a major stockholder and officer not liable because no evidence proved she had exercised actual control at the facility); *Kelley v. ARCO Indus. Corp.*, 723 F. Supp. 1214, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20264 (W.D. Mich. 1989); *United States v. Mottolo*, 695 F. Supp. 615, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20442 (D.N.H. 1988).

³⁴See *PCS Nitrogen Inc. v. Ashley II of Charleston LLC*, 714 F.3d 161, 76 Env’t. Rep. Cas. (BNA) 1683 (4th Cir. 2013), cert. denied, 134 S. Ct. 514, 187 L. Ed. 2d 366, 77 Env’t. Rep. Cas. (BNA) 2096 (2013) (relying on common law to find successor is a PRP); *United States v. Davis*, 261 F.3d 1 (1st Cir. 2001) (holding that state contract law determines successor-in-interest liability for cleanup costs as there is no federal objective that would be frustrated); *United States v. Chrysler Corp.*, No. 88-341, 31 ERC (BNA) 1997, 1990 WL 127160 (D. Del. Aug. 28, 1990). *But see* *United States v. Gen. Battery Corp., Inc.*, 423 F.3d 294 (3d Cir. 2005) (holding that a federal rule of successor liability must be ap-

itor is liable under CERCLA if its involvement with the management of the facility is sufficiently broad to support the inference that it could affect hazardous waste disposal decisions.³⁵

Under this standard of secured lender liability, first articulated by the Eleventh Circuit in 1990 in *United States v. Fleet Factors Corp.*, a secured creditor may incur liability without being an operator if it participates in the financial management of a facility “to a degree indicating a capacity to influence the corporation’s treatment of hazardous waste.”³⁶ According to the Eleventh Circuit, *Fleet Factors*, which held indicia of ownership through a deed of trust, could be liable if it was either the operator of the facility or if it lost the benefit of the secured creditor exemption by participating in the financial management of the facility to the degree articulated by the court.³⁷

The court rejected *Fleet Factor*’s argument that its actions should not subject it to Superfund liability because they were taken to protect its security interest through foreclosure, stating that “[w]hat is relevant [for the imposition of liability] is the nature and extent of the creditor’s involvement with the facility, not its motive.”³⁸ In attempting to explain the practical significance of its standard for lenders, the court stated that its decision should not preclude a secured creditor from monitoring its debtor’s business nor prohibit a lender from becoming “involved in occasional and discrete financial decisions relating to the protection of its security interest.”³⁹

The Eleventh Circuit’s decision is a significant one for secured creditors. First, the Eleventh Circuit created a standard of liability for lenders that is lower than the standard previously articulated by the district courts. Second, the court found that the touchstone for determining whether a lender has participated in a facility’s management is significant participation in *financial* management, as opposed to participation in hazardous waste management. As indicated by the court, lenders are well-advised to investigate potential borrowers’ hazardous waste management practices and consider environmental risks when structuring transactions.⁴⁰

In 1992, in response to pressure from the lending community, EPA issued a

plied in CERCLA cases to ensure uniformity); *New York v. Nat’l Servs. Indus., Inc.*, 352 F.3d 682 (2d Cir. 2003) (the substantial continuity test is invalid in CERCLA successor liability cases because it departs from federal common law).

³⁵See *United States v. Fleet Factors Corp.*, 901 F.2d 1550, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20832 (11th Cir. 1990), superseded by statute as stated in *Monarch Tile Inc. v. City of Florence*, 212 F.3d 1219, 1221 & n.2 (11th Cir. 2000) (“While much of *Fleet Factors*’ reasoning and holding remain intact, Congress has abrogated the part of *Fleet Factors*’ holding that deals with the liability of lenders who participate in the management of properties operated by polluting firms.”).

³⁶*United States v. Fleet Factors Corp.*, 901 F.2d 1550, 1557, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20832 (11th Cir. 1990).

³⁷*United States v. Fleet Factors Corp.*, 901 F.2d 1550, 1559, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20832 (11th Cir. 1990).

³⁸*United States v. Fleet Factors Corp.*, 901 F.2d 1550, 1560, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20832 (11th Cir. 1990).

³⁹*United States v. Fleet Factors Corp.*, 901 F.2d 1550, 1558, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20832 (11th Cir. 1990).

⁴⁰*United States v. Fleet Factors Corp.*, 901 F.2d 1550, 1558, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20832 (11th Cir. 1990). Other cases addressing the liability of secured lenders under CERCLA include *Guidice v. BFG Electroplating & Mfg. Co.*, 732 F. Supp. 556, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20439 (W.D. Pa. 1989) (lender that foreclosed on contaminated property could be held liable for remedial costs if it participated in day-to-day operational activities at the site); *United States v. Nicolet*, 712 F. Supp. 1193 (E.D. Pa. 1989) (managerial participation and operational involvement must be present for mortgagee to be liable under CERCLA); *United States v. Md. Bank & Trust Co.*, 632 F. Supp. 573 (D. Md. 1986) (bank that foreclosed on a hazardous waste site and held the property for a period of time was an owner/operator under CERCLA).

Lender Liability Rule⁴¹ intended to clarify and limit the extent of lender liability under CERCLA and *Fleet Factors*. Although subsequently struck down by the D.C. Circuit,⁴² EPA's rule provided guidance on what a lender could or could not do without voiding the "secured creditor exemption." Before making the loan, a lender could: (i) conduct an environmental assessment; (ii) decide to take a security interest in contaminated property; (iii) require a cleanup; and (iv) include environmental representations and covenants in loan documentation.

During the life of the loan, a lender could: (i) police the borrower's compliance with environmental laws; (ii) require a cleanup; (iii) perform a cleanup consistent with CERCLA's regulations or at the direction of a government representative; (iv) conduct on-site inspections; and (v) regularly monitor the borrower's facility, business, or financial condition. However, the lender could not "participate in management," which the rule defined as exercising either: (i) decision-making control over the borrower's environmental compliance so that the lender takes responsibility for the borrower's hazardous substance handling or disposal practices; or (ii) control at the management level encompassing day-to-day decisionmaking at the borrower's enterprise regarding environmental compliance or substantially all operational (not financial or administrative) matters.

During a work-out period, the lender could: (i) restructure or renegotiate the loan; (ii) charge additional interest; (iii) exercise forbearance; (iv) give specific or general financial advice; (v) exercise a legal right or remedy; and (vi) perform a cleanup consistent with CERCLA regulations or at the direction of a government representative. The lender could not "participate in management."

During foreclosure and beyond, if the lender tried to sell or otherwise divest itself of the property in a reasonably expeditious manner using commercially reasonable means, the lender could: (i) foreclose on property and maintain business activities; (ii) wind up operations; (iii) take cleanup actions consistent with CERCLA's regulations or at the direction of a government representative; or (iv) preserve, protect, or prepare the property for sale or other disposition. Permissible (but not required) steps for accomplishing this include listing the property with a broker, dealer, or agent within twelve months of foreclosure, or advertising it on a monthly basis. The lender could not: (i) foreclose if it had previously participated in management; or (ii) at any time after six months following foreclosure, had outbid, rejected, or failed to act upon (within ninety days of receipt) a written bona fide firm offer of fair consideration for the property unless the lender was required, in order to avoid liability under the law, to make a higher bid, to obtain a higher offer, or to seek or obtain an offer in a different manner.

The Lender Liability Rule was interpreted in *Kelley ex rel. Michigan Natural Resources Comm'n v. Tiscornia*.⁴³ In that case, in which the court noted several activities in which a secured creditor could engage without losing the protection of the exemption. These activities included sitting on a board of directors, where the board's function was to deal with pension and capital spending issues, rather than operational issues or environmental compliance; monitoring the debtor's business; imposing conditions for continued financing; insisting on outside management under the threat of calling a loan; granting incentives to the facility manager to pay down the debt to the lender; engaging in regular communication with the facility manager; monitoring daily the debtor's financial situation; and suggesting actions the debtor

⁴¹57 Fed. Reg. 18344 (Apr. 29, 1992).

⁴²See discussion of *Kelley v. EPA*, 15 F.3d 1100, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20511 (D.C. Cir. 1994), reh'g denied, 25 F.3d 1088, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21204 (D.C. Cir. 1994).

⁴³*Kelley ex rel. Mich. Natural Res. Comm'n v. Tiscornia*, 810 F. Supp. 901, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20424 (W.D. Mich. 1993), aff'd, 104 F.3d 361, 44 Env'tl. L. Rep. (Env'tl. L. Inst.) 1951 (6th Cir. 1996).

should take to resolve its financial difficulties.⁴⁴ The foreclosure period provisions of the rule were narrowly construed in the continuing litigation involving the Fleet Factors Corporation.⁴⁵

On February 4, 1994, however, the D.C. Circuit, in *Kelley v. EPA*,⁴⁶ vacated the Lender Liability Rule. The court held:

Congress, by providing for private rights of action under § 107, has designated the courts and not EPA as the adjudicator of the scope of CERCLA liability. And Congress did so quite deliberately. *See* 126 Cong. Rec. 30,932 (1980) (statement of Sen. Randolph) (“It is intended that issues of liability not resolved by this act, if any, shall be governed by traditional and evolving principles of common law.”).⁴⁷

In addition to invalidating the rule as a legislative rule, which would be binding, the court held that EPA’s interpretation of statutory liability should not be given judicial deference.⁴⁸

The legal impact of the *Kelley* decision may be somewhat limited by the fact that several court decisions issued after the promulgation of the lender liability rule have found lenders to be exempt from liability under the plain language of CERCLA’s secured creditor exemption.⁴⁹

While Congress had not provided statutory clarification of the scope of the secured creditor exemption in the wake of *Kelley*, several agencies, including the Federal Deposit Insurance Corporation, the Federal Reserve, the Office of the Comptroller of

⁴⁴*See* *N. Doran, Inc. v. Key Bank of Me.*, 15 F.3d 1, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20492 (1st Cir. 1994) (the existence of control over a site assessment is insufficient to breach security interest exemption); *Waterville Indus., Inc. v. Finance Auth. of Me.*, 984 F.2d 549, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 20752 (1st Cir. 1993) (prior owner holding title to property under a sale-and-lease-back arrangement and who divested itself of full ownership within reasonable time of six months was protected under security interest exemption); *United States v. McLamb*, 5 F.3d 69, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 21500 (4th Cir. 1993) (bank that moved quickly to sell the property after foreclosure falls under statutory secured creditor exemption); *Bergsoe Metal Corp. v. East Asiatic Co.*, 910 F.2d 668, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 21229 (9th Cir. 1990) (bond issuer holding deed to property as part of transaction, whose sole purpose was to provide financing, and who did not participate in actual management, is not liable as an “owner” under CERCLA); *Ashland Oil, Inc. v. Sonford Prods. Corp.*, 810 F. Supp. 1057, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 20387 (D. Minn. 1993) (lender that only took title to assets for a few weeks to facilitate transfer of assets and to protect its security interest was not an “owner”; lender’s periodic review of debtor’s finances was insufficient to constitute “participation in management”; lender that exercised no decision-making control over environmental compliance decisions was not an “arranger”).

⁴⁵*United States v. Fleet Factors Corp.*, 821 F. Supp. 707, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 20961 (S.D. Ga. 1993).

⁴⁶*Kelley v. EPA*, 15 F.3d 1100, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20511, reh’g denied, 25 F.3d 1088, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 21204 (D.C. Cir. 1994). *But see* *Ashland Oil, Inc. v. Sonford Prods. Corp.*, 810 F. Supp. 1057, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 20387 (D. Minn. 1993) (holding lender liability rule consistent with the statutory language).

⁴⁷*Kelley v. EPA*, 15 F.3d 1100, 1107–08, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20511, 20513 (D.C. Cir. 1994).

⁴⁸*Kelley v. EPA*, 15 F.3d 1100, 1108, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20511, 20514 (D.C. Cir. 1994).

⁴⁹*See, e.g.,* *Waterville Indus., Inc. v. Finance Auth. of Me.*, 984 F.2d 549, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 20752 (1st Cir. 1993) (holding that secured creditor exemption applied despite the fact that the secured creditor sold property without full disclosure of its contaminated nature); *United States v. McLamb*, 5 F.3d 69, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 21500 (5th Cir. 1993) (holding that a bank was exempt from liability even though, due to lack of potential buyers at a foreclosure sale, it purchased property and owned it for several months); *N. Doran, Inc. v. Key Bank of Me.*, 15 F.3d 1, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20492 (1st Cir. 1994) (same); *Z&Z Leasing, Inc. v. Graying Reel, Inc.*, 873 F. Supp. 51, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 20802 (E.D. Mich. 1995) (bank not liable under CERCLA even though it ordered environmental assessment, required removal of USTs, and contacted state authorities).

the Currency, and the Office of Thrift Supervision, issued guidance documents to assist lenders and other fiduciaries in untangling the CERCLA lender liability web.

In 1996, Congress clarified the scope of the CERCLA secured creditor exemption by enacting the Asset Conservation, Lender Liability, and Deposit Insurance Protection Act (“ACA”), which was significantly similar to the 1992 EPA Lender Liability Rule.⁵⁰ The ACA applies to any claim that had not been finally adjudicated as of the date of enactment, September 30, 1996.⁵¹ Under the ACA, a lender who holds indicia of ownership in a vessel or facility primarily to protect its security interest and who does not actually participate in the vessel’s or facility’s management prior to foreclosure is not an “owner or operator” subject to CERCLA liability.⁵²

The ACA broadens the protection available to secured creditors by requiring that a lender *actually* participate in the management or operational affairs of a vessel or facility and not merely have the “capacity to influence, or the unexercised right to control, vessel or facility operations.”⁵³ A lender shall be considered to participate in management *only* if, while the borrower is in possession of the vessel or facility, the lender:

- (I) exercises decision-making control over the environmental compliance related to the vessel or facility, such that the lender has undertaken responsibility for the hazardous substance handling or disposal practices related to the vessel or facility; or
- (II) exercises control at a level comparable to that of a manager of the vessel or facility, such that the lender has assumed or manifested responsibility—
 - (aa) for the overall management of the vessel or facility encompassing day-to-day decision-making with respect to environmental compliance; or
 - (bb) over all or substantially all of the operational functions (as distinguished from financial or administrative functions) of the vessel or facility other than the function of environmental compliance.⁵⁴

The ACA also lists activities that do not constitute “participation in management” and thus do not void the secured creditor exemption. Such activities include:

- performing an act or failing to act prior to the time at which a security interest is created in a vessel or facility;
- holding a security interest or abandoning or releasing a security interest; and
- including in the terms of an extension of credit, or in a contract or security agreement relating to the extension, a covenant, warranty, or other term or condition that relates to environmental compliance;
- monitoring or enforcing the terms and conditions of the extension of credit or security interest;
- monitoring or undertaking one or more inspections of the vessel or facility;
- requiring a response action or other lawful means of addressing the release or threatened release of a hazardous substance in connection with the vessel or facility prior to, during, or on the expiration of the term of the extension of credit;
- providing financial or other advice or counseling in an effort to mitigate, prevent, or cure default or diminution in the value of the vessel or facility;
- restructuring, renegotiating, or otherwise agreeing to alter the terms and conditions of the extension of credit or security interest, exercising forbear-

⁵⁰Pub. L. No. 104-208, Subtitle E, 110 Stat. 3009, *codified as amended at* 42 U.S.C.A. §§ 9601(E)-(G), 9607(n), 6991b(h)(9).

⁵¹Pub. L. No. 104-208, § 2505.

⁵²See CERCLA § 101(20)(E)(i), 42 U.S.C.A. § 9601(20)(E)(i).

⁵³See CERCLA § 101(20)(F)(i), 42 U.S.C.A. § 9601(20)(F)(i).

⁵⁴See CERCLA § 101(20)(F)(ii), 42 U.S.C.A. § 9601(20)(F)(ii).

- ance;
- exercising other remedies that may be available under applicable law for the breach of a term or condition of the extension of credit or security agreement; or
- conducting a response action under § 9607(d) of CERCLA or under the direction of an on-scene coordinator appointed under the NCP.⁵⁵

The ACA also provides protection to lenders who foreclose on their security interest. The term foreclosure is broadly defined, and includes any formal or informal manner by which a lender acquires, for subsequent disposition, title to or possession of a facility or vessel in order to protect its security interest.⁵⁶ A lender, after foreclosure, must seek to sell, re-lease (in the case of a lease finance transaction), or otherwise divest from the facility or vessel at the earliest practicable, commercially reasonable time, on commercially reasonable terms, in order to continue to qualify for the secured creditor exemption.⁵⁷ However, the ACA allows the lender to maintain business activities, wind-up operations, undertake a response action under CERCLA § 107(d)(1) or under the guidance of an on-scene coordinator appointed under the NCP, or take any other measure to preserve, protect, or prepare the facility prior to sale or disposition.⁵⁸ The ACA does not state a time requirement for selling the vessel or facility, or specify which activities after foreclosure would cause the secured creditor exemption to be lost.

Few courts have examined the ACA.⁵⁹ In *Kelley v. Tiscornia*,⁶⁰ the Sixth Circuit affirmed the district court's decision, as discussed above, that monitoring the finances of borrower, being represented on the borrower's board of directors, and pressuring the borrower to retain a specialist did not constitute participation in the management of the facility under the ACA.⁶¹ The court also stated that the ACA effectively codified EPA's 1992 Lender Liability Rule.⁶²

The EPA has issued a policy statement regarding the similarities between the 1992 Lender Liability Rule and the ACA.⁶³ The Agency stated that where the rule and preamble provide additional clarification of the same or a similar term used in the ACA, the EPA intends to treat such portions of the rule and preamble as

⁵⁵See CERCLA § 101(20)(F)(iv), 42 U.S.C.A. § 9601(20)(F)(iv).

⁵⁶See CERCLA § 101(20)(G)(iii), 42 U.S.C.A. § 9601(20)(G)(iii).

⁵⁷See CERCLA § 101(20)(E)(ii), 42 U.S.C.A. § 9601(20)(E)(ii).

⁵⁸See CERCLA § 101(20)(E)(ii), 42 U.S.C.A. § 9601(20)(E)(ii).

⁵⁹See, e.g., *Monarch Tile, Inc. v. City of Florence*, 212 F.3d 1219 (11th Cir. 2000) (holding that a city that took title to a property for the purpose of securing repayment of development bonds qualifies for the secured creditor exemption); *Palmtree Acquisition Corp. v. Neely*, 771 F. Supp. 2d 1186, 73 Env't. Rep. Cas. (BNA) 1393 (N.D. Cal. 2011) (complaint against trustee dismissed because his involvement was limited to role as trustee and no exceptions to the fiduciary exemption were plausibly alleged); *Stearns & Foster Bedding Co. v. Franklin Holding Corp.*, 947 F. Supp. 790 (D.N.J. 1996) (noting that amendments are not relevant to the disposition of the case); *F.P. Woll & Co. v. Fifth & Mitchell Street Corp.*, No. CIV. A. 96-5973, 1997 WL 535936 (E.D. Pa. July 31, 1997) (denying defendant's motion to dismiss based on the amended secured creditor exemption because plaintiff's allegation that the bank was an "operator" of the facility cannot be disregarded without inquiring into the facts); *United States v. Marvin Pesses*, 794 F. Supp. 151, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20076 (W.D. Pa. 1998) (holding that the lender's efforts after borrower's default was commercially reasonable and thus the lender was within the secured creditor exemption).

⁶⁰*Kelley v. Tiscornia*, 104 F.3d 361 (6th Cir. 1996) (unpublished table opinion).

⁶¹*Kelley v. Tiscornia*, 104 F.3d 361 (6th Cir. 1996).

⁶²*Kelley v. Tiscornia*, 104 F.3d 361 (6th Cir. 1996).

⁶³62 Fed. Reg. 36424 (July 7, 1997).

interpretative guidance.⁶⁴

Parent corporations have been held liable under CERCLA for the activities of their subsidiaries, but the reasoning underlying these decisions has varied. In several cases, the courts have read the definition of “owner or operator” broadly to reach parent corporations whose subsidiaries were liable under the statute.⁶⁵ Other courts have refused to impose direct liability on parent corporations and instead applied traditional corporate law principles under which a parent will be liable for its subsidiary’s actions only upon a showing that the subsidiary functions merely as an “alter ego” of the parent rather than a separate business entity.⁶⁶ For example, in the first reported case to discuss the CERCLA liability of a parent corporation in any depth, *Joslyn Corp. v. T.L. James & Co.*,⁶⁷ the district court refused to extend CERCLA “owner” liability to parent corporations and, applying a typical alter ego analysis, also refused to pierce the corporate veil because there was no proof that the parent had the requisite complete domination of finances, policies, and practices to render the subsidiary a “mere conduit” of the parent. Still other cases have applied a “public convenience, fairness and equity” test, which focuses less on corporate form than the alter ego doctrine and more on the purpose of the statute.⁶⁸

The Supreme Court has addressed the proper basis for holding a parent corporation liable. In *United States v. Bestfoods*,⁶⁹ the Court held that a parent corporation may be held (1) derivatively liable as an “owner” or “operator” when (but only when) the corporate veil is pierced under the applicable state law, or (2) directly liable as an “operator” when it actively participates in and exercises control over the operations of a subsidiary’s facility. As to direct liability, the Court stated that a parent corporation “must manage, direct, or conduct operations specifically related to pollution, that is, operations having to do with the leakage or disposal of hazardous waste, or decisions about compliance with environmental regulations” in order to be held liable. The Court rejected a line of cases that held a parent corporation directly liable based on “whether it actually operated the business of its subsidiary,” finding that this “actual control” test incorrectly fused direct and indirect liability. Rather,

⁶⁴See 62 Fed. Reg. 36424, 36425 (July 7, 1997).

⁶⁵Cases extending CERCLA liability to parent corporations on the theory that they qualify as owners or operators include *Colorado v. Idarado Mining Co.*, 707 F. Supp. 1227, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20794 (D. Colo. 1989), rev’d, 916 F.2d 1486 (10th Cir. 1990); *Vermont v. Staco, Inc.*, 684 F. Supp. 822, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20589 (D. Vt. 1988), vacated in part, Civ. No. 86–190, 1989 WL 225428 (D. Vt. Apr. 20, 1989); *Idaho v. Bunker Hill Co.*, 635 F. Supp. 665, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20879 (D. Idaho 1986).

⁶⁶See, e.g., *New York State Elec. and Gas Corp. v. FirstEnergy Corp.*, 766 F.3d 212, 79 Env’t. Rep. Cas. (BNA) 1041 (2d Cir. 2014).

⁶⁷*Joslyn Mfg. Co. v. T.L. James & Co.*, 696 F. Supp. 222, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20518 (W.D. La. 1988), aff’d, 893 F.2d 80, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20382 (5th Cir. 1990). In affirming, the Fifth Circuit concluded that veil-piercing is justified only when the subsidiary is “designed as a bogus shell.” *Joslyn Mfg. Co. v. T.L. James & Co.*, 893 F.2d 80, 84, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20382, 20383 (5th Cir. 1990); see also *United States v. Alcan*, No. 88-4970 (E.D. Pa. Nov. 6, 1989) (federal magistrate ruling that government must allege misuse of the corporate form in its complaint if it seeks to proceed against a parent corporation on an alter ego theory); *Allied Corp. v. Frola*, 701 F. Supp. 1084, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20624 (D.N.J. 1988) (refusing to pierce veil absent allegations of wrongdoing or fraudulent, illegal or unjust conduct).

⁶⁸*United States v. Kayser-Roth Corp.*, 724 F. Supp. 15, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20349 (D.R.I. 1989), aff’d, 910 F.2d 24, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 21462 (1st Cir. 1990). In that case, the court first found the parent corporation liable as an operator, on the grounds that it had controlled the management and operation of the facility itself. The court also found, however, that CERCLA liability based upon piercing the corporate veil is a species of owner liability and thus “public convenience, fairness and equity,” as well as the overwhelming degree of control exercised by the parent over the subsidiary’s corporate finances and organization, justified piercing the veil to hold the parent liable. The First Circuit affirmed the parent corporation’s liability without piercing the corporate veil.

⁶⁹*United States v. Bestfoods*, 524 U.S. 51, 28 Env’tl. L. Rep. (Env’tl. L. Inst.) 3733 (1998).

the Court reasoned, if a parent corporation is extensively involved in a subsidiary's activities, that involvement gives rise to indirect liability under the piercing doctrine; by contrast, if the parent corporation participates in the facility's activities that involvement gives rise to direct liability.⁷⁰

There are a few exclusions from the class of responsible parties, noted earlier: Holders of federally authorized permits are exempt from liability for most releases in accordance with permits, as are pesticide applicators.⁷¹ While this limits their liability as responsible parties, all claims under common law or other statutes are expressly preserved.⁷² Service station owners who operate a used-oil recycling service that conforms to EPA regulations will not be responsible parties when the service is abandoned.⁷³

Defendants are not liable if they did not "own or possess" the hazardous substance.⁷⁴ They are also not liable if there is no evidence that their waste was shipped to the facility.⁷⁵ Defenses to liability are limited to acts of war, acts of God, and of third parties; these are discussed in Part VI, below.

§ 14:114 Superfund—Persons affected—Other persons

The "person in charge" of a vessel or facility must notify the National Response Center¹ of any release of hazardous substance in a reportable quantity.² The "person in charge" is not necessarily the owner or operator; this is a concept borrowed from the oil spill program.³

Transporters who carried hazardous substances and chose the disposal site must give notice to EPA—not the response center—if the hazardous substance was or would later be designated a hazardous waste.⁴

§ 14:115 Superfund—Notices and records

The "person in charge" of a vessel or facility must give notice to the National Response Center of a release (other than a federally permitted release) of a hazardous substance if the release exceeds the threshold established by EPA; if the Agency has

⁷⁰See *United States v. Bestfoods*, 524 U.S. 51, 62-67, 28 Env'tl. L. Rep. (Env'tl. L. Inst.) 3733 (1998); *IBC Mfg. Co. v. Velsicol Chem. Corp.*, 187 F.3d 635, (6th Cir. 1999) (holding that a successor parent corporation is not liable for its subsidiary's cleanup liability if the successor parent does not exercise control over the subsidiary's operations and the subsidiary's assets are not transferred to the successor parent).

⁷¹See CERCLA § 107(i), (k), 42 U.S.C.A. § 9607(i), (k); *Cameron v. Navarre Farmers Union Coop. Ass'n*, 76 F. Supp. 2d 1178 (D. Kan. 1999) (holding that a party seeking to take advantage of the pesticide exemption has to prove that the substances were registered under FIFRA and applied in the customary manner).

⁷²See CERCLA § 107(j), 42 U.S.C.A. § 9607(j).

⁷³See CERCLA § 114(c), 42 U.S.C.A. § 9614(c) (added by SARA § 114(a)). This subsection has no effect unless and until EPA promulgates the regulations for used oil recycling required by the 1984 RCRA. See § 14:33.

⁷⁴See *New York v. Johnstown*, 701 F. Supp. 33, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20578 (N.D.N.Y. 1988) (state cannot be held in class of liable parties under § 107(a)(3) where it directs disposal in its regulatory capacity).

⁷⁵See *United States v. Wade*, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20436 (E.D. Pa. 1984).

[Section 14:114]

¹See CERCLA § 103, 42 U.S.C.A. § 9603.

²See CERCLA §§ 102 to 103, 42 U.S.C.A. §§ 9602 to 9603.

³See § 14:97.

⁴See CERCLA § 107(c), 42 U.S.C.A. § 9607(c).

set no threshold, then releases of more than one pound must be reported.¹ The wording of the requirement is taken from § 311 of the Clean Water Act.²

EPA's regulations implementing this requirement are at 40 C.F.R. Part 302. The Agency had been slow to establish reportable quantities, leaving the one-pound threshold generally applicable, and the 1986 Superfund amendments added to § 102(a) a requirement that the Agency complete its regulations by April 30, 1988.

The reporting requirements interact with RCRA definitions. When a mixture is released, if it is not a hazardous waste, only the constituents which are reportable need be measured to determine the threshold. Section 302.5 provides different rules for hazardous solid wastes. For regulated wastes which contain toxic substances, the reportable quantity of the waste is the same as the reportable quantity of the substance. For wastes that exhibit other hazardous characteristics, however, the reportable quantity is one hundred pounds.

Under the EPCRA, discussed in § 14:148 below, owners and operators of facilities must notify local emergency planning agencies of releases reportable under CERCLA, as well as releases of "extremely hazardous substances" listed under that statute.³

Persons who owned or operated waste disposal facilities at the time hazardous substances were stored, treated, or disposed of without a RCRA permit, or who transported hazardous substances to such a facility of their own choosing, must notify EPA—not the National Response Center—of the facility and the substances.⁴

This is a distinct notice provision, designed to help EPA identify potentially responsible parties and sites for remedial action. It is not tied to "reportable quantities," but is triggered by transport or disposal of even trace amounts of hazardous substances, such as a toxic contaminant mixed into some larger bulk of soil or refuse.

Beginning on December 11, 1980, persons subject to the notice requirement for owners, operators, and transporters must preserve for fifty years any records EPA requires—the Agency has not yet issued regulations.⁵

The notice requirement applies retroactively without any limit; it certainly applies to waste disposal carried out before RCRA became effective. Since most disposal facilities received hazardous substances, and it was common practice for transporters to choose their destinations, most disposal facility owners, operators, and transporters are obliged to give such notices.⁶ There are criminal penalties for noncompliance.⁷

§ 14:116 Superfund—Remedial program procedures

Preceding subsections discussed issues common to the two broad subdivisions of Superfund responses—removal and remedial actions. The remedial program is by far the larger of the two, and it has complex procedures of its own that create a miniature environmental protection program for each of hundreds of abandoned dump sites across the country.

[Section 14:115]

¹See CERCLA §§ 102 to 103, 42 U.S.C.A. §§ 9602 to 9603.

²See § 14:97.

³See § 14:159.

⁴See CERCLA § 103(c), 42 U.S.C.A. § 9603(c).

⁵CERCLA § 103(d), 42 U.S.C.A. § 9603(d).

⁶CERCLA § 103(c), 42 U.S.C.A. § 9603(c).

⁷CERCLA § 103(c), 42 U.S.C.A. § 9603(c).

§ 14:117 Superfund—Remedial program procedures—Hazard ranking system, health assessments, and the national priorities list

Superfund authorizes remedial actions, like other responses, whenever there is a release or significant threat of release of a hazardous substance, whether or not the release poses any hazard. (Response is also authorized in cases of imminent danger from pollutants or contaminants). The language of § 104 therefore seems to give EPA extraordinarily broad authority.¹ Some limits may be found in the statute's definitions, however. The definition of "remedial" responses limits such actions to those taken "to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment."² In short, while EPA may investigate any release, only those releases which pose a substantial risk may be prevented or remedied.

EPA is required to rank all such releases in order of priority and must list the highest-ranked releases on the NPL. The Agency will undertake remedial actions only for releases listed on the NPL.³

The NPL is a risk-management system borne from a rare Congressional acknowledgment that there were more environmental hazards than EPA could respond to with the resources Congress was willing to provide. When CERCLA was passed, no one knew how many remedial sites there would be; estimates in the legislative history ranged up to 10,000; estimates of cleanup costs ranged up to \$10 billion.⁴ Only \$1.6 billion was authorized, however, and EPA was instructed to make a list of at least the highest priority sites with which to begin. (By 1986, the list of candidates included 21,000 sites, and total authorizations had grown to ten billion dollars.) The NPL must be revised at least annually.⁵

EPA takes remedial actions only at sites listed on the NPL, even when remedial-type actions (such as permanent relocation of residents) would be cost-effective dur-

[Section 14:117]

¹See CERCLA § 104(a), 42 U.S.C.A. § 9604(a); *United States v. Tarkowski*, 248 F.3d 596, 31 Env'tl. L. Rep. (Env'tl. L. Inst.) 20572 (7th Cir. 2001) (holding that aside from the Constitutional considerations of search and seizure, Congress did not intend to confer EPA with the authority to gain access to and remove quantities of materials from private property pursuant to 104(e) without judicial review of the access order to determine whether such order was reasonable regardless of § 113(h)).

²See CERCLA § 101(24), 42 U.S.C.A. § 9406(24). The response language originated in S.1480, of which Senator Stafford said: "In many ways, the Senate bill is analogous to the natural disaster assistance programs we have enacted into law." 126 Cong. Reg. 14967 (daily ed. Nov. 24, 1980), *reprinted in* 1 CERCLA Legislative History, Section 13:1.

³CERCLA § 105, 42 U.S.C.A. § 9605, requires EPA to rank all releases in priority order for remedial action, but does not appear to prohibit all remedial actions at unlisted sites; the legislative history and statutory definitions seem to contemplate EPA taking some permanent remedial actions as appropriate during emergency responses. See CERCLA § 101(24), 42 U.S.C.A. § 9601(24) ("remedy . . . means those actions consistent with permanent remedy taken instead of or in addition to removal actions."); see also S. Rep. No. 848, 96th Cong., 2d Sess. 51 (1980). EPA, however, in the NCP says that "Only those releases included on the NPL shall be considered eligible for Fund-financed remedial action," 40 C.F.R. § 300.425(b). This flat rule protects EPA from ceaseless pressure to undertake large and expensive permanent remedies, including relocation of whole neighborhoods during emergency responses, when expenditures are not subject to EPA's overall Fund-balancing test for permanent remedies at priority sites. The Fund-balancing test is only required for the overall remedy selected for private sites, however. Individual remedial actions need only be cost-effective. CERCLA § 101(24), 42 U.S.C.A. § 9601(24). Private parties who perform response actions at unlisted sites therefore should be permitted to perform cost-effective remedial actions, but perhaps may claim reimbursement only from responsible parties; when EPA itself carries out an arguable "remedy" during a removal action, this is not inconsistent with the NCP so long as it is cost-effective.

⁴Stever, *Law of Chemical Regulation and Hazardous Waste* Ch 5.

⁵See CERCLA § 105(a)(8)(B), 42 U.S.C.A. § 9605(a)(8)(B). EPA has revised the list more frequently than this; close to 1,000 releases had been listed by mid-1986, and only four removed.

ing removal.⁶ In its 1990 NCP revisions, EPA takes the position that the NCP requirement that a site be listed on the NPL before fund-financed remedial action may be taken is a self-imposed restriction on governmental action that is not relevant to private actions.⁷ Fund-financed remedies must be balanced against other demands on the Fund, a restriction that is not imposed on remedies financed by responsible parties.⁸

The statute sets out the criteria for ranking releases in order of priority: EPA is required to assess the “relative risk . . . taking into account to the extent possible the population at risk, the hazard potential of the hazardous substances,” the risk of exposure by various routes, the potential for destruction of sensitive ecosystems, the willingness of states to participate in the cost of cleanup, and “other appropriate factors.”⁹ EPA may then specify the methods, techniques, and procedures for accomplishing appropriate responses.¹⁰

Sites evaluated for the NPL are called “releases” and are ranked by a numerical scoring system developed for EPA by the Mitre Corporation; the scoring system is formally called the Hazard Ranking System (HRS). The HRS assigns each release a score heavily weighted by the volume of hazardous substances found at the site and the number of people who may be exposed to hazardous substances by the various possible routes of release, which roughly tracks the statutory criteria.¹¹ Estimates are made on the basis of whatever information is available, which is often scant. There is considerable room for the exercise of judgment in the ranking. EPA takes the position that the individual HRS ranking is not a reviewable agency action.¹² EPA may apply the HRS with such imprecision, however, that its actions become arbitrary or capricious or not in accordance with law. In such cases, the D.C. Circuit can order a site deleted from the NPL.¹³

The HRS was criticized by PRPs, who found it sometimes arbitrary, and by people

⁶See CERCLA § 103(c), 42 U.S.C.A. § 9603(c). Because “permanent relocations” are defined as remedial measures, CERCLA § 101(24), 42 U.S.C.A. § 9601(24), this self-imposed rule kept EPA from permanently relocating people in the face of a health-threatening emergency, even where permanent relocation was in the best interests of all concerned. The Agency has established a procedure for expeditious “listing” of such emergencies to circumvent the difficulty. See § 14:104.

⁷See 55 Fed. Reg. 8666, 8793 n.29 (Mar. 8, 1990).

⁸See 40 C.F.R. § 300.425(b).

⁹CERCLA § 105(a)(8)(A), 42 U.S.C.A. § 9605(a)(8)(A).

¹⁰CERCLA § 105, 42 U.S.C.A. § 9605. EPA has described cleanup measures only in the most general terms. See 40 C.F.R. § 300 Subpart D (oil spills); 40 C.F.R. § 300.415 (removals); 40 C.F.R. § 303.430 (remedies); 40 C.F.R. § 300.430, App’x D (list of methods to be considered for remedy); see also 40 C.F.R. § 300 Subpart J (“Use of Dispersants and other Chemicals” in oil spills). Courts grant EPA deference on NPL listing decisions. See, e.g., *Northside Sanitary Landfill, Inc. v. Thomas*, 849 F.2d 1516, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 21032 (D.C. Cir. 1988), cert. denied, 489 U.S. 1078 (1989); *CTS Corp. v. E.P.A.*, 759 F.3d 52, 79 Env’t. Rep. Cas. (BNA) 1676 (D.C. Cir. 2014) (denying petition for review of EPA’s NPL listing).

¹¹See *Eagle-Picher Indus. v. EPA*, 759 F.2d 905, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20467 (D.C. Cir. 1985); 40 C.F.R. § 300.66(b)(2) & app. A. But see 40 C.F.R. § 300.66(b)(4) (health hazards listed on NPL when certified by the ATSDR); see § 14:115; see this section note 3.

¹²See, e.g., *U.S. Ecology, Inc. v. Carlson*, 21 Env. 2009 (C.D. Ill. Oct. 3, 1984); Stever, *Law of Chemical Regulation and Hazardous Waste* Ch. 6. It appears that the NPL as a whole is a rule to be reviewed, if at all, in the United States Court of Appeals for the D.C. Circuit. However, courts have allowed some public participation and comment on the HRS process. See *Ohio v. EPA*, 838 F.2d 1325, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20479 (D.C. Cir. 1988); see also 40 C.F.R. § 300.515(c)(1)-(2) (Mar. 8, 1990), requiring EPA to consult with states “as appropriate” on the information to be used in developing HRS scores for releases and to provide the state, “to the extent feasible,” thirty working days to review releases that were scored by the EPA and that will be considered for the NPL. See also *Tex Tin Corp. v. EPA*, 935 F.2d 1321 (D.C. Cir. 1991) (requiring EPA to explain further why it placed a company’s facility on the NPL, even though EPA already cited potential releases of arsenic into the air).

¹³See, e.g., *Tex Tin Corp. v. EPA*, 992 F.2d 353, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 20823 (D.C. Cir.

who lived near dump sites, who felt the HRS did not give sufficient weight to their concerns about health hazards from contaminated groundwater. In the SARA of 1986, Congress directed EPA to reconsider the HRS, reemphasizing that the ranking is to be based on relative risk, and directing the Agency to give a high priority to health risks caused by contamination of drinking water.¹⁴ Existing rankings need not be revised, except in the case of sites where contaminated drinking water supplies required higher rankings.¹⁵ On March 14, 1991, the revised HRS took effect, addressing surface water contamination and potential, as well as actual, ambient air contamination and giving priority to contaminated drinking water wells.¹⁶

Congress also created a parallel system of evaluations, health assessments to be carried out by the Agency for Toxic Substances and Disease Registry (ATSDR) within the Department of Health and Human Services.¹⁷ ATSDR listed the 225 hazardous substances posing the most significant threat at NPL listed sites. The list is regularly expanded.¹⁸ ATSDR prepared “toxicological profiles” of each substance.¹⁹ Furthermore, ATSDR performed a “health assessment” of 951 sites listed on the NPL by December 10, 1988, or within a year after its inclusion on the NPL.²⁰ On petition, or on the basis of information it acquires, ATSDR will perform a preliminary health assessment of a release that has not been placed on the NPL, in what amounts to an appeal from EPA neglect.²¹ The stated purpose of these assessments is to assist EPA in preparing appropriate responses, but they undoubtedly are useful to plaintiffs preparing personal injury actions against potentially responsible parties.

1993).

¹⁴The United States District Court for the District of Columbia gives EPA leeway in applying the HRS. *See City of Staughton, Wis. v. EPA*, 858 F.2d 747, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20054 (D.C. Cir. 1988); *see also* Jones & McSarrow, “But Were Afraid to Ask: Superfund Case Law, 1981–1989,” 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 10430 (Oct. 1989).

¹⁵*See* CERCLA §§ 105(c), 118, 42 U.S.C.A. §§ 9605(c), 9618. The 1986 amendments to § 105 required a substantive performance standard (the model must “accurately assess relative risks to human health and the environment”). The Conference Report, H.R. Rep. No. 962, 99th Cong., 2d Sess. (1986), places a gloss on the statutory requirement in several ways. First, it refers to S. Rep. No. 848, 96th Cong., 2d Sess. 60 (1980), which purports to have expressed the original legislative intent with respect to hazard ranking, and then suggests that EPA evaluate the Department of Defense “preliminary pollutant limit value system” as a possible alternative to the Mitre Model.

¹⁶55 Fed. Reg. 51532 (Dec. 14, 1990).

¹⁷*See* Johnson, “Implementation of Superfund’s Health-Related Provisions by the Agency for Toxic Substances and Disease Registry,” 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 10277 (July 1990).

¹⁸As of late 1992, 275 hazardous substances were listed. ATSDR Toxicological Profile Information Sheet (Summer 1992). This revised priority list was published at 56 Fed. Reg. 52166 (Oct. 17, 1991). Because the list has remained relatively stable over the years, EPA and ATSDR typically publish revisions every two years instead of annually, although they continue to informally review and revise the list each year as required by CERCLA § 104(i)(2)(B). 60 Fed. Reg. 16478 (Mar. 30, 1995); *see, e.g.*, 73 Fed. Reg. 12178 (Mar. 6, 2008) (revised list); 79 Fed. Reg. 30613 (May 28, 2014) (revised list). The list is available at ATSDR, Priority List of Hazardous Substances, <http://www.atsdr.cdc.gov/spl/index.html>.

¹⁹As of late 2016, ATSDR has undertaken over 300 toxicological profiles, including for substances not included in the priority list. ATSDR, Toxic Substances Portal, <http://www.atsdr.cdc.gov/toxprofiles/index.asp>; *see also* 77 Fed. Reg. 74192 (Dec. 13, 2012) (notice of availability of three new and seven updated final profiles).

²⁰*See* CERCLA § 104(i), 42 U.S.C.A. § 9604(i); *see also* Johnson, “Implementation of Superfund’s Health-Related Provisions by the Agency for Toxic Substances and Disease Registry,” 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 10277, 10278 (July 1990).

²¹*See* CERCLA § 104(i)(6)(B), 42 U.S.C.A. § 9604(i)(6)(B). ATSDR must “consider the National Priorities List schedules and the needs of the Environmental Protection Agency and other federal agencies” in setting priorities for assessments, however, CERCLA § 104(i)(6)(C), 42 U.S.C.A. § 9604(i)(6)(C), and for NPL sites the assessment must be available in time for use in remedial investigations and feasibility studies. CERCLA § 104(i)(6)(D), 42 U.S.C.A. § 9604(i)(6)(D).

§ 14:118 Superfund—Remedial program procedures—Procedure at priority sites—Remedial investigation/feasibility study

After a release is placed on the NPL, remedial actions may begin. Measures to secure the site and removing any immediate hazard—surface cleanup, building fences, posting signs—are usually taken during the removal phase. The remedial action therefore usually begins with a series of elaborate studies, and further activity on the site may be delayed for years. The studies are needed to allow EPA to choose a remedy which is complete, permanent, and cost-effective, and to allow wide participation by interested parties in its formulation of the remedy.

The first study is a “Remedial Investigation” (RI), which considers the nature of the pollution problem and the threat it poses. This is followed by a “Feasibility Study” (FS) in which possible remedies are evaluated. These two studies are usually performed concurrently by a single contractor, and are often discussed together as the “RI/FS.”¹

The RI/FS may take years to prepare. The remedial investigation portion begins with a scoping study, followed by preparation of a plan for carrying out the investigations which follow. EPA generally attempts to identify responsible parties who may have shipped wastes to the sites during the scoping stage, and explores any records that may show what hazardous substances are present. In most cases, the Agency’s contractor will then proceed to a more detailed characterization of the site. The Agency’s guidance manual provides that at this stage, the contractor collect data on “the nature and extent of contamination [that] may be of concern in five media: ground water, soil, surface water, sediments, and air.”² Since the contamination may be underground, this requires drilling wells, exploring and sampling groundwater and learning the patterns of underground flow.

The final objective of the field investigation is to characterize the nature and extent of contamination such that informed decisions can be made as to the level of risk perfected by the site and the appropriate type(s) of remedial response.³

Since seasonal variations usually must be assessed, the collection of this data necessary to accomplish this task rarely can be accomplished in less than a year. Bench scale or pilot studies may be needed to select the remedial alternatives for consideration. These laboratory and pilot studies may address the treatability of wastes, may test innovative technology, or evaluate the effectiveness of alternative treatment methods at the site.⁴

Part of the remedial investigation involves the preparation of a site-specific baseline risk assessment to characterize the current and potential threats to human

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¹See the NCP, 59 Fed. Reg. 47383 (Sept. 15, 1994); 55 Fed. Reg. 8698 (Mar. 8, 1990); 54 Fed. Reg. 13298 (Mar. 31, 1989); 52 Fed. Reg. 27622 (July 22, 1987).

²EPA, Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, EPA/540/G-89/004, OSWER Directive 9355.3-01, at 3-13 (Oct. 1988); *see also* EPA, RI/FS and Treatability Studies Overview, <http://www.epa.gov/superfund/policy/remedy/sfremedy/rifs/overview.htm>; EPA, A Guide to Developing and Documenting Cost Estimates During the Feasibility Study, EPA 540-R-00-002, OSWER Directive 9355.0-75 (Aug. 10, 2000), <http://www.epa.gov/superfund/policy/remedy/pdfs/93-55075.pdf>; EPA, Scoper’s Notes: An RI/FS Costing Guide, EPA/540/G-90/002 (Feb. 1990), <http://www.epa.gov/superfund/policy/remedy/pdfs/540g-90002-s.pdf>.

³EPA, Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, EPA/540/G-89/004, OSWER Directive 9355.3-01, at 3-13 (Oct. 1988).

⁴EPA, Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, EPA/540/G-89/004, OSWER Directive 9355.3-01, at 5-5 to 5-8 (Oct. 1988).

health and the environment posed by the presence or movement of contaminants.⁵ The results of the risk assessment establish acceptable exposure levels used in developing remedial alternatives.⁶ At sites requiring removal action, the NCP provides for the lead agency to conduct an “engineering evaluation/cost analysis” (EE/CA), the purpose of which is to provide an analysis of response alternatives similar to that contained in a RI/FS.⁷

As data are produced by the remedial investigation, EPA’s contractor will begin the feasibility study. In this portion of the work, the contractor identifies specific methods for responding to the release, and screens them by applying broad criteria and rough estimates of cost.⁸ For those methods which pass the screening stage, the contractor proceeds to a detailed technical analysis. Each of the alternatives must be evaluated for its ability to achieve applicable, or relevant and appropriate, environmental quality standards. The cost and feasibility of each must be evaluated in detail, and the results of all these analyses assembled in a report.⁹ Much of the complexity and difficulty of these studies is imposed by the requirement that remedies be cost-effective.

Not surprisingly, the RI/FS studies have gone slowly. Expressing considerable impatience, Congress in the SARA of 1986 set schedules for EPA to meet. Within three years after SARA’s enactment—by October 17, 1989—EPA was required to begin at least 275 RI/FSs in addition to those already underway and to complete its studies and begin construction at 175 facilities before October 1989, and at 200 additional facilities by October 1991.

State governments, and in some cases PRPs, as discussed below, may provide input to the RI/FS. The public will be offered an opportunity to comment on the reports, and they will then serve as the basis of EPA’s choice of remedy. The administrative record supporting this choice, “the record of decision” (ROD), is the sole basis of review in federal court.¹⁰

EPA presumably will include in its record of decision all contacts with persons outside the agency which contribute to its decision. Such *ex parte* contacts are not forbidden by CERCLA or by principles of administrative law, but the administrative record must be complete.

§ 14:119 Superfund—Remedial program procedures—Procedure at priority sites—State participation

State governments play a subordinate role in Superfund. In other environmental protection programs—even the similar cleanup fund for leaking underground petroleum storage tanks—EPA may delegate the management of environmental protection to state agencies. Not so in Superfund. To compensate for this lack of direct authority, the states are given an effective veto over EPA remedial actions within their borders. EPA must consult a state before choosing its remedy, and EPA regulations must provide for “meaningful involvement” in the decision process. More

⁵See EPA, A Comparative Analysis of Remedies Selected in the Superfund Program During FY87, FY88, and FY89, OSWER Directive 9835.13 (June 20, 1990); EPA, Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, EPA/540/G-89/004, OSWER Directive 9355.3-01, at 3-20 to 3-23 (Oct. 1988).

⁶See 40 C.F.R. § 300.430(e)(2)(i).

⁷40 C.F.R. § 300.415(b)(4).

⁸U.S. EPA Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA 4-3 to 4-5 (1988).

⁹U.S. EPA Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA 4-5 to 4-20 (1988).

¹⁰See CERCLA § 113(j)-(k), 42 U.S.C.A. § 9613(j)-(k) (added by SARA in 1986).

importantly, before EPA can carry out a remedial action, the state must agree to provide 10 percent (50 percent or more for certain state-owned sites) of the initial cost, and to assume responsibility for maintenance costs (except the first ten years of groundwater treatment).¹ Since 1989, the states must also provide assurances that an off-site disposal facility will be available if needed.² The leverage provided by the state veto is the state's strongest assurance of participation in the Superfund remedial program, but there are several other ways in which the state can—or must—become involved. The 1990 revisions to the NCP created a new Subpart F to consolidate the NCP provisions pertaining to state involvement in hazardous substance response.³ In the 1990 NCP revisions, EPA relies heavily on the early communication of potential federal and state “applicable or relevant and appropriate requirements” (ARARs) to satisfy the state participation requirements, allowing the state only ten to fifteen days to review and comment on the RI/FS, ROD, ARAR, other advisories, criteria, or guidance “to be considered” (TBC), and remedial design, and five to ten days to review and comment on the proposed plan.⁴ As part of the process of selecting the remedy under the revised NCP, however, state and community acceptance of the proposed remedy are “modifying criteria” which EPA is obligated to consider in selecting the remedy.⁵

Ranking and Remedy Selection. Each state may designate one site within its borders for inclusion on the NPL. States participate in the NPL process, but are not able to ensure listing of more than one of their sites nor to determine the priority given to them when listed. States may and do provide much of the information on which EPA relies in compiling its list of potential sites.

States have more control over the endpoint of the cleanup than its beginning. State environmental quality standards, if more stringent than the federal, may determine the endpoint of the cleanup.⁶ If EPA chooses a remedy which does not achieve state standards, the state may challenge this decision at several points, and the state may compel any additional remedy required by its standards, so long as the state pays the added cost.⁷ Finally, if EPA believes it has cleaned up a site and

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¹See CERCLA §§ 104(c)(2)-(3), 122(f)(1), 42 U.S.C.A. §§ 9604(c)(2)-(3), 9622(f)(1). In 1986, responsibility for the first ten years of groundwater treatment was shifted to Superfund, easing a serious source of friction between EPA and the states. States were also relieved of the burden of paying 50 percent or more at passively owned sites.

²See CERCLA § 104(c)(9), 42 U.S.C.A. § 9604(c)(9).

³40 C.F.R. Parts 300 et seq. (Mar. 3, 1990), as amended by 59 Fed. Reg. 47416 (Sept. 15, 1994). Many of the provisions of the NCP dealing with state involvement in remediation were upheld in *Ohio v. EPA*, 997 F.2d 1520, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 21157 (D.C. Cir. 1993).

⁴40 C.F.R. § 300.515(e), (g).

⁵See 40 C.F.R. § 300.430(f)(1)(i)(C).

⁶See CERCLA § 121(d)(2)(A)(ii), 42 U.S.C.A. § 9621(d)(2)(A)(ii).

⁷In Fund-financed cleanup, the state presumably may bring an action under § 310 to compel performance of a nondiscretionary duty, and when responsible parties are carrying out the cleanup, under § 121(f)(2). This provision of the statute is implemented in a more general manner in the NCP, which provide that any time a state desires changes in or expansions of a remedial action (called “enhancement of the remedy”), EPA may agree to integrate the change or expansion into the remedy if it finds it would not conflict with or be inconsistent with the remedy *and* the state agrees to fund the incremental cost *and* the state agrees to assume the lead for supervising that component of the remedy. See 40 C.F.R. § 300.515(f)(1).

Moreover, the NCP explicitly states that state concurrence on an ROD is not a prerequisite to EPA's selecting a remedy, and that a state may not proceed with a fund-financed response action unless EPA has first concurred in and adopted the ROD. 40 C.F.R. § 300.515(e)(2)(ii).

proposes to remove it from the NPL, a state may veto EPA's proposed deletion.⁸

Cooperative Agreements. A state or "political subdivision" may apply to EPA to carry out any remedial action. EPA may enter into contracts or "cooperative agreements" with such state or local agencies if EPA determines that the agency has the capability to carry out the action. In 1986, SARA added the requirement that the state or local agency have the capacity to carry out both the response action and any related "enforcement actions."⁹ EPA retains oversight authority and responsibility for seeing that the state carries out its contract, and may enforce the agreement in federal district court.¹⁰

Enforcement and Liability. As noted earlier, states must agree to contribute 10 percent of the cost of the remedial action before EPA can begin. Section 104(c)(3)(C) of CERCLA as first enacted required that whenever the facility was owned by a state or political subdivision, the state share would increase to at least 50 percent. Some remedial action sites proved to be county and municipal landfills, others were commercial dumps on land leased from state or local government, and others were unauthorized dumps on publicly owned land. Through bankruptcy or tax-foreclosures or escheat, states would acquire land that had been used for dumping and then abandoned. The states' 50-percent share of costs at all these sites became a stumbling block to progress in cleanup, as states were sometimes unwilling or unable to assume the hundreds of millions of dollars of liability at state owned sites. EPA was helpless to compel the states to appropriate funds and could not proceed without a state's agreement to pay its share. SARA eased the friction somewhat by providing that states were liable for the 50 percent minimum cost-sharing only in those cases where the state or a political subdivision had operated the site, directly or through a contractor, at the time of disposal.¹¹ Furthermore, when states acquire property through bankruptcy or foreclosure, they will not be considered responsible parties solely for that reason.¹²

When states are not themselves responsible parties, EPA and the Justice Department have been reluctant to allow them to participate in EPA enforcement actions under CERCLA. But SARA added the requirements that states be allowed to participate in enforcement discussions and in settlements, to enforce consent decrees governing private party cleanup in federal court, and to collect stipulated penalties.¹³

Indian Tribes. The SARA of 1986 clarified CERCLA to provide that Indian tribes are treated like state governments for most purposes, except that they are relieved of the cost-sharing and maintenance requirements.¹⁴ Perhaps inadvertently, the statute distinguishes Indian tribes in one way. Although tribes may carry out cleanup under contracts or cooperative agreements, EPA—which may indemnify other private party and state contractors—does not have express authority to indemnify contractors working for Indian tribes.¹⁵

§ 14:120 Superfund—Remedial program procedures—Procedure at priority sites—Public participation

The people who live near dump sites and drink water which may be contaminated

⁸See CERCLA § 121(f)(1)(C), 42 U.S.C.A. § 9621(f)(1)(C).

⁹See CERCLA § 104(d)(1)(A), 42 U.S.C.A. § 9604(d)(1)(A).

¹⁰See CERCLA § 104(d)(2), 42 U.S.C.A. § 9604(d)(2).

¹¹See CERCLA § 104(c)(3)(C)(ii), 42 U.S.C.A. § 9604(c)(3)(C)(ii).

¹²See CERCLA § 101(20)(A)(ii), 42 U.S.C.A. § 9601(20)(A)(ii) ("owner or operator").

¹³See CERCLA § 121(e)-(f), 42 U.S.C.A. § 9621(e)-(f).

¹⁴See CERCLA § 126(a), 42 U.S.C.A. § 9626(a); see also CERCLA §§ 101(16), (36), 107(a)(4)(A), (f)(1), 111(b)(1), 42 U.S.C.A. §§ 9601(16), (36), 9607(a)(4)(A), (f)(1), 9611(b)(1).

¹⁵See CERCLA § 119(c)(2), 42 U.S.C.A. § 9619(c)(2).

by wastes have been a moving force behind Superfund. Their outrage ensured its passage and their relentless pressure for complete cleanup is felt throughout the program. Citizens' groups have become well organized and politically adept and are represented by able counsel. Until 1986, however, CERCLA allowed very little formal public participation in the remedial process. EPA did carry out National Environmental Policy Act (NEPA)-equivalent public notice and comment procedures in its RI/FS process and adopted "community relations plans" at cleanup sites.¹ But citizens largely made themselves felt through informal lobbying and through their Congressional representatives. CERCLA was not a regulatory statute; there was no equivalent of the permit procedures of earlier statutes in which citizens could intervene and no provision for citizens' enforcement actions.

In the SARA of 1986, EPA's NEPA-equivalent community participation procedures were codified, with some significant additions. EPA was required to publish a notice of its final remedial action plan, make the plan available for public comment, provide an opportunity for a public meeting, and publish a notice of its finally-adopted plan and of any significant changes during implementation. These final notices must contain an explanation of changes and responses to comments.²

EPA incorporated the § 117 requirements and existing agency community relations policies into its 1990 revision and restructuring of the NCP. Rather than having their own subpart, as in the 1985 NCP, the community relations requirements are now integrated into the regulations corresponding to the response phase to which the requirements apply.³

SARA also authorized EPA grants of up to \$50,000 to assist "any group of individuals which may be affected by a release or threatened by a release" at a listed facility in dealing with technical issues.⁴ Such groups may petition EPA for a preliminary assessment of sites not listed on the NPL; and in a similar vein, ATSDR must perform a health assessment of every NPL site and, on petition by interested persons, may perform a preliminary health assessment of sites not on the NPL.⁵ The ATSDR may conduct studies of particular groups of exposed individuals,⁶ and may provide counsel on health issues to individuals under cooperative agreements with the states.⁷ Whenever ATSDR makes a finding that there is a "significant risk to human health," EPA is required to respond to abate the risk.⁸

Finally, and perhaps most significantly, CERCLA was amended to authorize citizen suits when an agency fails to perform a mandatory duty or when any person is in "violation" of CERCLA's requirements, including the provisions of agreements under which private parties carry out cleanups.⁹ This parallels citizen suit provisions of earlier laws, but falls far short of what citizens groups had sought—a

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¹See 40 C.F.R. § 300.67.

²See CERCLA § 117, 42 U.S.C.A. § 9617.

³40 C.F.R. § 300.415(n) (procedures for removal actions); 40 C.F.R. § 300.430(c) (procedures for the RI/FS phase); 40 C.F.R. § 330.435(c) (procedures for the remedial design phase). EPA has made most of the public participation requirements "potentially applicable" to response actions undertaken by private parties. See 40 C.F.R. § 300.700(c)(6); *see also* Reg'l Airport Auth. v. LFG, LLC, 460 F.3d 697, 36 Env'tl. L. Rep. (Env'tl. L. Inst.) 20166 (6th Cir. 2006) (holding that a cleanup that did not comply with the public participation requirements was not in substantial compliance with the NCP).

⁴See CERCLA § 117(e), 42 U.S.C.A. § 9617(e).

⁵See CERCLA §§ 104(i)(6), 105(d), 42 U.S.C.A. §§ 9604(i)(6), 9605(d).

⁶See CERCLA §§ 104(i)(7), 104(i)(9), 42 U.S.C.A. §§ 9604(i)(7), 9604(i)(9).

⁷See CERCLA § 104(i)(4), 42 U.S.C.A. § 9604(i)(4).

⁸See CERCLA § 104(i)(11), 42 U.S.C.A. § 9604(i)(11).

⁹See CERCLA § 310(a), 42 U.S.C.A. § 9659(a).

federal cause of action for personal injuries and the right to bring suits to abate imminent hazards.

As noted above, ATSDR studies and EPA grants may indirectly provide assistance to citizens in preparing their personal injury actions.¹⁰ CERCLA also was amended to provide a uniform federal commencement date for state statutes of limitation covering actions for personal injury or property damage arising from exposures resulting from Superfund releases.¹¹ Effective retroactively to December 11, 1980, the uniform commencement trigger is the date the plaintiff knew or reasonably should have known that the injury or damage was caused or contributed to by the substance released.¹² While CERCLA generally preempts conflicting state statutes of limitations related to such tort claims,¹³ the Supreme Court has held that state statutes of repose are not preempted by CERCLA.¹⁴

Finally, whenever ATSDR makes a finding of significant risk to health, EPA's response is mandatory and presumably can be enforced by citizen suit under § 310(a)(2).

§ 14:121 Superfund—Remedial program procedures—Procedure at priority sites—Potentially responsible parties

PRPs may, of course, participate in the remedial procedure as members of the public. In the interests of avoiding public stigma, and of reducing the costs of cleanup which they will ultimately bear, responsible parties may also carry out or participate in carrying out the cleanup at Superfund sites. At lower ranked or unranked sites, there is no particular difficulty or formality involved, and some uncounted number of sites have simply been cleaned up before EPA has turned its attention to them.

At facilities ranked on the NPL, however, EPA has long required a more formal procedure, largely ratified by the SARA of 1986. Early in its study of a site, EPA will identify responsible parties and make some assessment of whether they should be asked to carry out each of the successive “operable units” (OUs) of the remedial action, beginning with the remedial investigation/feasibility study. After the RI/FS is complete, responsible parties may again be asked to assist in performance of the remedy and when the remedial action is broken into operable units, the same process may be repeated at each stage. Facilities at which PRPs are permitted or required to carry out a portion of the remedial action are classified by EPA as “enforcement” sites, and it has been the long-standing practice of the Agency to require that such cleanups only be carried out under a judicial consent decree.¹

SARA ratified this procedure and added some further statutory enforcement authority to it. CERCLA § 122(e)(6) now prohibits any PRP from undertaking without EPA authorization any remedial action at a facility where EPA “or [an-

¹⁰See Johnson, “Implementation of Superfund’s Health-Related Provisions By the Agency for Toxic Substances and Disease Registry,” 20 *Env’tl. L. Rep.* (Env’tl. L. Inst.) 10277 (July 1990).

¹¹See CERCLA § 309(a)(1), 42 U.S.C.A. § 9658(a)(1).

¹²See CERCLA § 309(b)(4), 42 U.S.C.A. § 9658(b)(4). This is the result of a study carried out under § 301(e) of CERCLA of 1980.

¹³CERCLA § 309, 42 U.S.C.A. § 9658.

¹⁴*CTS Corp. v. Waldburger*, 134 S. Ct. 2175, 189 L. Ed. 2d 62, 78 *Env’t. Rep. Cas.* (BNA) 1505, 86 A.L.R. Fed. 2d 665 (2014).

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¹On June 21, 1991, EPA issued model consent decree language in an attempt to speed up Superfund cleanup negotiations. EPA has since issued other model documents for such purposes. See EPA, Guidance: 2014 CERCLA RD/RA CD and SOW, <http://www2.epa.gov/enforcement/guidance-2014-cercla-rdra-cd-and-sow>.

other] potentially responsible party pursuant to an administrative order or consent decree” has “commenced a remedial action and feasibility study.”

New § 122 formalized the procedure by which EPA gives notice to potentially responsible parties for negotiations at “windows” in the remedial process.² It also clarified EPA’s authority to enter into partial settlements and releases, which may or may not expedite the negotiation process. Some PRPs may wish to settle with EPA and extricate themselves from the remedial process by making a cash settlement at the first opportunity, others may wish to participate in the cleanup itself, while still others may wish to wait and pay up—or contest the remedy—when it is complete. Section 122 allows EPA to grant releases and enter partial settlements and creates an expedited procedure for *de minimis* settlements. It also requires Justice Department approval of settlements in excess of \$500,000. Citizens and state governments are given substantially the same rights to participate in PRP remedial actions as in those conducted directly by EPA. PRP participation procedures are discussed in more detail in § 14:135, below.

§ 14:122 Superfund—Remedial program procedures—Procedure at priority sites—Federal agencies and federal facilities

Many federally owned facilities are contaminated by chemical and radioactive wastes, the refuse of nuclear power development, military activities, and the myriad industrial and commercial enterprises of the federal government. CERCLA generally applies to federally owned facilities as it does to other sites: Federal agencies may be responsible parties, and are subject to the requirements of CERCLA (except financial responsibility requirements) as are other persons.¹

Remedies at federal facilities, however, may not be financed by Superfund.² To comply with the statute, therefore, federal agencies must dip into otherwise appropriated funds or obtain cleanups by other responsible parties. Neither was an attractive prospect, and until 1986 there was little cleanup activity at federally owned sites. EPA could not bring suit against another part of the executive branch of government, and federal agencies claimed sovereign immunity to suit by others.

SARA added § 120 to CERCLA, reaffirming that the statute applied to federal agencies and establishing an oversight and enforcement scheme to ensure cleanup at federally owned sites. EPA was required to establish a docket of potential federally owned remedial sites and assess each site on the docket for inclusion on the NPL by April 17, 1988. Agencies are obliged to carry out RI/FSs and a remedial action approved by EPA, at each listed site, on a tight schedule and under an enforce-

²In the 1990 NCP, EPA merely states that “where the responsible parties are known, an effort initially shall be made, to the extent practicable, to determine whether they can and will perform the necessary removal action promptly and properly.” 40 C.F.R. § 300.415(a)(2). The NCP also provides that for all removal actions and CERCLA enforcement actions to compel removal response, a spokesperson will be appointed to inform the community of actions taken, respond to inquiries, and provide information concerning the release. Pre-removal solicitation of public comment on the administrative record file and engineering evaluation/cost analysis is required only when the lead agency has determined that a planning period of at least six months exists prior to the initiation of the on-site removal actions. See 40 C.F.R. §§ 300.415(m), 300.820(a).

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¹See CERCLA § 120(a)(1)-(2), 42 U.S.C.A. § 9620(a)(1)-(2), added by the SARA, Pub. L. No. 99-499, 100 Stat. 1613 (1986); see also CERCLA § 101(21), 42 U.S.C.A. § 9601(21) (definition of “person”); CERCLA § 107(a), 42 U.S.C.A. § 9607(a) (persons liable for response costs). The SARA Senate and Conference Committee reports state that this simply “reaffirms” the applicability of CERCLA. See H.R. Rep. No. 962, 99th Cong. 2d Sess. 203 (1986).

²See CERCLA § 111(e)(3), 42 U.S.C.A. § 9611(e)(3). SARA amended this section allowing Superfund expenditures to provide alternate water supplies where groundwater contamination reaches beyond the boundaries of a federal facility.

able agreement with EPA.³ Sites which are not included on the NPL are made subject to state law by § 120(a)(4), which contains safeguards against discriminatory application of state law against federal facilities.

Federal agencies may not draw on Superfund to finance their compliance, but are obliged to submit annual reports of progress to Congress, including their estimates of costs and “budgetary proposals” for needed funds.⁴ For most agencies, this presumably puts the ball back in the Congressional court. The Department of Defense, with the largest inventory of sites and the greatest flexibility in reallocating appropriated funds, is required to set up its own “superfund,” the Department of Defense Environmental Restoration Program, with a revolving fund (the “Defense Restoration Transfer Account”) replenished by reallocations from other appropriations and recoveries from other responsible parties.⁵

§ 14:123 Superfund—Remedial methods and goals—The 1990 NCP

CERCLA at first created an internal tension, amounting almost to contradiction, among the goals for remedial action. The statute strongly favored in-place remedies, which in many cases meant containment of land disposal facilities at their site of operation.¹ Yet remedies by definition should be permanent and must afford a high degree of protection to health and the environment. When revising RCRA in 1984, Congress made plain that in its collective view land disposal rarely could be considered either permanent or adequate.²

EPA attempted to balance the potentially conflicting policies of CERCLA and RCRA by adopting RCRA’s substantive requirements for both on-site and off-site management of hazardous substances in remedial actions.³ Wastes shipped off-site were required to be sent only to RCRA-permitted facilities in substantial compliance with their permits,⁴ while on-site management was required to meet substantive RCRA standards where possible.⁵ In EPA’s view, this last application of RCRA was not required by the statute, but was done as a matter of policy.

In 1984, RCRA imposed a staged prohibition on land disposal, and EPA’s policies therefore favored on-site treatment, rather than relocation to other land disposal facilities or containment, of hazardous substances. EPA announced a study of avail-

³See CERCLA § 120, 42 U.S.C.A. § 9620. The Conference Report states that the agreements between EPA and the heads of other federal agencies are “enforceable documents,” that EPA may assess civil penalties against the agencies for violating terms of the agreements, and that citizen suits for violations of the agreements are authorized by § 310. *See* 132 Cong. Rec. H9032, H9101 (daily ed. Oct. 3, 1986).

⁴See CERCLA § 120(e)(5), 42 U.S.C.A. § 9620(e)(5).

⁵SARA added a new Chapter 160, “Environmental Restoration,” to defense-authorizing legislation. *See* 42 U.S.C.A. §§ 2701 to 2707. The “environmental restoration account” is set out in § 2703.

[Section 14:123]

¹See CERCLA § 101(24), 42 U.S.C.A. § 9601(24) (remedial actions). This is reintroduced by the requirement for “cost-effective” remedies in § 105(7), and EPA’s self-imposed Fund-balancing requirement, 40 C.F.R. § 300.430, the immediate costs of containment are usually less than removal or treatment, and the state government, rather than the Fund, must pick up the bill for perpetual care. *See* CERCLA § 104(c)(3), 42 U.S.C.A. § 9604(c)(3).

²See § 14:62.

³See 50 Fed. Reg. 47912, 47946 (Nov. 20, 1985); 50 Fed. Reg. 45933 (Nov. 5, 1985) (“interim policy”). Both are internal EPA memoranda published as policies subject to change without notice. The 1990 NCP revisions revise the definition of “on-site” to mean “the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action.” 40 C.F.R. §§ 300.5, 300.400(e)(1).

⁴50 Fed. Reg. 47912, 45933, 45935 (Nov. 20, 1985).

⁵50 Fed. Reg. 47912 (Nov. 20, 1985).

able central treatment facility capacity;⁶ but the long-range solution to CERCLA's remedial program responses plainly required new technology for *in situ* treatment.

In 1986, SARA added § 121 to CERCLA, sharply emphasizing the preference for on-site treatment as a remedy.

The Agency also had some difficulty deciding how far cleanup should proceed, whether by removing soil and groundwater for disposal elsewhere, or by treating them on site. The statute required remedial actions to be cost-effective,⁷ but it was not clear whether this meant the endpoint of cleanup was to be defined in cost-effective terms, or whether the goal of cleanup was environmental quality protective of health and only the means were to be limited by the criterion of cost-effectiveness.

EPA at first tried to design each remedy so that cleanup would go no farther than what the Agency deemed to be "cost effective" at each site; this required an implicit judgment about the dollars that would be spent to reduce risk. This view was challenged by the Environmental Defense Fund, and in settlement of the suit EPA adopted a new policy of seeking to achieve health-protective environmental quality standards borrowed from other statutes.⁸

EPA includes cost as one of the nine factors used in the development and screening of remedial action alternatives under the 1990 NCP revisions. The types of costs that are to be assessed during the analysis of alternatives are capital costs, both direct and indirect, annual operation and maintenance costs, and net present value of capital and operation and maintenance costs.⁹ The remedial action selected from among these alternatives must be cost-effective, provided it first satisfies the two threshold requirements of overall protection of human health and environment and compliance with ARARs. If it does, cost-effectiveness is determined by evaluating "overall effectiveness"—long-term effectiveness and permanence, reduction of toxicity, mobility or volume through treatment, and short-term effectiveness—and comparing it with cost. A remedy is cost effective "if its costs are proportional to its overall effectiveness."¹⁰

Fund balancing is included in the NCP in the form of a waiver from ARARs for fund-financed response actions only, where an alternative that attains an ARAR "will not provide a balance between the need for protection of human health and the environment at the site and the availability of Fund monies to respond to other sites that may present a threat to human health and the environment."¹¹

Under this policy, EPA's Remedial Plan Manager became, in effect, the owner and operator of a source of pollution which required control. The methods and goals for such control are spelled out in several other statutes which, if applicable, would subject EPA responses to the same detailed regulations that apply to other persons. Disposal or treatment of wastes on the site would be subject either to RCRA or the Safe Drinking Water Act requirements for disposal facilities; incineration or air-stripping would be subject to RCRA and the Clean Air Act; surface water discharges to the Clean Water Act; and so forth. EPA expressly disavowed the need to follow its own procedures for obtaining permits under these other statutes, but it did undertake to use their requirements as guidelines in determining the methods and

⁶50 Fed. Reg. 45933, 45935 (Nov. 5, 1985).

⁷See CERCLA § 105(a)(7), 42 U.S.C.A. § 9605(a)(7).

⁸See Memorandum from J. Winston Porter to Regional Administrators (Oct. 2, 1985), 50 Fed. Reg. 47912, 47946 (Nov. 20, 1985).

⁹40 C.F.R. § 300.430(e)(9)(iii)(G).

¹⁰40 C.F.R. § 300.430(f)(1)(ii)(D).

¹¹40 C.F.R. § 300.430(f)(1)(C)(6).

goals of its remedial actions.¹²

Congress ratified this policy in many respects in § 121 of CERCLA, added by the SARA of 1986, but the statute made the policy obligatory rather than a matter of agency discretion, and there were a number of important changes.

The most important of these was that Congress reiterated its firm policy of ending land disposal. When choosing a remedy, EPA is directed to give first consideration and high priority to on-site treatment¹³—reducing hazard—rather than disposal on land:

Remedial actions in which treatment which permanently and significantly reduces the volume, toxicity or mobility of the hazardous substances, pollutants, and contaminants is a principal element, are to be preferred over remedial actions not involving such treatment. The offsite transport and disposal of hazardous substances or contaminated materials without such treatment should be the least favored alternative remedial action where practicable treatment technologies are available.¹⁴

This requirement interacts with the land disposal restrictions added to RCRA in 1984, and implemented in regulations issued shortly after CERCLA was reauthorized in 1986. The RCRA prohibition against land disposal of untreated wastes applies to wastes generated by CERCLA remedies beginning November 8, 1988. From that time forward, on-site treatment must achieve the performance of the best demonstrated, available treatment technology (BDAT) if the residue is to be allowed to remain on site.¹⁵ BDAT accordingly defines a minimum for the most favored alternative in EPA's choice of remedial actions.

A series of other criteria are set up for the chosen remedy, which emphasize the need for permanent reduction of the hazard from remedial sites, taking into account the long-term uncertainties of such methods as land-disposal. When off-site treatment or disposal is chosen as a remedy, CERCLA § 121(d)(3) requires that wastes may only be sent to a facility in compliance with RCRA, where there are no releases of hazardous wastes to the environment, and all past releases are being controlled by a corrective action program approved by EPA. This greatly restricts the availability of off-site disposal. The preference for treatment or reuse is repeated, and EPA is authorized to take into account the preference of interested parties.¹⁶ The remedial action must be reviewed periodically to ensure that it continues to be protective of health and the environment.¹⁷

Although imposing these constraints as to methodology, the statute affirms EPA policy with regard to goals. The site of the remedial action must be restored to levels of contamination protective of human health and the environment. This means achieving at least the Safe Drinking Water Act's Maximum Contaminant Levels (MCLs) for groundwater, and where no MCLs have been set, cleanup must achieve standards or criteria established under other federal statutes which are ap-

¹²40 C.F.R. § 300.430(f)(1)(C)(6).

¹³The definition of "on-site" is expanded in the 1990 NCP. See 40 C.F.R. §§ 300.5, 300.400(e)(1).

¹⁴See CERCLA § 121(b)(1), 42 U.S.C.A. § 9621(b)(1).

¹⁵See § 14:64. The statute defers the applicability of land disposal restrictions to soil and debris contaminated by CERCLA cleanups (and RCRA corrective action) until November 8, 1988, and EPA has administratively deferred otherwise applicable restrictions on other wastes until the same date. See § 14:66. Wastes falling within the administrative extension—primarily wastes contaminated with spent solvents and dioxins, which are not soil and debris—are subject to some additional restrictions, and may be land-disposed only in facilities which meet the minimum technological requirements in RCRA § 3004(o). § 14:66.

¹⁶See CERCLA § 121(b), 42 U.S.C.A. § 9620(b).

¹⁷See CERCLA § 121(c), 42 U.S.C.A. § 9620(c).

plicable or relevant and appropriate.¹⁸ In EPA procedures, the applicability and relevance of statutory standards is reviewed during the remedial investigation. The 1986 amendments to the Safe Drinking Water Act required a rapid expansion in the substances to which EPA has assigned MCLs, and these standards therefore will increasingly dominate the cleanup process.

Under RCRA, EPA is authorized to set “alternate concentration levels” (ACLs) in facility permits where groundwater cannot be restored to background or MCL levels. The Conference Committee report says that the ACL process may be used to set applicable standards for remedial cleanup, and this is strongly implied by CERCLA § 121(d)(2)(B)(ii), which provides a limitation on the use of ACLs, which may not be established by a process that assumes a point of human exposure beyond the boundary of the facility, unless the routes of exposure through groundwater contamination are known and the remedy will preclude exposure.

State standards, where more stringent than federal, are also applicable to on-site remedies. However, if off-site land disposal is the chosen remedy and the host state standards are more stringent than federal, the state standard will be applied only if the state applies it consistently to other sources, and the state stands ready to provide the added costs of complying with its standards.¹⁹

EPA may depart from ARARs only under the narrow circumstances prescribed by CERCLA § 121(d)(4). After allowing for more limited remedies that are steps in a plan for final attainment of standards, and for equivalent performance by other means, the statute authorizes actual departure from applicable, relevant and appropriate standards only where “compliance” would result in greater risks to human health and environment, would be technically impracticable, or, in the case of Fund-financed cleanup, the costs of meeting the standard are out of balance with other demands on the Fund.²⁰ State standards need not be honored if they are not consistently applied by the state to other facilities.²¹ It appears that when responsible parties perform a cleanup, costs are not a consideration in setting the endpoint.

EPA issued the long-awaited revisions to the NCP on March 8, 1990 which were amended in September 1994. These revisions attempt to reconcile the numerous and competing statutory mandates discussed above by requiring consideration of nine factors during the development and screening of remedial action alternatives: overall protection of health and the environment, compliance with ARARs, long-term effectiveness and permanence, reduction of toxicity, mobility and volume, short-term effectiveness, implementability, cost, state acceptance of the selected remedy, and community acceptance.

The final remedy is selected from among the alternatives that survive the screening stage by applying the same nine factors a second time according to a three-tiered, balancing approach.²² All possible cleanup alternatives must meet the threshold criteria of overall protection of health and the environment and compliance with ARARs.

EPA also lists six “expectations” or biases that it will use in developing remedial action alternatives: treatment for wastes that are liquid, highly toxic, or highly mobile; engineering controls for waste that poses a relatively low long-term threat or where treatment is impracticable; a combination of methods as appropriate to protect human health and the environment; institutional controls such as water use

¹⁸See CERCLA § 121(d)(2)(A)(i), 42 U.S.C.A. § 9621(d)(2)(A)(i).

¹⁹See CERCLA § 121(d)(2)(C)(ii), 42 U.S.C.A. § 9621(d)(2)(C)(ii).

²⁰See CERCLA § 121(d)(4), 42 U.S.C.A. § 9621(d)(4).

²¹See CERCLA § 121(d)(4)(E), 42 U.S.C.A. § 9621(d)(4)(E).

²²See 40 C.F.R. § 300.430(e)-(f).

and deed restrictions to supplement engineering controls, but not as a substitute for active response measures unless the latter are impracticable; innovative technology when it offers treatment advantages, fewer adverse impacts, or lower costs when compared with demonstrated technologies; and return of groundwaters to their beneficial use whenever practicable.²³

In the 1990 NCP revisions implementing the ARAR requirements, EPA essentially codified the framework set forth in the 1987 guidance. ARARs are to be initially identified during the scoping process and subsequently screened using data collected during the RI/FS process.²⁴ Applicable requirements are to be identified “based upon an objective determination of whether the requirement specifically addresses a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site.”²⁵ EPA lists eight comparison factors which are to be used in determining whether an inapplicable requirement nevertheless addresses problems or situations sufficiently similar to circumstances of the release or the remedial action contemplated, and whether the requirement is well-suited to the site, and therefore is both relevant and appropriate.²⁶

The NCP sets forth a procedure by which the consideration of ARARs is integrated into the process of developing and screening the remedial action alternatives from which the final remedy will be selected.²⁷ During the RI/FS process, the lead agency must establish remedial action objectives specifying contaminants and media of concern, potential exposure pathways, and remediation goals, and then identify potentially suitable technologies and assemble them into alternative remedial actions.

Remediation goals are initially developed using readily available information such as chemical-specific ARARs and are subsequently modified using information developed during the RI/FS. Final remediation goals, which must establish acceptable exposure levels that are protective of human health and the environment,²⁸ are to be developed by considering ARARs, including technical limitations on detecting

²³40 C.F.R. § 300.430(a)(1)(iii).

²⁴40 C.F.R. § 300.430(d)-(e). ARARs are also applicable to Fund-financed removal actions under § 104 and to removal actions under § 106 “to the extent practicable, considering the exigencies of the situation,” 40 C.F.R. § 300.415(i), as well as to the implementation of the remedial action, 40 C.F.R. § 300.435(b)(2). The preamble to the final 1990 NCP revisions provides a reference list of examples of potential federal and state ARARs and TBCs. *See* 55 Fed. Reg. 8666, 8764 to 8766 (Mar. 8, 1990); Stever, *Law of Chemical Regulation and Hazardous Waste* app. 6S; *see* 40 C.F.R. § 300.400(g)(1). Applicable requirements are defined at 40 C.F.R. § 300.5 as follows:

those cleanup standards, standards of control, or other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be applicable.

The preamble states that “there is generally little discretion in determining whether the circumstances at a site match those specified in a requirement.” 55 Fed. Reg. 8666, 8742 (Mar. 8, 1990).

²⁵40 C.F.R. § 300.400(g)(2). The use of “TBCs,” or advisories, criteria, or guidance developed by EPA, other federal agencies or states is discretionary. 40 C.F.R. § 300.400(g)(3).

²⁶*See* 40 C.F.R. § 300.430(e).

²⁷The regulations provide that for systemic toxicants, acceptable exposure levels are concentration levels to which the human population, including sensitive subgroups, may be exposed without adverse effect during all or part of a lifetime, incorporating an adequate margin of safety. 40 C.F.R. § 300.430(e)(2)(i)(A)(1). For known or suspected carcinogens, acceptable exposure levels are generally concentration levels that represent an excess upper bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6} . 40 C.F.R. § 300.430(e)(2)(i)(A)(2). When ARARs are not available or are not sufficiently protective due to multiple contaminants at a site or multiple pathways of exposure, the 10^{-6} risk level is to be used as the point of departure for determining remediation goals for alternatives. 40 C.F.R. § 300.430(e)(2)(i)(A)(2).

²⁸The use of RCRA ACLs for CERCLA remedies is substantially curtailed by § 121(d)(2)(B)(ii),

and quantifying contaminants and factors related to uncertainty, MCL goals (MCLGs) and MCLs, water quality standards, ACLs,²⁹ and evaluations of threats to the environment.

The regulations also contain specific requirements for developing and screening alternatives at sites where source control and groundwater response actions are required³⁰ and where innovative treatment technologies³¹ and a no-action alternative³² are potentially appropriate. As the final step in developing remediation alternatives, the lead agency must consider the short- and long-term aspects of the three criteria of effectiveness, implementability, and cost.³³

Once the lead agency has completed its development and screening of alternatives according to the procedures and standards described above, it must select those alternatives that represent “viable approaches to remedial action” and undertake a detailed assessment of the degree to which each of them satisfies the nine evaluation criteria. The remedy is then selected by applying the same criteria in their weighted form as threshold criteria, balancing criteria, and modifying criteria.³⁴

The regulations contain several caveats to this remedial selection scenario, however. On-site remedial actions selected in the ROD must either attain those ARARs that were identified at the time the ROD was signed or qualify for a waiver as provided in § 121(d)(4) of the statute.³⁵ In addition, remedies characterized by long-term effectiveness, reduction of toxicity, mobility or volume through treatment, and on-site treatment are to be given extra weight in selecting among alternatives that satisfy the two threshold requirements.³⁶ Any attempts by municipalities to impose more stringent remedies will likely be preempted by CERCLA.³⁷

Once the ROD is adopted, if the action taken differs significantly from the remedy selected in the ROD with respect to scope, performance, or cost, the lead agency must either publish an explanation of the significant differences or, if the differences fundamentally alter the basic features of the selected remedy, propose an

which effectively forecloses their use where there is projected human exposure beyond the facility, except in very limited circumstances. The critical inquiry for ACLs is the point of human exposure. The statute arguably precludes the use of ACLs except where contaminated groundwater discharges to a river. Unfortunately, the 1990 NCP revisions do not elaborate on the statutory requirements. *See* 40 C.F.R. § 300.430(e)(2)(i)(F).

²⁹40 C.F.R. § 300.430(e)(3)-(4); *see also* Memorandum from James E. Woolford & John E. Reeder to Superfund National Policy Managers, Regions 1 - 10, Summary of Key Existing EPA CERCLA Policies for Groundwater Restoration, OSWER Directive 9283.1-33 (June 26, 2009), http://www.epa.gov/superfund/health/conmedia/gwdocs/pdfs/9283_1-33.pdf.

³⁰40 C.F.R. § 300.430(e)(5).

³¹40 C.F.R. § 300.430(e)(6).

³²40 C.F.R. § 300.430(e)(7).

³³40 C.F.R. § 300.430(e)(9).

³⁴40 C.F.R. § 300.430(f). Requirements governing documentation of the decision are found at 40 C.F.R. § 300.430(f).

³⁵40 C.F.R. § 300.430(f)(1)(ii)(B). Requirements promulgated or modified after the ROD is signed must be attained or waived in two circumstances: at any time if the agency finds that they are applicable or relevant and appropriate and necessary to ensure that the remedy is adequately protective, or if the ROD is amended and they constitute ARARs. 40 C.F.R. § 300.430(f)(1)(ii)(B).

³⁶40 C.F.R. § 300.430(f)(1)(ii)(E). In the preamble to the 1990 NCP, EPA establishes a “guideline” that treatment as part of CERCLA remedies should generally achieve reductions of 90 to 99 percent in the concentration or mobility of individual contaminants of concern at Superfund sites. *See* 55 Fed. Reg. 8666, 8721 (Mar. 8, 1990).

³⁷*See, e.g.,* Town of Acton v. W.R. Grace & Co.-Conn. Techs., Inc., No. 13-12376 (D. Mass. Sept. 22, 2014) (local bylaw preempted because it purportedly required continued groundwater treatment, while remedial plan under CERCLA did not).

amendment to the ROD.³⁸

The regulations provide that MCLGs *set at levels above zero* (i.e., noncarcinogenic contaminants) shall be attained by remedial actions for ground or surface waters that are current or potential sources of drinking water, where the MCLG is relevant and appropriate under the circumstances of the release. Where the MCLG has been set at a level of zero, as for most carcinogens, the corresponding MCL is to be used as an ARAR if relevant and appropriate.³⁹ At present, most MCLs are set at the same level as MCLGs where the latter is greater than zero, but this new approach will become more of an issue in the future as MCLG levels for noncarcinogens are lowered.

§ 14:124 Superfund—Reimbursement

“Responsible parties” are jointly and severally liable for natural resource damages and response costs, without regard to fault.¹ When EPA carries out the response, it will first draw on the CERCLA Fund, but when a large segment of the work is complete, the Agency will call on responsible parties to reimburse the Fund.² If the call is not answered voluntarily, suit in district court may follow.³ Federal and state agencies and Indian tribes who are trustees for natural resources may recover the value of damaged natural resources or the costs of restoring natural resources threatened with irreversible loss under CERCLA § 111(b)(i). Trustees of natural resources must first attempt to recover from responsible parties, however, and even if unsuccessful they will be reimbursed by Superfund only if there is a surplus in the Fund that year not required for EPA responses under CERCLA § 111(d)(2), which is not likely to happen for many years.

Persons other than state or federal governments who incur response costs may also request reimbursement from the Fund, which will be subrogated to their claims.⁴ The persons who incur response costs also may recover directly from the responsible parties themselves.⁵

Government response costs must be “not inconsistent” with the NCP.⁶ In the NCP, EPA provides that “[a] private party response action will be considered ‘con-

³⁸40 C.F.R. § 300.435(c)(2).

³⁹40 C.F.R. § 300.430(e)(2)(i)(B)-(C). EPA justifies this approach in the preamble to the 1990 NCP on the grounds, among others, that MCLGs of zero are not appropriate because CERCLA does not require the complete elimination of risk or of all known or anticipated effects and that it is impossible to detect whether “true” zero has actually been attained. *See* 55 Fed. Reg. 8666, 8752 (Mar. 8, 1990).

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¹*See* CERCLA § 107(a), 42 U.S.C.A. § 9607(a); *see* § 14:128; Stever, *Law of Chemical Regulation and Hazardous Waste* Ch. 6.

²*United States v. Occidental Chem. Corp.*, 200 F.3d 143 (3d Cir. 1999) (holding that a PRP remains liable to EPA for response costs even though another PRP, the owner of the site, has committed to the government that it will clean up the site and will reimburse the Superfund for past response costs).

³*United States v. Union Gas Co.*, 586 F. Supp. 1522, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20491 (E.D. Pa. 1984); *see* § 14:128.

⁴*See* CERCLA § 112(b), 42 U.S.C.A. § 9612(b).

⁵*See* *City of Phila. v. Stepan Chem. Co.*, 544 F. Supp. 1135, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20915 (E.D. Pa. 1985), superseded by statute as stated in *E.I. DuPont De Nemours & Co. v. United States*, 460 F.3d 515 (3d Cir. 2006) (explaining SARA's effect on contribution rights). The plaintiffs may elect whether to claim against the Fund or responsible parties, but they may not do both; there is a three-year statute of limitations for all such claims. CERCLA § 112(d), 42 U.S.C.A. § 9612(d).

⁶*See* CERCLA § 107(a)(4)(A), 42 U.S.C.A. § 9607(a)(4)(A), *see* *Versatile Metals, Inc. v. Union Corp.*, 693 F. Supp. 1563, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20473 (E.D. Pa. 1988); *United States v. Ne. Pharm. & Chem. Co. (NEPACCO)*, 810 F.2d 726, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20603 (8th Cir. 1986), cert. denied, 484 U.S. 848 (1987); *United States v. Northern Plating Co.*, 685 F. Supp. 1410,

sistent with the NCP' if the action, when evaluated as a whole, is in substantial compliance with [listed NCP requirements] and results in a CERCLA-quality cleanup[.].⁷ Private party response costs must be approved beforehand by EPA as consistent with the NCP.⁸ Under the NCP, to be eligible to recover from the Fund, private parties must receive preauthorization prior to taking a response action.⁹ EPA will consider preauthorization only for removal actions, § 104(b) activities, and remedial actions at NPL sites,¹⁰ however, and will grant preauthorization to PRPs only in accordance with a § 106 order or a consent decree.¹¹ In order to receive prior approval, a private party must demonstrate the capability of responding properly to the release and establish that the action will comply with specified provisions of the revised NCP.¹² For these purposes, municipalities are considered agencies of the state and need not secure EPA's prior approval; their actions must only be "not inconsistent" with the NCP. They are also entitled to direct reimbursement for the services they provide—typically security and fire-fighting—in EPA cleanups.

Persons who, pursuant to a § 106(a) order, complete remedial action at a facility may seek reimbursement from the Superfund, of all or a part of their remedial expenditures, plus statutory interest pursuant to authority contained in § 106(b)(2).¹³ Section 300.700 of the NCP does, however, set forth a list of NCP provisions that EPA believes are "potentially applicable" to all private party response actions¹⁴ and cautions private parties that they should provide an opportunity for public comment

18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21338 (W.D. Mich. 1988).

⁷See 40 C.F.R. § 300.700(c)(3).

⁸CERCLA § 107(a)(4)(B), 42 U.S.C.A. § 9607(a)(4)(B); *see* Martin, Way & Green, "Private Cost-Recovery Actions Under CERCLA § 307," 1 Env'tl. Claims J. 377 (1989).

⁹40 C.F.R. § 300.700(d)(2).

¹⁰40 C.F.R. § 300.700(d)(3).

¹¹40 C.F.R. § 300.700(d)(5). This provision implements § 122(e)(6) of the 1986 amendments, which prohibits a PRP from undertaking without preauthorization any remedial action at a facility at which EPA, or a PRP pursuant to an administrative order or consent decree, has commenced an RI/FS.

¹²40 C.F.R. § 300.700(d)(4). Those provisions include compliance with worker health and safety, documentation, ARAR, site evaluation, permit, RI/FS, remedial design/remedial action, and public participation requirements. *See* 40 C.F.R. § 300.700(c)(5)-(8). EPA must certify that the costs were necessary and consistent with the preauthorization decision document in order for the claimant to recover under Section 111. 40 C.F.R. § 300.700(d)(8).

¹³The provision was added by § 106 of Pub. L. No. 99-499, 100 Stat. at 1628. The interest rate, as in other CERCLA interest payments, is the same as the rate specified for investment of the Superfund, under Chapter 98 of the Internal Revenue Code.

¹⁴40 C.F.R. § 300.700(c)(5) provides: The following provisions are potentially applicable to private party's response actions:

- (i) Section 300.150 (on worker health and safety);
- (ii) Section 300.160 (on documentation and cost recovery);
- (iii) Section 300.400(c)(1), (4), (5), and (7) (on determining the need for a Fund-financed action); (e) (on permit requirements) except that the permit waiver does not apply to private party response actions; and (g) (on identification of ARARs) except that applicable requirements of federal or state law may not be waived by a private party;
- (iv) Section 300.405(b), (c), and (d) (on reports of releases to the NRC);
- (v) Section 300.410 (on removal site evaluation) except paragraphs (e)(5) and (6);
- (vi) Section 300.415 (on removal actions) except paragraphs (a)(2), (b)(2)(vii), (b)(5), and (f); and including § 300.415(i) with regard to meeting ARARs where practicable except that private party removal actions must always comply with the requirements of applicable law;
- (vii) Section 300.420 (on remedial site evaluation);
- (viii) Section 300.430 (on RI/FS and selection of remedy) except paragraph (f)(1)(ii)(C)(6) and that applicable requirements of federal or state law may not be waived by a private party; and
- (ix) Section 300.435 (on RD/RA and operation and maintenance).

on the selection of the response action.¹⁵

In one of the more significant and potentially controversial 1990 modifications to the NCP, EPA also offers a substantive standard against which consistency is to be measured in § 107(a)(4)(B) private cost recovery actions, stating that a private party response action will be considered “consistent with the NCP” if the action, “when evaluated as a whole,” is in “substantial compliance” with the applicable requirements specified in the regulation and results in a “CERCLA-quality cleanup.”¹⁶ Moreover, the regulations now provide that neither federal nor private cost recovery actions will be defeated by “immaterial or insubstantial deviations” from the NCP.¹⁷

EPA contends in the preamble to the provisions that the decision to define a substantial compliance standard for private party cost recovery actions is within its discretion, and that the standard adopted will further EPA’s interests in promoting CERCLA-quality cleanups and encouraging private party cleanups by removing unnecessary obstacles to private party recoveries from responsible parties.¹⁸ It remains to be seen whether the courts will feel bound by EPA’s pronouncements,¹⁹ however, and the wiser course for the present may be compliance with the full set of requirements identified by the Agency as potentially relevant to private actions.²⁰

In order to recover, the claimant must be able to demonstrate by a preponderance of the evidence either that he is not a potentially responsible party under § 107,²¹ or that ROD he was required to implement by the order was, on the basis of its administrative record, arbitrary and capricious or was not otherwise in accordance with law.²² The first class of claimant may only recover costs that are reasonable in light of the requirements of the order. The second may only recover such costs to the extent that his expenditures exceed those costs that would have been incurred under an ROD for the facility that was not arbitrary and capricious.

The statute creates a cause of action in the federal district courts for a § 106(b)(2) claimant whose claim has been rejected by the Fund manager. Costs and fees may be sought under 28 U.S.C.A. §§ 2712(a) and (d).

§ 14:125 Cleanup at RCRA facilities

Section 300.700(b)(7) also provides that when selecting the appropriate remedial action, the methods of remedying release listed in Appendix D of Part 300 might also be appropriate to a private party response action.

¹⁵40 C.F.R. § 300.700(c)(6).

¹⁶40 C.F.R. § 300.700(c)(3)(i). A “CERCLA-quality cleanup” is defined in the preamble as a cleanup that satisfies the three basic remedy selection requirements of § 121(b)(i)—that the remedial action must be protective of human health and the environment, utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable, and be cost effective—and that attains ARARs and provides for meaningful public participation. *See* 55 Fed. Reg. 8666, 8793 (Mar. 8, 1990). EPA has revised its policy linking deletion from the NPL with the requirement under § 121(c) that remedial sites be reviewed five years after initiation of a cleanup. Sites on the NPL that are otherwise eligible to be deleted but remain on the list solely because they await the five-year review will now be removed. 56 Fed. Reg. 66601 (Dec. 24, 1991).

¹⁷40 C.F.R. § 300.700(c)(4).

¹⁸55 Fed. Reg. 8666, 8793 (Mar. 8, 1990).

¹⁹*See, e.g., County Line Inv. Co. v. Tinney*, 933 F.2d 1508 (10th Cir. 1991).

²⁰*See* 40 C.F.R. § 300.700(c)(5)-(7).

²¹Such claimants will likely be limited, as a practical matter, to innocent good faith purchasers of the property or adjacent property owners who volunteered to clean up the site.

²²CERCLA § 106(b)(2)(D), 42 U.S.C.A. § 9606(b)(2)(D).

RCRA requires owners and operators of hazardous waste management facilities¹ and underground storage tanks² to clean up contamination at their facilities and, in some cases, contamination beyond facility boundaries.³

§ 14:126 Cleanup at RCRA facilities—Hazardous waste management facilities

Under RCRA § 7003, EPA retains general authority to require abatement of imminent hazards at active or abandoned solid waste facilities.¹ While some older litigation continues to generate opinions, the Agency rarely relies on this authority since RCRA now provides more easily manageable administrative procedures for requiring cleanup at active sites, while CERCLA supplies more authority for responding to abandoned sites.² Section 7003 still has some theoretical utility in any case where solid wastes, but not hazardous substances, are the source of a threat and EPA wishes to conserve scarce CERCLA funds which cannot be recovered in such a case.³

EPA has published regulations which set the threshold for cleanup at hazardous waste management facilities.⁴ Generally speaking, any statistically significant increase in groundwater contamination by a long list of designated pollutants, or any hazardous waste managed at the site, will trigger cleanup.⁵ Once required, cleanup must continue until background levels of contamination are restored.⁶ Where local conditions make complete restoration impractical, EPA may set alternate groundwater quality standards, called ACLs which are incorporated into the facility permit.⁷ The remedy itself is to be incorporated in the permit.

Owners and operators of land disposal facilities, and some storage facilities which are classified as “disposal” facilities for this purpose, must take corrective actions even beyond their facility boundaries where necessary to protect human health and the environment unless, after making best efforts, the owner or operator cannot obtain permission to take such action.⁸

These requirements for cleanup are also to be incorporated in facility permits,

[Section 14:125]

¹See 40 C.F.R. Part 264, Subpart F.

²See RCRA § 9003, 42 U.S.C.A. § 6991b.

³See RCRA § 3004(c), 42 U.S.C.A. § 6924(c).

[Section 14:126]

¹RCRA § 7003, 42 U.S.C.A. § 6973; see Stever, *Law of Chemical Regulation and Hazardous Waste* Ch 6; see § 14:128.

²In *Colorado v. U.S. Dep't of the Army*, 707 F. Supp. 1562, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20815 (D. Colo. 1989), the court held that a CERCLA cleanup of an entire federal facility does not preempt a state RCRA enforcement action directed toward the only portion of the site not listed on the NPL.

³RCRA § 7003, 42 U.S.C.A. § 6973, applies generally to “solid wastes,” not only hazardous wastes and hazardous substances which are the only basis for injunctions or recovery of response costs under CERCLA. The range of hazardous substances is so broad, however, that the authority is rarely needed.

⁴See 40 C.F.R. Part 264 Subpart F; 55 Fed. Reg. 30798 (July 27, 1990) (proposing major substantive changes in EPA's corrective action program); 64 Fed. Reg. 54604 (Oct. 7, 1999) (withdrawing proposed changes).

⁵See § 14:59.

⁶See § 14:59.

⁷See § 14:59.

⁸RCRA § 3004(u), 42 U.S.C.A. § 6924(u); see 55 Fed. Reg. 30798 (July 27, 1990).

discussed above.⁹

§ 14:127 Cleanup at RCRA facilities—Underground storage tanks

In 1988, EPA replaced its interim UST regulations with final regulations that contain corrective action requirements.¹ These provisions are discussed in § 14:80.

State plans for regulating underground storage tanks (USTs) must contain provisions requiring owners and operators of USTs to maintain leak-detection systems and to take corrective action when contamination is found.² EPA must administer programs directly until states submit approvable plans.³ Beginning in December 1986, a miniature version of Superfund, the LUST Fund, was established to allow EPA or state cleanup of petroleum leaks from buried tanks, where owners or operators were not available, were unwilling, or unable to perform the cleanup. Unlike Superfund, the LUST cleanup program may be administered by states under cooperative agreements with EPA.⁴

VI. ENFORCEMENT AND LIABILITY*

§ 14:128 RCRA enforcement

The RCRA enforcement scheme involves five separate components, three of which are related. First, the RCRA permit program is the cornerstone of the Act's enforcement structure.¹ Related to the permit program are the basic compulsory information gathering provisions² and the Subtitle C administrative and judicial enforcement provisions,³ including a citizen suit provision.⁴

The RCRA imminent hazard provision, § 7003,⁵ and a complementing compulsory information gathering provision⁶ is functionally separate from the regulatory enforcement provisions, and is actually more closely linked to the imminent hazard provision of CERCLA.⁷

The fifth RCRA enforcement element involves administrative authority to order site remediation at RCRA-regulated sites, added to the statute in 1984 by Pub. L. No. 98-616.⁸

The UST program, created by Pub. L. No. 96-616, and contained within Subtitle I

⁹See § 14:46.

[Section 14:127]

¹40 C.F.R. Part 280, Subparts A to G (1988); 53 Fed. Reg. 37082 (Sept. 23, 1988).

²See RCRA § 9004(a)(4), 42 U.S.C.A. § 6991c(a)(4).

³See RCRA § 9004, 42 U.S.C.A. § 6991c.

⁴See § 14:82.

*By **Donald W. Stever**; updates by **Eliza A. Dolin**, **Celia Campbell-Mohn** and **Kerry E. Rodgers**. Portions of this material are derived from Stever, *Law of Chemical Regulation and Hazardous Waste* Chs. 5 and 6, which contain a more detailed discussion of these topics.

[Section 14:128]

¹See generally § 14:46.

²RCRA § 3007, 42 U.S.C.A. § 6927.

³RCRA § 3008, 42 U.S.C.A. § 6928.

⁴RCRA § 7002, 42 U.S.C.A. § 6972; see also *Hallstrom v. Tillamook County*, 493 U.S. 20, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20193 (1989) (sixty-day notice provision in § 7002(b) is jurisdictional), reh'g denied, 493 U.S. 1037 (1990).

⁵RCRA § 7003, 42 U.S.C.A. § 6973, is discussed jointly with CERCLA § 106, 42 U.S.C.A. § 9606.

⁶RCRA § 3013, 42 U.S.C.A. § 6934.

⁷CERCLA § 106(a), 42 U.S.C.A. § 9606(a).

⁸RCRA § 3004(t)-(u), 42 U.S.C.A. § 6924(t)-(u) (corrective action orders); RCRA § 3008(h), 42

of RCRA, has its own self-contained enforcement scheme.⁹

§ 14:129 RCRA enforcement—Information gathering

Section 3007 provides the EPA with broad, albeit not unlimited, authority to secure information from persons subject to regulation under Subtitle C and from a limited class of persons not subject to Subtitle C regulation.¹ Information demands under § 3007(a) may be initiated by EPA or state agency personnel or their “representatives.”²

The statute authorizes formal, written demands for information relating to the recipient’s hazardous waste-related activities, access to the recipient’s premises for the purpose of inspecting and copying records,³ and forced entry into the site for inspection and to “obtain samples from any person” of wastes, containers, and labels.⁴ EPA most frequently has employed § 7003’s authority to compel regulated entities to disgorge written information by sending written information requests to the targets, which are framed somewhat like interrogatories in civil litigation.

EPA may use information derived through § 3007 for the purpose of developing Subtitle C regulations or policies, or for RCRA civil or administrative enforcement purposes.⁵

An interesting side issue concerns whether internal audits may be protected from

U.S.C.A. § 6928(h) (interim status corrective action).

⁹See generally § 14:82. The LUST provisions were amended in 1986 by § 205 of the SARA, Pub. L. No. 99-499, 100 Stat. 1613. These amendments established a trust fund to provide resources for cleaning up contaminated groundwater and established a corrective action enforcement and recoupment scheme for petroleum tank leaks.

[Section 14:129]

¹The statute authorizes EPA to compel information from any person who “has handled” hazardous waste. The past tense language, added by Pub. L. No. 96-482, 94 Stat. 2334 (1980), appears to encompass inadvertent waste handlers and people who actually handled hazardous waste in the past, although it does not appear broad enough to cover past site owners who did not actively engage in hazardous waste-related activity. Cf. RCRA § 3013(b), 42 U.S.C.A. § 6934(b), which contains specific language relating to previous owners and operators.

²The phrase “representatives” was added by Pub. L. No. 96-482, 94 Stat. 2334 (1980) to overcome ambiguity in the previous language as to whether it encompassed contract enforcement personnel. Information considered confidential by the recipient of a § 3007 demand must be declared as such by the person seeking to protect it. If properly so declared under EPA’s confidentiality regulations, such information is protected from unauthorized disclosure by § 3007(b), and is subject to protection under 18 U.S.C.A. § 1905.

³The NCP provides for EPA to designate PRPs, as well as other third parties, as its representative for the purpose of access, and to exercise its § 104(e) authority to obtain access for them, but limits this authority in the case of PRPs to parties who have agreed to conduct response activities pursuant to an administrative order or consent decree. 40 C.F.R. § 300.400(d)(3).

⁴Nonconsensual entry requires a search warrant. *Marshall v. Barlows, Inc.*, 436 U.S. 307, 8 Env’tl. L. Rep. (Env’tl. L. Inst.) 20434 (1978). But cf. *Dow Chem. Co. v. United States*, 476 U.S. 227, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20679 (1986) (holding that a warrant is not required by EPA to fly over an industrial facility and take photographs with sophisticated equipment). The language of the statute does not, moreover, clearly authorize the digging of soil, extraction of groundwater, and the like, since it seems to assume that the samples will be in the possession of the regulated entity. EPA does not read the provision so narrowly, however, and its reading has been upheld. See *National-Standard Co. v. Adamkus*, 881 F.2d 352, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 21144 (7th Cir. 1989) (also holding that the Agency may inspect and sample for any hazardous waste within the RCRA scheme and may inspect even where a release has not occurred).

⁵Although EPA has tended to use RCRA § 3007, 42 U.S.C.A. § 6927, to gain information relevant to Superfund investigations, such use is arguably not authorized. One reported case in which the owner of a site subject to CERCLA activity challenged a RCRA § 3007 order held that the order was within EPA’s authority, without discussing this issue. *United States v. Liviola*, 605 F. Supp. 96, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20452 (N.D. Ohio 1985). In that case, EPA had also sent the plaintiff an

mandated disclosure. Since 1993 several states have passed audit protection laws.⁶ Legislation is pending in several other states. In response, EPA has issued guidance identifying principles that the Agency intends to use in judging whether an audit protection law interferes with a state's enforcement authority with respect to federally delegated programs under RCRA, the Clean Air Act, the Clean Water Act, and the Safe Drinking Water Act, and whether to delegate a new program or approve a modification to an existing program in a state with an audit protection law.⁷ EPA has also stated that it will not request or use audit reports to initiate civil or criminal investigations.⁸

Section 3013 was added to the statute in 1980.⁹ It authorizes EPA, but apparently not delegated states,¹⁰ to order past or present site owners or operators to undertake "monitoring, testing, analysis and reporting" as the Agency deems reasonable to "ascertain the nature and extent" of the hazard posed by the site.¹¹

Prior to issuing such an order, the Agency official (ordinarily the Regional Administrator) is required to make a formal finding that the presence or release of hazardous waste from the site or facility "where hazardous waste is, or has been, stored, treated or disposed of . . . may present a substantial hazard to human

information demand under § 104(e) of CERCLA, 42 U.S.C.A. § 9604(e). *See also* United States v. Charles George Trucking Co., 642 F. Supp. 329, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20495 (D. Mass. 1986). EPA's need to use RCRA § 3007 for CERCLA purposes ended with the significant broadening of § 104(e) of CERCLA in the 1986 amendments to that statute.

The use of § 7003-derived information for criminal enforcement purposes is limited by constitutionally derived criminal procedure proscriptions. Although such information collected prior to the determination that a crime may have been committed may be used, subsequent use of § 7003 is probably limited to parallel civil or criminal investigations.

⁶*See, e.g.,* Colo. Rev. Stat. § 13-25-126.5; Ind. Code §§ 13-28-4-1 to 13-28-4-9; Ky. Rev. Stat. Ann. § 224.01-040; Or. Rev. Stat. § 468.963; Va. Code Ann. § 10.1-1198; *see also* Reichhold Chems., Inc. v. Textron, Inc., 157 F.R.D. 522, 527, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 20307, 20309 (N.D. Fla. 1994) (applying self-critical analysis privilege to "reports . . . prepared after the fact for the purpose of candid self-evaluation and analysis of the cause and effect of past pollution").

In addition, several states have passed legislation providing for immunity from penalties for violations discovered through environmental audits. *E.g.,* Colorado (Colo. Rev. Stat. §§ 13-25-126.5, 25-1-114.5); Kansas (Kan. Stat. Ann. § 60-3338); Kentucky (Ky. Rev. Stat. Ann. § 224.01-040); Michigan (Mich. Comp. Laws Ann. §§ 324.14801 to 324.14809); New Jersey (N.J. Stat. Ann. 13:1D-125 to 13:1D-130); Ohio (Ohio Rev. Code Ann. §§ 3745.70 to 3745.72); South Carolina (S.C. Code Ann. §§ 48-57-10 to 48-57-100); South Dakota (S.D. Codified Laws §§ 1-40-33 to 1-40-37); Utah (Utah Code Ann. §§ 19-7-101 to 19-7-109); Virginia (Va. Code Ann. §§ 10.1-1198 to 10.1-1199); Wyoming (Wyo. Stat. Ann. §§ 35-11-1105 to 35-11-1106).

⁷*See* Memorandum from Steven A. Herman et al. to EPA Regional Administrators, Statement of Principles: Effect of State Audit Immunity/Privilege Laws on Enforcement Authority for Federal Programs (Feb. 14, 1997). According to EPA, state audit protection laws must permit regulators to retain the information-gathering authority needed to carry out federal programs and should avoid making the privilege applicable to criminal investigations, grand jury proceedings, and prosecutions. Such laws must protect the public right to obtain information regarding noncompliance and reporting violations and to bring citizen suits for such violations. In addition, for EPA to delegate a federal environmental program in a state with a penalty-immunity statute, state regulators must have the ability to obtain immediate and complete injunctive relief against violators, regardless of whether the violators conduct environmental audits. States must also retain the ability to collect civil fines for significant economic benefit gained through violations, repeat violations, violations of judicial or administrative orders, serious harm, and actions that may pose an imminent and substantial danger to health or the environment.

⁸U.S. EPA, Final Policy Statement, Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations, 60 Fed. Reg. 66706, 66711 (Dec. 22, 1995); *see also* § 8:45.

⁹Pub. L. No. 96-482, 94 Stat. 2334 (1980).

¹⁰Specific language authorizing states to use RCRA § 3007 is lacking in RCRA § 3013. *Compare* 42 U.S.C.A. § 6927 *with* 42 U.S.C.A. § 6934.

¹¹RCRA § 3013(a)-(b), 42 U.S.C.A. § 6934(a)-(b).

health or the environment.”¹² This formal determination appears to be final Agency action that is reviewable by a federal district court; there is some judicial authority confirming this.¹³

Failure to comply with an order issued under § 3007 subjects the recipient to enforcement under § 3008. Section 3013, however, contains its own enforcement provision,¹⁴ giving rise to an issue as to the applicability of § 3008 remedies to § 3013.

§ 14:130 RCRA enforcement—Civil and administrative enforcement

The majority of RCRA enforcement authority emanates from § 3008 of the statute, which is generally similar in its structure to the enforcement provisions of other federal environmental laws.

Section 3008(a) provides for both judicial and administrative enforcement of Subtitle C regulatory requirements.¹ To redress a violation of a Subtitle C requirement, EPA may issue a compliance order, which may in turn include levy of a penalty² and/or suspension or revocation of a permit.³ The Agency may also seek injunctive relief and civil penalties in an action brought in the district court.⁴ Failure to comply with a compliance order makes the recipient liable for compound violations.⁵ EPA is required to offer the recipient of a compliance order or administrative penalty an adjudicatory hearing within 30 days of service of the order or levy.⁶

Relatively little civil enforcement of Subtitle C requirements occurred between

¹²RCRA § 3013(a), 42 U.S.C.A. § 6934(a). Arguably, the purpose of such a self-monitoring effort is limited to identifying what is at the site, the distribution of wastes in the soil and groundwater, the direction and rate of migration and other information relative to ascertaining human or environmental exposure. A § 3013 order requiring the site owner/operator to ascertain the source of the contaminants would appear not to be within EPA's authority.

¹³See *DuPont v. Daggett*, 610 F. Supp. 260 (W.D.N.Y. 1985) (opining that judicial review is available but denying review on the facts). Section 104(e) of CERCLA, 42 U.S.C.A. § 9604(e), is another information gathering provision. Review of § 104(e) orders has generally been denied. See discussion below.

¹⁴RCRA § 3013(e), 42 U.S.C.A. § 6934(e), authorizes a civil action initiated by EPA in the federal district court and judicially imposed civil penalties of up to \$5000 per day for each day such failure or refusal occurs.

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¹RCRA § 7003, 42 U.S.C.A. § 6973, the imminent and substantial endangerment provision, contains its own penalty provision, and is thus not governed by enforcement under § 3008, 42 U.S.C.A. § 6928.

²RCRA § 3008(a), (c), 42 U.S.C.A. § 6928(a), (c). The amount of any administratively levied penalty is that which EPA determines to be “reasonable” taking into account the seriousness of the violation and good faith efforts to comply, and is probably upwardly bounded by § 3008(g)'s \$25,000 per day limit. 42 U.S.C.A. § 6928(g). EPA sets penalty amounts by means of its formal RCRA penalty policy, which it adopted as non-rulemaking guidance in 1984. See *United States v. Vineland Chem. Co.*, 931 F.2d 52, 33 ERC (BNA) 1316 (3d Cir. 1991).

A penalty levy is not dependent upon the issuance of a compliance order, and penalties may be levied in the absence of a showing of willfulness. See *United States v. Liviola*, 605 F. Supp. 96, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20452 (N.D. Ohio 1985).

³For EPA's permit suspension policies and procedures, see generally 40 C.F.R. Part 270, Subpart D.

⁴RCRA § 3008(a), (g), 42 U.S.C.A. § 6928(a), (g). EPA is represented by the Environmental Enforcement Section of the Land and Natural Resources Division in the Department of Justice in its RCRA enforcement litigation.

⁵See RCRA § 3008(a)(3), 42 U.S.C.A. § 6928(a)(3).

⁶RCRA § 3008(b), 42 U.S.C.A. § 6928(b). EPA's hearing procedures are set forth in 40 C.F.R. Part 22. The constitutionality of the § 3008 penalty provisions has been unsuccessfully challenged. *United*

1980, when EPA really started the RCRA program, and 1984, when Congress amended the statute significantly.⁷ In the 1984 amendments, Congress required EPA to conduct mandatory bi-yearly inspections of TSD facilities,⁸ required compulsory termination of land disposal facilities on November 8, 1985, that had not filed a Part B permit application and certified compliance with the applicable Part 265 groundwater monitoring and financial responsibility requirements, as modified by several provisions of the new amendments.⁹

The amendments also added § 3008(h), specifically authorizing EPA to order corrective remedial action at interim status sites where a release of hazardous waste¹⁰ into the environment has occurred, and § 3004(u), requiring permits to require clean-up of “all releases of hazardous waste *or constituents* from any solid waste management unit . . . regardless of time at which waste was placed in such unit.”¹¹

Finally, § 3004(v) legislatively overruled EPA’s previous practice of requiring corrective action by permitted facilities only within the facility boundary, requiring corrective action to extend to offsite areas in the absence of a showing of impossibility.¹² Sections 3004(u) and (v) are enforced primarily through the Part 270 permit process, and the ordinary § 3008 enforcement scheme. Section 3008(h) is a separate order-issuing authority that does not contain an explicit hearing requirement, and EPA determined that the adjudicatory hearing provisions of Part 22 were inapplicable to it. The Agency promulgated separate hearing rules in 1988.¹³ Section 3008(h) contains its own administrative penalty authority.¹⁴

From an enforcement standpoint, the compulsory termination requirement of § 3005(e) produced a significant amount of enforcement activity. EPA’s “loss of interim status” (LOIS) program involves Agency efforts to secure closure and remediation at sites that failed to meet the November 8, 1985, deadline for certification of compliance with groundwater monitoring and financial responsibility requirements. There were a relatively large number of such cases, due to two factors. First, liability insurance, a mandatory requirement of Parts 264 and 265, became effectively unavailable to TSD facilities by early 1985. Second, EPA, in its Ground-

States v. Vineland Chem. Co., 692 F. Supp. 415, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20160 (D.N.J. 1988).

⁷There were, of course, a number of § 7003 cases, which are discussed in § 14:135.

⁸See RCRA § 3007(e), 42 U.S.C.A. § 6927(e) (version in force 1984). The mandatory inspection requirement does not apply to states that have been given authority to operate the RCRA program.

⁹RCRA § 3005(e), 42 U.S.C.A. § 6925(e); see §§ 14:55 and 14:57.

¹⁰EPA’s guidance on § 3008(h), 42 U.S.C.A. § 6928(h), stated that it applied as well to hazardous constituents as well as identified and listed hazardous wastes, except for releases from underground storage tanks, which are separately regulated. The Agency also interpreted the provision as being applicable to *solid* waste management units as well as hazardous waste cells at facilities handling both solid and hazardous waste, and to apply to all illegal interim status facilities as well as lawfully operating ones. Finally, EPA took the position that § 3008(h) can be used to address all releases, not just those stemming from violations of RCRA. EPA v. Env’tl. Waste Control, Inc., 917 F.2d 327, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 20007 (7th Cir. 1990), cert. denied, 499 U.S. 975 (1991).

¹¹Inclusion of “constituents” within the statutory language makes such actions applicable to breakdown or reaction products of hazardous wastes. The phrase “solid waste management unit” was construed by EPA in its December 1985 guidance document to limit § 3004(u), 42 U.S.C.A. § 6924(u), permit-imposed remedial requirements only to releases from units that are subject to RCRA regulation, and not to releases from units that had been closed prior to the onset of RCRA regulation.

¹²42 U.S.C.A. § 6924(v). Refusal of offsite landowners to give permission to the permittee to enter their land is the sole basis for exception.

¹³53 Fed. Reg. 12256 (Apr. 13, 1988). Generally these procedures are less formal than those for the full adjudicatory hearings previously required by 40 C.F.R. Part 22. The new regulations were upheld in Chem. Waste Mgmt., Inc. v. EPA, 869 F.2d 1526, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20641 (D.C. Cir. 1989).

¹⁴RCRA § 3008(h)(2), 42 U.S.C.A. § 6928(h)(2) (up to \$25,000 per day of noncompliance).

Water Monitoring Technical Enforcement Guidance,¹⁵ took the position that monitoring well networks installed pursuant to state orders during interim status, which were inconsistent with the Agency's current monitoring guidelines, could not be certified as in compliance, and facilities in such a situation would be subject to enforcement and loss of interim status. No doubt the Agency's strategy in such situations was to secure compliance in as many cases as possible, rather than closure.

EPA's enforcement scheme is largely irrelevant in states that have taken delegation of the RCRA program. Section 3006 requires that state programs be "adequate," and that, in general, state programs be "equivalent" to the EPA program.¹⁶ State enforcement programs delegated under this scheme demonstrate a divergence in enforcement procedures and sanctions among the states.

§ 14:131 RCRA enforcement—Citizen enforcement

Section 7002 of RCRA allows any "person" to commence a civil action in a federal district court¹ on his own behalf against any other person, including the United States or any other governmental entity² who is alleged to be in violation of any requirement or prohibition under the Act.³ A citizen suit must allege continuing violations.⁴ Suits against EPA are authorized to compel the performance of nondiscretionary actions.

There is a sixty-day prior notice requirement,⁵ which the Supreme Court held is a

¹⁵EPA, Ground-Water Monitoring Compliance Order Guidance (Aug. 1985); see *Nat'l Solid Wastes Mgmt. Ass'n v. Thomas*, No. 86-1727 (D.C. Cir. Oct. 27, 1987) (memorandum op.) (holding that a Ground-Water Monitoring Technical Enforcement Guidance Document (TEGD) was not a rule, based on EPA's argument that the TEGD would not be applied as binding legal precedent in any future compliance proceedings).

¹⁶The Eighth Circuit has held that generally EPA does not have the authority to enforce state requirements. However, EPA can initiate an enforcement action if EPA (1) determines that the state's enforcement action is inadequate and provides the state with a written notice to that effect; or (2) withdraws its authorization after providing the state with an opportunity to correct the deficiency. See *Harmon Indus., Inc. v. Browner*, 191 F.3d 894, 29 Env'tl. L. Rep. (Env'tl. L. Inst.) 21412 (8th Cir. 1999). *Contra United States v. Power Eng'g Co.*, 125 F. Supp.2d 1050, 31 Env'tl. L. Rep. (Env'tl. L. Inst.) 20335 (D. Colo. 2000) (holding that the EPA has the authority to bring an enforcement action against a company under RCRA even if the state has already initiated an action for the same violations). EPA has developed "model language" that may be incorporated into state RCRA programs, which indicates that EPA retains the right to take enforcement actions regardless whether the state takes its own action. However, states subject to the jurisdiction of the Eighth Circuit may not use the model language in their RCRA programs.

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¹Venue lies in the district where the alleged violation or endangerment may occur. RCRA § 7002(a)(2), 42 U.S.C.A. § 6972(a)(2).

²This is subject to constraints of U.S. Const. amend. XI, which limits suits against states.

³The "prohibition" language was added in 1984 by Pub. L. No. 98-616, 98 Stat. 3221, in part to clearly authorize citizen imminent hazard suits under § 7003.

⁴*Ascon Props., Inc. v. Mobil Oil Co.*, 866 F.2d 1149, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20374 (9th Cir. 1989) (adopting the holding regarding citizen suits under the Clean Water Act in *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., Inc.*, 484 U.S. 49, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20142 (1987)); see also *Dydio v. Hesston Corp.*, 887 F. Supp. 1037, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 20312 (N.D. Ill. 1995); *Singer v. Bulk Petroleum Corp.*, 9 F. Supp. 2d 916 (N.D. Ill. 1998) (permitting a suit under § 6972(a)(1)(B) against a former tenant to proceed on the basis of "imminent and substantial endangerment" even though some courts have limited RCRA liability, in other instances, to current operators).

⁵See RCRA § 7002(b)(1), 42 U.S.C.A. § 6972(b)(1). For citizen imminent and substantial endangerment actions, the waiting period is 90 days unless a Subtitle C violation is also alleged. RCRA § 7002(b)(2), 42 U.S.C.A. § 6972(b)(2).

mandatory precondition to suit.⁶ District courts that have considered the requisite specificity of citizen suit notices have held that such notices need only be sufficiently specific to permit the violator and the government to identify the violations complained of, and that citation to specific regulations is not required.⁷

Citizen suits are barred if the United States has commenced and is diligently prosecuting a civil or criminal enforcement action in court.⁸ An enforcement action pursuant to state law, however, is not a bar to a RCRA citizen suit.⁹

Citizens may obtain injunctive relief¹⁰ and, since the 1984 amendments, civil penalty awards, along with costs and expert witness or attorney fees.¹¹ In order to obtain attorney's fees, the private plaintiff must be pursuing some public benefit, rather than a purely private remedy.¹² Recovery of monetary damages, however, is generally not permitted.¹³ Government agencies, such as EPA, can also utilize

⁶*Hallstrom v. Tillamook County*, 493 U.S. 20, 110 S. Ct. 304, 107 L. Ed. 2d 237, 20 Env'tl. L. Rep. 20193 (1989). Subsequent cases have treated the notice requirement as jurisdictional. *See, e.g., Garcia v. Cecos Intern., Inc.*, 761 F.2d 76, 82, 15 Env'tl. L. Rep. 20528 (1st Cir. 1985); *Natural Res. Def. Council v. Sw. Marine, Inc.*, 236 F.3d 985, 995, 31 Env'tl. L. Rep. 20329 (9th Cir. 2000); *see* Coplan, *Is Citizen Suit Notice Jurisdictional and Why Does it Matter?*, 10 Widener L. Symp. J. 49 (2003). *see also* *Aiello v. Town of Brookhaven*, 136 F. Supp.2d 81 (E.D.N.Y. 2001) (holding that a citizen suit that involved allegations regarding violations of subchapter III of RCRA were sufficient to bring the entire complaint under the exception to RCRA's delay requirement, even if the hazards found to present no imminent and substantial endangerment).

⁷*Fishel v. Westinghouse Elec. Corp.*, 617 F. Supp. 1531, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20001 (M.D. Pa. 1985); *see also* *Williams v. Allied Automotive*, 704 F. Supp. 782, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20689 (N.D. Ohio 1988).

⁸42 U.S.C.A. § 6972(b)(2)(B). Citizens have a right of permissive intervention in government Subtitle C enforcement actions pending in federal courts. For a brief period, between the adoption date of the 1984 amendments and the date of enactment of the 1986 SARA amendments to CERCLA, which contain a curative provision (§ 113(i)), there was apparently no right of citizen intervention in RCRA § 7003 actions. *Compare* RCRA § 7002(b)(1), 42 U.S.C.A. § 6972(b)(1) (version in force 1984) *with* RCRA § 7002(b)(2), 42 U.S.C.A. § 6972(b)(2) (version in force 1984). Presently, the right of intervention is applicable to all government-initiated RCRA litigation. Historically, courts have held that administrative enforcement actions do not qualify as "diligent prosecution" and, therefore, do not bar citizen suits. *See Morris v. Primetime Stores of Kansas, Inc.*, No. 95-1328-JTM, 43 ERC (BNA) 1762, 1996 WL 563845 (D. Kan. Sept. 5, 1996); *City of Toledo v. Beazer Materials & Servs., Inc.*, 833 F. Supp. 646 (N.D. Ohio 1993); *Lykins v. Westinghouse Elec. Corp.*, 715 F. Supp. 1357 (E.D. Ky. 1989). Section 7002, 42 U.S.C.A. § 6972(b)(2)(B) (version in force in 2011), provides a limited bar to citizen suit prosecution for administrative enforcement actions under CERCLA section 106, 42 U.S.C.A. § 9606, or RCRA section 7003, 42 U.S.C.A. § 6973, pursuant to which a responsible party is diligently conducting a removal action, RI/FS, or proceeding with a remedial action.

⁹*Murray v. Bath Iron Works Corp.*, 867 F. Supp. 33, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 20547 (D. Me. 1994).

¹⁰RCRA § 7002(a)(2), (e), 42 U.S.C.A. § 6972(a)(2), (e). There are two statutory limitations. Citizens may not seek to enjoin the siting of a new TSD facility nor enjoin the issuance of a permit. RCRA § 7002(b)(2)(D), 42 U.S.C.A. § 6972(b)(2)(D). Suits to enjoin railroads are limited to suits alleging negligence. RCRA § 7002(g), 42 U.S.C.A. § 6972(g). There are also specific limitations on citizen imminent and substantial endangerment actions, which are discussed below. Citizens may obtain injunctions requiring the defendant to participate in monitoring and investigating the contamination that is the subject of the suit. *See Lincoln Props., Ltd. v. Higgins*, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20665 (E.D. Cal. Jan. 21, 1993).

¹¹RCRA § 7002(a)(2), (e), 42 U.S.C.A. § 6972(a)(2), (e). Only "prevailing or substantially prevailing" parties may be awarded attorney fees.

¹²*Fallowfield Dev. Corp. v. Strunk*, No. CIV. A. 89-8644, 1993 WL 157723, at *15-17 (E.D. Pa. May 11, 1993); *see also* *Interfaith Community Organization v. Honeywell Intern., Inc.*, 726 F.3d 403, 76 Env't. Rep. Cas. (BNA) 2092, 85 Fed. R. Serv. 3d 1564 (3d Cir. 2013), as amended, (July 11, 2013) and as amended, (July 22, 2013) (addressing a multi-million dollar fee award and holding that offers of judgment under Federal Rule of Civil Procedure 68 are applicable to RCRA citizen suits).

¹³The Supreme Court has held that § 7002 does not authorize a private cause of action to recover

RCRA's citizen suit provision.¹⁴

The citizen suit provision applies in states authorized to implement RCRA.¹⁵ In other words, a citizen suit can be brought based on the state law implementing RCRA.¹⁶ However, a plaintiff cannot assert a federal cause of action under state law in a RCRA-authorized state.¹⁷

It will remain to be seen how much Subtitle C citizen enforcement actually occurs. One significant difference between RCRA and the Clean Water Act program, where a great deal of citizen suit activity has occurred in recent years,¹⁸ is the degree of self-monitoring and reporting required. Unless EPA significantly increases the self-monitoring and reporting obligations under Parts 264 and 270, citizen suits will necessarily involve hands-on surveillance and proof, an element lacking in Clean Water Act enforcement due to the pervasive requirement of discharge monitoring reporting by water polluters.¹⁹ Section 7002 also provides for prohibitions on ocean dumping of solid and hazardous waste in Part 4005.

§ 14:132 RCRA enforcement—Criminal liability and enforcement

Sections 3008(d) and 3008(e) of RCRA contain the statute's criminal liability provisions. The first of these contains a list of six substantive criminal violations that are tailored to specific regulated conduct. Application of the § 3008(d) scienter requirement is continuing to evolve. In *United States v. Hoflin*,¹ the Ninth Circuit upheld a conviction for illegal disposal of hazardous waste, even in the absence of proof that the defendant knew he did not have the required RCRA permit. The court reasoned that because RCRA violators without permits pose a potentially greater threat to public health than those who attempt to comply with RCRA requirements, proof only of knowledge of the hazardous nature of the waste in ille-

prior costs of cleaning up waste that does not, at the time of suit, continue to pose an endangerment to health or the environment. *Meghrig v. KFC Western, Inc.*, 516 U.S. 479, 116 S. Ct. 1251, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 20820 (1996). For the purposes of § 7002, it does not matter whether the past cleanup costs are labeled as "damages" or "equitable restitution." *See also Furrer v. Brown*, 62 F.3d 1092 (8th Cir. 1995) (holding that RCRA's citizen suit provision does not contain a private right of action for response costs), cert. denied, 116 S. Ct. 1567 (1996); *Avondale Fed. Savings Bank v. Amoco Oil Co.*, 997 F. Supp. 1073 (N.D. Ill. 1998) (a party cannot recover remediation costs under the RCRA citizen suit provision), *aff'd*, 170 F.3d 692 (7th Cir. 1999).

¹⁴*El Paso Natural Gas Co. v. U.S.*, 750 F.3d 863, 78 Env't. Rep. Cas. (BNA) 1281 (D.C. Cir. 2014) (governmental agencies can bring citizen suit because definition of "person" includes governmental agencies).

¹⁵*See* § 14:47.

¹⁶*Lutz v. Chromatex, Inc.*, 725 F. Supp. 258, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20345 (M.D. Pa. 1989).

¹⁷*Williamsburgh Around the Block Ass'n v. Jorling*, 30 ERC (BNA) 1188 (N.D.N.Y. 1989).

¹⁸*See Babich & Hensen, Opportunities for Environmental Enforcement and Cost Recovery by Local Governments and Citizen Organizations*, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 10165 (Aug. 1988).

¹⁹Citizen suits have targeted both permitted facilities and generators. *See, e.g., Environmental Defense Fund, Inc. v. City of Chicago*, 727 F. Supp. 419, 30 Env't. Rep. Cas. (BNA) 1624, 20 Env'tl. L. Rep. 20375 (N.D. Ill. 1989); *Environmental Defense Fund, Inc. v. Wheelabrator Technologies Inc.*, 725 F. Supp. 758, 30 Env't. Rep. Cas. (BNA) 1609, 20 Env'tl. L. Rep. 20326 (S.D. N.Y. 1989). These were suits to determine whether municipal solid waste incinerator ash that exceeds EP toxicity limits defining a hazardous waste is within the scope of the § 3001(i) exclusion added by HSWA. *See City of Chicago v. Env'tl. Def. Fund*, 511 U.S. 328, 114 S. Ct. 1588, 128 L. Ed. 2d 302, 24 Env'tl. L. Rep. 20810 (1994), for a resolution of this issue.

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¹*United States v. Hoflin*, 880 F.2d 1033, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 21140 (9th Cir. 1989), cert. denied, 493 U.S. 1083 (1990).

gal disposal cases is consistent with congressional intent.² However, the Ninth Circuit subsequently refused to follow *Hoflin*. In *United States v. Speach*,³ the court held that a federal jury had improperly convicted a company president of knowingly transporting hazardous waste to an unpermitted facility even though the individual claimed that he did not know the facility lacked a permit. Unlike *Hoflin*, *Speach* stressed that knowledge is an essential element. Section 3008(e) is a “knowing endangerment” provision that, as applied via some scienter rules set forth in § 3008(f), imposes heavier penalties for the types of conduct it covers.

Criminal defendants have questioned federal jurisdiction to enforce RCRA violations when EPA has approved state hazardous waste programs. In California, defendants charged with the unauthorized treatment and storage of hazardous wastes moved to dismiss the indictment because EPA authorized the state to undertake its own hazardous waste program. They contended that as a result, the RCRA criminal penalty provisions could not apply and the Department of Justice’s enforcement authority effectively diminished. The District Court disagreed and held that this authority did not narrow the scope of federal enforcement under RCRA.⁴

§ 14:133 RCRA enforcement—Criminal liability and enforcement—Regulatory offenses

All of the RCRA regulatory offenses involved *knowing* conduct. The degree of proof required to satisfy the scienter requirement varies with the circumstances. Although the government must prove that the defendant “knew” each fact constituting an element of the offense, in many RCRA-regulated scenarios the requisite degree of knowledge may be imputed to individual defendants by virtue of their employment in such a closely regulated industry,¹ or by virtue of their managerial responsibilities within a corporation.²

One faces criminal responsibility³ for knowingly transporting or causing the transportation of regulated waste to a facility not authorized to treat, store, or dispose of it,⁴ if one knowingly treats, stores, or disposes of regulated waste without a permit or in “knowing violation of” any material condition of a permit or interim

²See also *United States v. Laughlin*, 10 F.3d 961, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20221 (2d Cir. 1993), cert. denied, 114 S. Ct. 1649 (1994); *United States v. Wagner*, 29 F.3d 264, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 21353 (7th Cir. 1994).

³*United States v. Speach*, 968 F.2d 795, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 21498 (9th Cir. 1992).

⁴*United States v. Flanagan*, 126 F. Supp. 2d 1284 (C.D. Cal. 2000).

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¹See *United States v. Johnson & Towers, Inc.*, 741 F.2d 662, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20634 (3d Cir. 1984) (holding that yard employees might be imputed with knowledge that corporate employer needed a RCRA permit to store and dispose of hazardous waste). *Accord* *United States v. Hayes Int’l Corp.*, 786 F.2d 1499, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20717 (11th Cir. 1986); see also *United States v. Greer*, 850 F.2d 1447, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 21387 (11th Cir. 1988) (reversing lower court judgment setting aside criminal conviction, finding sufficient evidence of knowing disposal of hazardous waste), reh’g denied, 860 F.2d 1092 (11th Cir. 1988) (en banc); *United States v. Kelly*, 167 F.3d 1176 (7th Cir. 1999) (affirming conviction of a company president because he knowingly allowed the transport of substances that he knew fit within the definition of hazardous waste).

²See *United States v. MacDonald & Watson Waste Oil Co.*, 933 F.2d 35, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 21449 (1st Cir. 1991) (holding that a jury can infer knowledge based on circumstantial knowledge). *But see* *United States v. White*, 766 F. Supp. 873, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 20050 (E.D. Wash. 1991) (holding that the government must show that a corporate officer has actual knowledge of the violations or aided and abetted the employees who committed the violations).

³The penalties for the following substantive violations are a maximum \$50,000 per day fine and imprisonment of not more than five years, or both for the first offense, with a doubling of the sanctions for the second offense. RCRA § 3008(d), 42 U.S.C.A. § 6928(d).

⁴RCRA § 3008(d)(1), 42 U.S.C.A. § 6928(d)(1). *United States v. Cunningham*, 194 F.3d 1186 (11th

status regulation or standard,⁵ or knowingly dumps any RCRA-regulated waste into the ocean without a permit under the Marine Protection Research and Sanctuaries Act.⁶

The statute also imposes criminal responsibility⁷ for knowing violations of the information and paper trail requirements. Thus, one is subject to criminal penalties for knowingly making false material statements or representations, or omitting material information in documents filed, maintained or used for the purpose of complying with EPA or state hazardous waste regulations,⁸ if one knowingly conceals, destroys, alters, or fails to file any required document,⁹ knowingly transports hazardous waste without a manifest,¹⁰ or knowingly exports hazardous waste to a foreign country in violation of the RCRA export restrictions.¹¹

§ 14:134 RCRA enforcement—Criminal liability and enforcement—Knowing endangerment

The knowing endangerment provision addresses the situation in which a transporter or TSD facility owner/operator commits a substantive § 3008(d) offense and “knows” at the time the offense is committed “that he thereby places another person in imminent danger of death or serious bodily injury.”¹ One “knows” an existing circumstance if “he is aware or believes that the circumstance exists,”² and “knows” that a given result will follow his conduct if “he is aware or believes that his conduct is substantially certain to cause danger of death or serious bodily injury.”³

Application of this statutory language to specific RCRA-related facts in the context of § 3008(e) prosecutions will be required to flesh out precisely what conduct will satisfy the rather complex scienter rules of § 3008(f). The statute provides, for example, that knowledge of facts may be imputed to an organization, but may not

Cir. 1999) (affirming a 56-month prison sentence for a company salesman who conspired to illegally dispose of hazardous substances, and who transported and disposed of hazardous substances), cert. denied, 531 U.S. 831 (2000).

⁵RCRA § 3008(d)(2)(A)-(C), 42 U.S.C.A. § 6928(d)(2)(A)-(C); *Southern Union Co. v. U.S.*, 132 S. Ct. 2344, 183 L. Ed. 2d 318, 74 Env’t. Rep. Cas. (BNA) 1609 (2012) (reversing and remanding \$38.1 million fine based on 762 days of violation of RCRA for unlawfully storing liquid mercury without a permit because Sixth Amendment precedent required jury to decide the duration of the violation for purposes of criminal fines).

⁶Such conduct would also be a violation of the Marine Protection, Research, and Sanctuaries Act. See generally Ch. 13.

⁷The maximum penalties for the following violations are a fine of \$50,000 per day plus imprisonment of not more than two years, or both, for the first offense, with a doubling of the sanctions for the second offense.

⁸RCRA § 3008(d)(3), 42 U.S.C.A. § 6928(d)(3).

⁹RCRA § 3008(d)(4), 42 U.S.C.A. § 6928(d)(4).

¹⁰RCRA § 3008(d)(5), 42 U.S.C.A. § 6928(d)(5).

¹¹RCRA § 3008(d)(6), 42 U.S.C.A. § 6928(d)(6).

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¹*United States v. Elias*, No. 98-0070-E-BLW, 2000 WL 1099977 (D. Idaho Apr. 26, 2000) (based on the penalty provision of § 3008(d), ordering the owner of a fertilizer company to serve seventeen years in prison and pay nearly \$6 million in restitution for ordering an employee to clean out a storage tank contaminated with cyanide without proper safety equipment), *aff’d in part, vacated in part*, 269 F.3d 1003 (9th Cir. 2001) (finding that the charges against the defendant did not support the order for restitution), cert. denied, 537 U.S. 812, (2002).

²RCRA § 3008(f)(1)(B), 42 U.S.C.A. § 6928(f)(1)(B).

³RCRA § 3008(f)(1)(C), 42 U.S.C.A. § 6928(f)(1)(C).

be imputed to an individual,⁴ although “circumstantial evidence . . . including evidence that the defendant took affirmative steps to shield himself from relevant information” may be relied upon.⁵ Although the statutory language appears to preclude a *Johnson & Towers*-type analysis⁶ from being employed in a knowing endangerment prosecution, it is far from clear just what type of circumstances will serve to lighten the prosecution’s burden. The Environmental Crimes unit of the Justice Department commenced its first knowing endangerment prosecution in 1985; the first conviction of a company under this provision was upheld by the Tenth Circuit in *United States v. Protex Industries*.⁷

§ 14:135 Liability for abatement of imminent hazard situations—Statutory provisions

Section 7003 of RCRA and § 106(a) of CERCLA, which contain similar, though not identical, language, address direct private sector responsibility for abatement of imminent hazard situations. Section 7003 provides for lawsuits and administrative abatement orders¹ against RCRA-regulated entities² to restrain activities or abate conditions where evidence in EPA’s possession indicates that the past or present handling, storage, treatment, or disposal of “any solid or hazardous waste may present an imminent and substantial endangerment to health or the environment.”³ Section 106(a) authorizes the government to sue to abate an “imminent and substantial endangerment to the public health or welfare or the environment” caused by “an actual or threatened release of a hazardous substance from a facility.”

Section 106(a) is in several respects the broader of the two provisions.⁴ Unlike § 7003, it is not limited to a specific class of defendants, and it applies to a broader class of substances.⁵ Although § 7003 might be argued to apply to a potentially broader class of hazards since it is not limited to “release” situations, the case law that has developed around the government’s burden of proof under § 7003 has all but eliminated any such distinction.⁶ Both statutes address situations in which actual or threatened spills or off-site migration of pollutants or the physical consequences of on-site conflagration may adversely affect humans or the natural

⁴RCRA § 3008(f)(2), 42 U.S.C.A. § 6928(f)(2).

⁵RCRA § 3008(f)(2), 42 U.S.C.A. § 6928(f)(2) (Proviso).

⁶*See* U.S. v. Johnson & Towers, Inc., 741 F.2d 662, 21 Env’t. Rep. Cas. (BNA) 1433, 14 Env’tl. L. Rep. 20634 (3d Cir. 1984) (holding that yard employees might be imputed with knowledge that corporate employer needed a RCRA permit to store and dispose of hazardous waste).

⁷*United States v. Protex Indus.*, 874 F.2d 740, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 21061 (10th Cir. 1989) (provision is not unconstitutionally vague).

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¹RCRA § 7002, 42 U.S.C.A. § 6972. The provision for abatement orders was added in 1980. Pub. L. No. 96-482, § 25, 94 Stat. 2348 (Oct. 21, 1980).

²An amendment to the statute in 1984 authorized § 7003 actions against past or present generators, transporters, or site owner/operators who contributed to the handling of hazardous waste at a problem site. Pub. L. No. 98-616, Title IV, §§ 402, 403(a), 404 98 Stat. 3271, 3273 (Nov. 8, 1984).

³RCRA § 7003(a), 42 U.S.C.A. § 6973(a).

⁴Since the government regularly pleads both statutes, their differences are usually of no practical consequence. Nevertheless, since Congress failed in the reauthorization statute, Pub. L. No. 99-499, 100 Stat. 1613 (1986), to amend CERCLA to provide for direct citizen suits in CERCLA § 106, 42 U.S.C.A. § 9606 (it limited citizens to suing to enforce final orders), the differences are important to citizens, who must act, if at all, under RCRA § 7003, 42 U.S.C.A. § 6973.

⁵The CERCLA definition of “hazardous substance” encompasses a broader universe of substances than the RCRA definitions of “hazardous waste” and “solid waste.” *Compare* 42 U.S.C.A. § 9601(14) (CERCLA) *with* 42 U.S.C.A. § 6903(5), (27) (RCRA).

⁶*See, e.g.,* *United States v. Waste Indus., Inc.*, 734 F.2d 159, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20461 (4th Cir. 1984).

environment. At least since the 1984 amendment to § 7003, both statutes apply to either presently active areas or inactive sites.⁷

In the 1990 NCP revisions, EPA reorganized the provisions applicable to § 106 response actions. Under 40 C.F.R. § 300.700(d)(3), EPA requires preauthorization for removal actions, § 104(b) activities, or remedial actions at NPL sites. Preauthorization is conditioned upon a demonstration of technical and other capabilities to respond safely and effectively to the release, and a showing that the action will be “consistent with the NCP.”⁸ Further, 40 C.F.R. § 300.415(j) of the revised regulations provides that § 106 removal actions must attain ARARs “to the extent practicable considering the exigencies of the situation.”

Although the 1984 amendments to § 7002 of RCRA made at least limited citizen enforcement of § 7003 available, CERCLA was adopted without a general citizen suit provision, and § 106 has been held to be unavailable even to state governments.⁹ Section 310, added to CERCLA by Pub. L. No. 99-499, however, provides for limited citizen enforcement. Under the new citizen suit provision, though citizens are still not permitted to bring direct § 106 actions, they may sue to enforce § 106(a) orders that have become final.

States are, by virtue of § 121(f)(2),¹⁰ given the right to participate in EPA’s § 106 settlement negotiations, and to “nonconcur” in the federal settlement. A state that nonconcurs is permitted to intervene in the federal enforcement suit to attempt to convince the judge not to enter the consent decree.¹¹

§ 14:136 Liability for abatement of imminent hazard situations—Standard of proof and the nature of liability and remedy

RCRA § 7003 and CERCLA § 106(a) both impose strict liability once a finding is made that an imminent and substantial endangerment is present.¹ The government has continuously urged joint and several liability on the courts, with mixed results, primarily due to the fact that the imminent hazard statutes provide only for injunctive relief; those courts that have concluded that joint and several liability is inap-

⁷By the time Congress amended RCRA § 7003(a), 42 U.S.C.A. § 6973(a) by Pub. L. No. 96-616, 98 Stat. 3221, the government had convinced at least one court of appeals that § 7003 applied to completed past conduct. *See United States v. Waste Indus. Inc.*, 734 F.2d 159, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20461 (1984), rev’g, 556 F. Supp. 1301, 13 Env’tl. L. Rep. (Env’tl. L. Inst.) 20286 (E.D.N.C. 1982). *See generally United States v. Ottati & Goss, Inc.*, 630 F. Supp. 1361, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20763 (D.N.H. 1985) (section 7003 may be used for events which took place at some time in the past but which continue to present a threat to the public health or environment). *But see United States v. Conservation Chem. Co.*, 619 F. Supp. 162, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20193 (W.D. Mo. 1985) (RCRA § 7003); *United States v. Ne. Pharm. Chem. Corp.*, 579 F. Supp. 823, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20212 (W.D. Mo. 1984), aff’d in part, rev’d in part, 810 F.2d 726 (8th Cir. 1986) (CERCLA § 106).

⁸*See* 40 C.F.R. § 300.700(d)(4). Pursuant to 40 C.F.R. § 300.700(c)(3)(ii), however, any response action carried out in compliance with the terms of a § 106 order or a § 122 consent order will be considered consistent with the NCP.

⁹*New York v. Shore Realty*, 759 F.2d 1032, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20358 (2d Cir. 1985).

¹⁰Also added by Pub. L. No. 99-499, 100 Stat. 1613 (1986). The statutory language clearly limits its applicability to judicial enforcement under § 106(a). *See* 40 C.F.R. § 300.515(f)(2).

¹¹This procedure is not available for states who are not satisfied with CERCLA § 106(a), 42 U.S.C.A. § 9606, administrative orders.

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¹*See Waste Inc. Cost Recovery Group v. Allis Chalmers Corp.*, 51 F. Supp. 2d 936 (N.D. Ind. 1999) (holding that a group of plaintiffs may not seek contribution under RCRA if they are required to conduct a cleanup pursuant to a CERCLA § 106 order); *United States v. Wade*, 546 F. Supp. 785, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 21051 (E.D. Pa. 1982) (§ 7003); *United States v. Ottati & Goss, Inc.*, 630 F. Supp. 1361, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20763 (D.N.H. 1985) (§ 106).

propriate have viewed the concept as one limited to actions for money.²

The nature of the showing required to support a court's finding that an imminent and substantial endangerment exists was first addressed in an early § 7003 decision, *United States v. Vertac Chemical Corp.*,³ in which the court relied heavily upon case law developed under § 504 of the Clean Water Act, which was a model for § 7003.⁴ In *Vertac*, the court stated that the elements required to be considered are the degree and nature of the toxicity of the substances involved, and the likelihood of human or environmental exposure in the event the condition is not remedied.⁵ The § 7003 case law has regularly been applied to § 106.⁶

With EPA's development of the CERCLA § 104 program, questions arose as to the proper relationship between RCRA § 7003/CERCLA § 106 and CERCLA § 104. The government initially sought to use the imminent hazard authority as part of its remedial strategy to secure direct third party clean-up to a level beyond that to which § 104 would permit.⁷ By 1985, EPA's staff had developed a sufficient aversion to imminent hazard litigation that referrals of new § 7003/§ 106 cases had slowed to a trickle.

These statutes afford prohibitive or mandatory injunctive relief from the conditions giving rise to the cause of action. Although there is scant case law on the subject⁸ the language of both statutes appears to limit the relief to elimination of the conditions creating the imminent and substantial endangerment. Although in some cases such remedial action may approach a § 104 level of clean-up, it will not in all cases do so. However, the provisions of the Superfund reauthorization require the remedies selected under § 106 and those under § 104 to achieve the same standard.⁹

§ 14:137 Liability for abatement of imminent hazard situations— Administrative § 106 orders

²*Compare* *United States v. Ottati & Goss, Inc.*, 630 F. Supp. 1361, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20763 (D.N.H. 1985) *with* *United States v. Stringfellow*, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20385 (C.D. Cal. 1984). For a detailed discussion of this issue, see Stever, *Law of Chemical Regulation and Hazardous Waste*.

³*United States v. Vertac Chem. Corp.*, 489 F. Supp. 870, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20709 (E.D. Ark. 1980).

⁴The leading § 504 decision is *Reserve Mining Co. v. EPA*, 514 F.2d 492, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20596 (8th Cir. 1975) (en banc), cert. denied, 426 U.S. 941 (1976), in which the Eighth Circuit construed the term "endangerment" to include a potential for harm less than a certainty.

⁵More recently, the court in *B.F. Goodrich Co. v. Murtha*, 697 F. Supp. 89, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20357 (D. Conn. 1988) equated "endangerment" with "potential harm." Though risk must be imminent, the harm need not be realized for years. See *Jones & McSarrow*, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) at 10437.

⁶See, e.g., *United States v. Ne. Pharm. Chem. Corp.*, 579 F. Supp. 823, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20212 (W.D. Mo. 1984), *aff'd in part, rev'd in part*, 810 F.2d 726 (8th Cir. 1986).

⁷See, e.g., *United States v. Reilly Tar & Chem. Co.*, 546 F. Supp. 1100, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20954 (D. Minn. 1982); *cf.* *United States v. Ne. Pharm. Chem. Corp.*, 579 F. Supp. 823, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20212 (W.D. Mo. 1984), *aff'd in part, rev'd in part*, 810 F.2d 726 (8th Cir. 1986).

⁸*United States v. Stringfellow*, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20385 (C.D. Cal. 1984) contains a discussion of the degree of remedy.

⁹CERCLA § 121, 42 U.S.C.A. § 9621. The remedy must be a "permanent" remedy and provide that any residual pollution at the site meet "applicable or relevant and appropriate" environmental standards or criteria. For EPA's position on the role of § 106(a) in the Superfund cleanup process, see Office of Enforcement and Compliance Monitoring, *Guidance on CERCLA Section 106 Judicial Actions* (Feb. 24, 1989).

Section 106 authorizes the government¹ to issue administrative orders “as may be necessary to protect public health and welfare and the environment.” The scope of this authority has not been delimited. EPA has not generally sought to use the administrative § 106 order as a vehicle for securing site remediation. It has more frequently employed the authority to force access to a suspect site, or to secure immediate protective action.

The few courts that have considered the issue have held § 106 orders not to be subject to judicial review in advance of EPA’s seeking to enforce the order in court.² Whether EPA must provide opportunity for a hearing prior to issuance of a § 106 order is another significant issue that has spawned litigation.³ The argument for a prior hearing is prompted because CERCLA imposes potentially draconian penalties on recipients who fail or refuse to comply with a § 106 order.⁴ The developing majority view seems to be that, though a hearing is not required for due process, a defendant may interpose a good faith defense and challenge any such order in a subsequent judicial enforcement action predicated on it.⁵

§ 14:138 Liability for abatement of imminent hazard situations—Public and state participation

Section 106 contains no provision for public notice or any public participation in the litigation or settlement of actions brought under it. Section 117, added by the SARA in 1986, changed this, and requires EPA to provide notice and opportunity for informal public participation in connection with its selection of remedial action under § 106, as well as under § 104. EPA has implemented these requirements in

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¹CERCLA § 106, 42 U.S.C.A. § 9606. Authority is vested in the President, who delegated the authority to EPA and other agencies. *See* Exec. Order No. 13016, 61 Fed. Reg. 45871 (Aug. 28, 1996). Under a Memorandum of Understanding, federal resource managers, empowered under Executive Order 13016, may not use their authority to compel the performance of “natural resource damage assessment or restoration activities, if those activities are outside the definition of response action.” *See* 118 Daily Env’t Rep. (BNA) A-10 (June 19, 1998) (reporting on the Summary of Changes to Final Memorandum on Executive Order on CERCLA Cleanup Orders by Federal Agencies, 118 Daily Env’t Rep. (BNA) E-1 (June 19, 1998)).

²*See* *United States v. Reilly Tar & Chem. Corp.*, 606 F. Supp. 412 n.2, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20348 n.2 (D. Minn. 1985); *Wagner Elec. Corp. v. Thomas*, 612 F. Supp. 736, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20977 (D. Kan. 1985); *Solid State Circuits, Inc. v. EPA*, 23 Env 1758 (W.D. Mo. 1985).

³Since an administrative order under § 106 is not self-executing and the government would have to pursue judicial action to implement the order if the PRP does not comply, the administrative order does not constitute unconstitutional deprivation of property. *Gen. Elec. Co. v. Johnson*, 362 F. Supp. 2d 327 (D.D.C. 2005), *aff’d*, 610 F.3d 110 (D.C. Cir. 2010), *cert. denied*, 131 S. Ct. 2959 (2011). At least one circuit court of appeals has held that an administrative order is not enforceable via a permanent injunction, although preliminary injunctive relief might be appropriate. *U.S. v. P.H. Glatfelter Co.*, 768 F.3d 662, 79 Env’t. Rep. Cas. (BNA) 1177 (7th Cir. 2014) (vacating permanent injunction).

⁴CERCLA § 106(b), 42 U.S.C.A. § 9606(b), provides a \$25,000 per day penalty for a willful violation of an order, but EPA periodically adjusts this and other penalty amounts to account for inflation in its Civil Monetary Penalty Inflation Adjustment Rules. *See, e.g.*, 61 Fed. Reg. 69360, 69362 (Dec. 31, 1996) (increasing the maximum penalty amount allowed under CERCLA § 106(b) to \$27,500, effective January 30, 1997); 78 Fed. Reg. 66643 (Nov. 6, 2013) (adjusting penalties under environmental laws). The maximum for a CERCLA § 106(b) violation has been adjusted to \$37,500. 40 C.F.R. § 19.4 (penalty adjustment and table). 61 Fed. Reg. 69360, 69362 (Dec. 31, 1996). CERCLA § 107(c)(3), 42 U.S.C.A. § 9607(c)(3), provides punitive damages of up to three times the remedial costs if one fails “without sufficient cause” to take remedial action ordered under § 106(a).

⁵*See* *United States v. Reilly Tar & Chem. Corp.*, 606 F. Supp. 412, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20348 (D. Minn. 1985); *Wagner Elec. Corp. v. Thomas*, 612 F. Supp. 736, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20977 (D. Kan. 1985); *Solid State Circuits, Inc. v. EPA*, 23 Env 1758 (W.D. Mo. 1985). *But see* *Indus. Park Dev. Co. v. EPA*, 604 F. Supp. 1136, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20573 (E.D. Pa. 1985).

Subpart I of the 1990 NCP.¹ As discussed above, states are provided with additional rights with respect to settlement negotiations.

In the 1984 amendments to RCRA, there is a requirement that public notice be given by EPA “upon receipt of information that there is hazardous waste at any site which has presented an imminent and substantial endangerment.”² A second provision was added requiring EPA to provide opportunity for a public meeting and public comment on any proposed settlement of a § 7003 action.³

A final § 106-related provision, whose lineage is traced to the 1986 amendments, is § 106(b)(2). This section allows qualifying persons who have completed remedial action pursuant to a § 106(a) order to seek reimbursement of the expenditures, plus statutory interest, from the Superfund. To qualify, one must either not be a § 107 PRP, or have been required to implement an ROD that has been found to have been arbitrary or capricious, or otherwise unlawful.⁴

States must be provided “substantial and meaningful involvement” in the “initiation, development and selection of remedial actions” undertaken within their borders.⁵ States must be allowed to participate in “decisions whether to perform a preliminary assessment and site inspection” and allocated “responsibility for hazard ranking system scoring.”⁶ They must be provided an opportunity for concurrence in the “deletion” of sites from the NPL, and invited to participate in the “long-term planning process for all remedial sites” within their borders.⁷

§ 14:139 Liability to the government or private parties for response expenditures and to the Government for natural resource damages—The CERCLA Section 107 scheme in general

Section 107(a) of CERCLA imposes liability without proof of fault (*i.e.*, strict liability)¹ upon the covered classes of entities (who are termed “responsible parties”) for: (1) federal or state government response costs undertaken pursuant to § 104 of CERCLA, provided such costs are “not inconsistent with” the NCP adopted pursuant to § 105; (2) any “other necessary costs of response incurred by any other person

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¹40 C.F.R. §§ 300.800 to 300.825.

²RCRA § 7003(c), 42 U.S.C.A. § 6973(c). The use of the words “is” and “has presented” are curiously different from the “may present” language in § 7003(a), and could form the basis of a restrictive interpretation of the public notice requirement by EPA.

³RCRA § 7003(d), 42 U.S.C.A. § 6973(d).

⁴CERCLA § 106(b)(2), 42 U.S.C.A. § 9606(b)(2). The latter type of claimant may recover only excessive costs. If the Fund denies payment, the claimant has a cause of action in federal district court to seek payment. *See* 118 Daily Env’t Rep. (BNA), June 19, 1997, at A-3 (reporting the first CERCLA § 106(b) reimbursement ever in a settlement approved by the EPA Environmental Appeals Board in *In re Env’t. Waste Control, Inc.*, CERCLA 106(b) Petition No. 94-21 (Env’tl. App. Bd. June 16, 1997)).

⁵CERCLA § 121(f), 42 U.S.C.A. § 9621(f); *see* 40 C.F.R. §§ 300.500, 300.515.

⁶CERCLA § 121(f)(1)(A)-(B), 42 U.S.C.A. § 9621(f)(1)(A)-(B).

⁷CERCLA § 121(f)(1)(A)-(B), 42 U.S.C.A. § 9621(f)(1)(A)-(B); *see* 40 C.F.R. §§ 300.425(e), 300.515(c)(3), requiring EPA to consult with the state on proposed deletions prior to developing the notice of intent to delete and to provide the state thirty working days to review and concur in the notice. Releases may not be deleted until the state has concurred. 40 C.F.R. §§ 300.425(e), 300.515(c)(3); *see also* 40 C.F.R. § 300.515(e), (h) (long-term planning during annual consultations).

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¹CERCLA § 107(a); 42 U.S.C.A. § 9607(a). *New York v. Shore Realty Corp.*, 759 F.2d 1032, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20358 (2d Cir. 1985); *J.V. Peters & Co. v. Adm’r*, 767 F.2d 263, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20646 (6th Cir. 1985).

consistent with” the NCP;² and (3) damages for injury to, destruction of, or loss of natural resources, including the costs of assessing the loss,³ and, subsequent to 1986, the costs of health assessments performed at the site by the ATSDR.⁴

Responsible parties are those listed in CERCLA § 107(a), including present or past⁵ owners and operators of vessels⁶ and facilities,⁷ as defined by CERCLA,⁸ most persons who generated hazardous substances found at a facility “containing such

²The limitations that government recovery be for actions “not inconsistent with,” but that private recovery be for costs “consistent with” the NCP are intentionally different, the heavier burden of proof resting on the shoulders of private claimants, who must plead and prove that their response costs were not only necessary but affirmatively demonstrate that they were consistent with the NCP. *See* *Versatile Metals, Inc. v. Union Corp.*, 693 F. Supp. 1563, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20473 (E.D. Pa. 1988); *United States v. Ne. Pharm. Chem. Corp.*, 579 F. Supp. 823, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20212 (W.D. Mo. 1984), *aff'd in part, rev'd in part*, 810 F.2d 726 (8th Cir. 1986). In government response actions, the burden of showing inconsistency with the NCP lies with the defendants. *See* *United States v. Ward*, 618 F. Supp. 884, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20127 (E.D.N.C. 1985). A party must show that the expense was “arbitrary and capricious.” *United States v. Northernair Plating Co.*, 685 F. Supp. 1410, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21338 (W.D. Mich. 1988).

One federal district court in New York has allowed a property owner seeking damages under a nuisance theory in addition to CERCLA response costs to show proof of stigma as part of its proof of damages for diminution in property value remaining after remediation. Noting that the release or threat of release of hazardous waste into the environment is a public nuisance under New York law, the court found that the response costs incurred by the plaintiff constituted the “special harm” that was necessary to confer standing to bring a public nuisance action and the damages available in such an action would not be limited to those response costs if the plaintiff's property could not be returned to its precontamination value. *Nashua Corp. v. Norton Co.*, No. 90-CV-1351, 1997 WL 204904 (N.D.N.Y. Apr. 15, 1997); *see also* *Scribner v. Summers*, 138 F.3d 471, 46 Env't. Rep. Cas. (BNA) 1573, 28 Env'tl. L. Rep. 21072 (2d Cir. 1998) (remanding case related to whether damages were recoverable for any stigma remaining after cleanup of the property).

³CERCLA § 107(a)(4)(A)-(C), 42 U.S.C.A. § 9607(a)(4)(A)-(C). The regulations implementing these subsections were struck down and remanded in *Ohio v. Dep't of the Interior*, 880 F.2d 432, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 21099 (D.C. Cir. 1989); *see* 54 Fed. Reg. 39016 (Sept. 22, 1989). NOAA has also initiated proceedings under § 107(F). *See* *United States v. Montrose Chem. Corp. of Cal.*, 883 F. Supp. 1396, 25 Env'tl. L. Rep. 20809 (C.D. Cal. 1995), *rev'd*, 104 F.3d 1507, 27 Env'tl. L. Rep. 20508, 144 A.L.R. Fed. 669 (9th Cir. 1997); *United States v. City of Seattle and the Mun. of Metro. Seattle*, No. 90-395 (W.D. Wash. filed Mar. 19, 1990).

In March 1994, the Department of the Interior (DOI) published a final rule amending the regulations for assessing natural resource damages to comply with the court order in *Ohio v. Dep't of the Interior* at 59 Fed. Reg. 14262 (Mar. 25, 1994). This rule establishes a procedure for calculating natural resource damages based on the costs of restoring, rehabilitating, replacing, and/or acquiring the equivalent of the injured resources and the services those resources provide, and allows for the assessment of all use values of the resources. DOI plans to promulgate a rule regarding the calculation of nonuse values. The United States Court of Appeals for the D.C. Circuit upheld the March 1994 DOI final rule against a series of procedural and substantive challenges by industry and the state of Montana, with the exception of provisions interpreting CERCLA's statute of limitations and using “resources and services” as the measure of damages. *Kennecott Utah Copper Corp. v. U.S. Dep't of the Interior*, 88 F.3d 1191, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 21489 (D.C. Cir. 1996).

⁴CERCLA § 107(a)(4)(D), 42 U.S.C.A. § 9607(a)(4)(D).

⁵Liability of past owner/operators may be limited to those during whose tenure hazardous substances were placed on the site. *See* *ABB Indus. Sys., Inc. v. Prime Tech., Inc.*, 120 F.3d 351 (2d Cir. 1997) (prior owners and operators are not liable under CERCLA for “mere passive migration”); *United States v. CDMG Realty Co.*, 96 F.3d 706, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 21589 (3d Cir. 1996) (refusing to hold a past owner liable for the “passive” migration of contaminants that occurred during its ownership). Current owners are also not liable under CERCLA for the passive migration of hazardous substances that migrated to their property from an adjacent site. *Niagara Mohawk Power Corp. v. Jones Chem., Inc.*, 315 F.3d 171 (2d Cir. 2003).

⁶Vessel-related CERCLA problems are almost exclusively spills, and as to vessels CERCLA functions virtually identically to § 311 of the Clean Water Act. 33 U.S.C.A. § 1321. In 1986, the statutory definition of “vessel” was amended to exclude hazardous waste incinerator vessels, which are thereafter treated as facilities.

⁷Current operators may be strictly liable although they have not engaged in pollution-causing

hazardous substances,”⁹ including individual corporate officers,¹⁰ shareholders, lessors, or employees involved in the handling of hazardous substances at a facility,¹¹

activities. *See, e.g.,* Litgo New Jersey Inc. v. Commissioner New Jersey Dept. of Environmental Protection, 725 F.3d 369, 76 Env’t. Rep. Cas. (BNA) 2057 (3d Cir. 2013) (involvement in remediation efforts, including conducting tests and hiring contractors to perform remediation, supported that appellants were liable as current operators).

⁸CERCLA § 107(a)(1), 42 U.S.C.A. § 107(a)(1). The terms are defined in CERCLA § 101, 42 U.S.C.A. § 9601. In practical terms, most PRPs falling within this category are owners or operators of hazardous waste disposal, storage, or treatment facilities. A facility has been held to include any place where hazardous substances have “come to be located.” *New York v. Gen. Elec. Co.*, 592 F. Supp. 291, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20719 (N.D.N.Y. 1984) (drag strip).

The concept of “owner” embraces innocent owner/lessors whose lessees caused the conditions, sublessors, and even innocent purchasers of already contaminated property of a debtor’s estate. *See, e.g.,* *New York v. Shore Realty Corp.*, 759 F.2d 1032, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20358 (2d Cir. 1985); *United States v. S.C. Recycling & Disposal, Inc.*, 653 F. Supp. 984, 14 Env’tl. L. Rep. 20272, 14 Env’tl. L. Rep. 20895, 17 Env’tl. L. Rep. 20843, 17 Env’tl. L. Rep. 20845, 17 Env’tl. L. Rep. 20847 (D.S.C. 1984), judgment aff’d in part, vacated in part, *United States v. Monsanto Co.*, 858 F.2d 160, 19 Env’tl. L. Rep. 20085 (4th Cir. 1988); *United States v. Mirabile*, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20992 (buyers), 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20994 (creditors) (E.D. Pa. 1985); *In re T.P. Long Chem. Inc.*, 45 Bankr. 278, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20635 (Bankr. N.D. Ohio 1985). One court has held that inheritors of contaminated property are not liable for Superfund cleanup costs. *Snediker Devs. Ltd. P’ship v. Evans*, 773 F. Supp. 984 (E.D. Mich. 1991). *But see* *ASARCO LLC v. Goodwin*, 756 F.3d 191, 78 Env’t. Rep. Cas. (BNA) 2085 (2d Cir. 2014), cert. denied, 135 S. Ct. 715 (2014) (state law controls whether beneficiaries of PRP’s estate could be liable for CERCLA contribution). Congress amended § 101(20) in 1986 to exclude municipal and state entities who acquire contaminated property under certain circumstances.

⁹CERCLA § 107(a)(3), 42 U.S.C.A. § 9607(a)(3). A three-part test, enunciated in *United States v. S.C. Recycling & Disposal, Inc.*, 653 F. Supp. 984, 20 Env’t. Rep. Cas. (BNA) 1753, 21 Env’t. Rep. Cas. (BNA) 1577, 24 Env’t. Rep. Cas. (BNA) 2015, 14 Env’tl. L. Rep. 20272, 14 Env’tl. L. Rep. 20895, 17 Env’tl. L. Rep. 20843, 17 Env’tl. L. Rep. 20845, 17 Env’tl. L. Rep. 20847 (D.S.C. 1984), judgment aff’d in part, vacated in part, *United States v. Monsanto Co.*, 858 F.2d 160, 28 Env’t. Rep. Cas. (BNA) 1177, 19 Env’tl. L. Rep. 20085 (4th Cir. 1988), has been fairly consistently applied to generators. What must be shown is that: (1) the generator’s hazardous substances were, at some point in the past, shipped to a facility; (2) the generator’s hazardous substances or ones like those of the generator are present at the site; and (3) that there was a release or threatened release of *any* hazardous substance at the site that caused a response. *See also* *Dana Corp. v. Am. Standard, Inc.*, 866 F. Supp. 1481, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 21051 (N.D. Ind. 1994) (allowing plaintiff to use circumstantial evidence to prove that defendant produced a continuous and predictable waste stream that included hazardous waste found at the site, and that a significant portion of the waste stream was disposed of at the site); *United States v. Alcan Aluminum Corp.*, 990 F.2d 711 (2d Cir. 1993), aff’d, 315 F.3d 179 (2d Cir. 2003), cert. denied, 540 U.S. 1103, 124 S. Ct. 1039 (2004); *United States v. Monsanto Co.*, 858 F.2d 160, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20085 (4th Cir. 1988), cert. denied, 490 U.S. 1106 (1989).

It is not a defense that the generator sold his substances to a third party who disposed of them. *United States v. Ward*, 618 F. Supp. 884, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20127 (E.D.N.C. 1985). *But see* *United States v. Farber*, No. 86–3736, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20854 (D.N.J. Mar. 16, 1988) (mere sale of hazardous chemicals does not expose seller to liability; issue is whether seller arranged for their treatment or disposal). It is also not a defense that the generator shipped the waste to another location than the one where they ended up, or that they were transported from their original disposal site to the one at issue. *See* *United States v. Ward*, 618 F. Supp. 884, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20127 (E.D.N.C. 1985); *Missouri v. Indep. Petrochem. Corp.*, 610 F. Supp. 4, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20161 (E.D. Mo. 1985); *see also* *Nurad, Inc. v. William E. Hooper & Sons Co.*, 966 F.2d 837 (4th Cir. 1992) (holding two former owners liable even though they did not actively dispose of the wastes, on the basis that liability attaches for ownership at a time when hazardous wastes are passively migrating). Finally, the fact that the generator sent a *de minimis* amount of a substance does not relieve him from liability. *See* *United States v. Conservation Chem. Co.*, 619 F. Supp. 162, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20193 (W.D. Mo. 1985).

¹⁰*See* *Kelley v. ARCO Indus. Corp.*, 723 F. Supp. 1214, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 20264 (W.D. Mich. 1989).

¹¹*See* *Weyerhaeuser Corp. v. Koppers Co.*, 771 F. Supp. 1420 (D. Md. 1991) (holding both the lessee, who treated wood, and the property owner, who knew and acquiesced, liable for costs of cleaning contamination caused by chemicals spilled during treatment operations); *see also* *New York v. Shore*

and transporters who convey hazardous substances to sites chosen by them rather than by the generators whose substances they are carting.¹² A secured creditor may also be liable under CERCLA if its involvement with the management of the facility is sufficiently broad to support the inference that it could affect hazardous waste disposal decisions.¹³

Following the 1986 amendments to CERCLA, the Supreme Court held in *Pennsylvania v. Union Gas Co.*¹⁴ that states may be held liable for cleanup costs “along with everyone else.” However, the Supreme Court overturned this ruling in *Seminole Tribe of Florida v. Florida*,¹⁵ holding instead that the Eleventh Amendment prevents Congress from authorizing private parties to sue nonconsenting states in federal court. In the first federal appeals court ruling on the liability of local governments for the landfill disposal of household waste, the United States Court of Appeals for the Second Circuit in *B.F. Goodrich Co. v. Connecticut Municipal Gov’t Agency*,¹⁶ held that there is no automatic exemption from CERCLA liability for municipal solid waste. This means that if household trash transported to landfills or other contaminated sites can be shown to have hazardous constituents, local governments—and therefore local taxpayers—must share cleanup costs with manufacturers, industry, and other generators of hazardous waste.

Notwithstanding the strict liability scheme, courts have formulated different standards for a causation element under CERCLA § 107(a). Although CERCLA is generally silent regarding “causation,” CERCLA § 107(a)(4) is somewhat ambiguous in imposing liability for a release or threatened release “which causes the incurrence of response costs.”¹⁷ Therefore, liability in certain situations will depend upon whether the expenditure of response costs was caused by the release from the facility for which the defendant is a responsible person. Courts have employed various standards for this causation element, apparently depending on the factual circumstances in the given case. Some have applied a burden-shifting approach that places the burden on the defendant to disprove causation after the plaintiff has established a *prima facie* case.¹⁸ Others have required the plaintiff to prove that the defendant’s contamination contributed to or was a “substantial factor” in the plaintiff’s incur-

Realty Corp., 759 F.2d 1032, 15 Env’t. L. Rep. (Env’t. L. Inst.) 20358 (2d Cir. 1985); *Vermont v. Staco, Inc.*, 684 F. Supp. 822, 18 Env’t. L. Rep. (Env’t. L. Inst.) 20589 (1988), vacated in part on other grounds, No. Civ. 86-190, 1989 WL 225428 (D. Vt. Apr. 20, 1989); *United States v. Conservation Chem. Co.*, 619 F. Supp. 162, 16 Env’t. L. Rep. (Env’t. L. Inst.) 20193 (W.D. Mo. 1985); *United States v. Ward*, 618 F. Supp. 884, 16 Env’t. L. Rep. (Env’t. L. Inst.) 20127 (E.D.N.C. 1985); *United States v. Mottolo*, 605 F. Supp. 898, 15 Env’t. L. Rep. (Env’t. L. Inst.) 20444 (D.N.H. 1985).

¹²CERCLA § 107(a)(4), 42 U.S.C.A. § 9607(a)(4).

¹³*United States v. Fleet Factors Corp.*, 901 F.2d 1550, 20 Env’t. L. Rep. (Env’t. L. Inst.) 20832 (11th Cir. 1990). For further discussion, see § 14:113.

¹⁴*Pennsylvania v. Union Gas Co.*, 491 U.S. 1, 19 Env’t. L. Rep. (Env’t. L. Inst.) 20974 (1989).

¹⁵*Seminole Tribe of Fla. v. Florida*, 517 U.S. 44, 116 S. Ct. 1114 (1996).

¹⁶*B.F. Goodrich Co. v. Conn. Mun. Gov’t Agency*, 958 F.2d 1192, 22 Env’t. L. Rep. (Env’t. L. Inst.) 20683 (2d Cir. 1992).

¹⁷CERCLA § 107(a)(4), 42 U.S.C. § 9607(a)(4). This issue has arisen in situations where one responsible party seeks contribution or recovery of response costs from the owner or operator of an adjacent site from which pollutants could have migrated. *See, e.g., Asarco LLC v. Cemex, Inc.*, 21 F. Supp. 3d 784 (W.D. Tex. 2014) (assuming that liability arises only when a release causes the incurrence of response costs and holding that a plaintiff must demonstrate that a similar contaminant is present at both sites and has a plausible migration pathway, which shifts the burden to defendant to prove it was not the source of contamination); *see also U.S. v. P.H. Glatfelter Co.*, 768 F.3d 662, 79 Env’t. Rep. Cas. (BNA) 1177 (7th Cir. 2014) (noting but refusing to resolve the ambiguity in CERCLA § 107(a)(4)).

¹⁸*See, e.g., Westfarm Associates Ltd. Partnership v. Washington Suburban Sanitary Com’n*, 66 F.3d 669, 41 Env’t. Rep. Cas. (BNA) 1321, 33 Fed. R. Serv. 3d 579, 25 Env’t. L. Rep. 21587, 147 A.L.R. Fed. 747 (4th Cir. 1995) (defendant must come forward with evidence to show that it was not the

rence of response costs.¹⁹

There are only three statutory defenses to § 107 liability, all of which are derived from § 311 of the Clean Water Act.²⁰ They are that the sole cause of the release was an act of God, an act of war,²¹ or the act or omission of a third party.²² Some courts have also permitted responsible parties to plead equitable defenses.²³ There are also limitations on the amount of liability in the case of spills from vessels, motor carriers, aircraft, pipelines, and several other classes of facilities.²⁴ The liability limitations can be avoided, however, where the government is able to show that the release or threat was the result of “willful misconduct or willful negligence within the privity or knowledge” of the actor, where the primary cause of the release was a violation “(within the privity or knowledge of such person) of applicable safety, construction, or operating standards or regulations,” and in cases where the actor has been uncooperative with response authorities.²⁵

§ 14:140 Liability to the government or private parties for response expenditures and to the Government for natural resource damages—Joint and several liability

Liability of all responsible parties connected with a CERCLA facility is joint and

source of the contamination to survive summary judgment).

¹⁹See, e.g., *ITT Industries, Inc. v. Borgwarner, Inc.*, 700 F. Supp. 2d 848, 71 Env’t. Rep. Cas. (BNA) 2050 (W.D. Mich. 2010) (plaintiff established that defendants’ contamination which migrated toward Superfund site was a “substantial factor” in causing plaintiff to incur response costs).

²⁰For a detailed discussion of case law affecting these defenses, see the discussion of § 311 in Ch. 13.

²¹In re September 11 Litigation, 751 F.3d 86, 78 Env’t. Rep. Cas. (BNA) 1865 (2d Cir. 2014), cert. denied, 83 U.S.L.W. 3119 (U.S. Aug. 27, 2014) (911 terrorist attacks fell within “act of war” defense).

²²CERCLA § 107(b)(1)-(3), 42 U.S.C.A. § 9607(b)(1)-(3). The third-party defense is, realistically, the one most often asserted. A person with whom one has a contractual relationship is not a third party as to such person (unless it happens to be a railroad), and the defense is further limited by a requirement that the claimant show that he exercised due care with respect to the substances and took precautions against “foreseeable acts or omissions of such third party and the consequences that could foreseeably result from such acts or omissions.” CERCLA § 107(b)(3), 42 U.S.C.A. § 9607(b)(3). Congress modified the contractual relationship scheme in 1986 by adopting a definition of “contractual relationship” in CERCLA § 101(35), 42 U.S.C.A. § 9601(35), which specifically *includes* property transfers as contractual relationships, but also exempts innocent purchasers of already contaminated property. For a discussion of the term “contractual relationship,” see *United States v. Monsanto Co.*, 858 F.2d 160, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20085 (4th Cir. 1988), cert. denied, 490 U.S. 1106 (1989). The third-party defense is generally construed narrowly. *Chatham Steel Corp. v. Brown*, 858 F. Supp. 1130, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 20061 (N.D. Fla. 1994).

For some discussion of CERCLA-related, third-party defenses, compare *New York v. Lashins Arcade Co.*, 91 F.3d 353 (2d Cir. 1996) (holding that purchaser of contaminated property established third-party defense, because allegedly offending third-party conduct did not occur in connection with a contractual relationship with purchaser, and because purchaser exercised “due care” with respect to the hazardous substance concerned even though he did not investigate the property prior to purchase) with *New York v. Shore Realty Corp.*, 759 F.2d 1032, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20358 (2d Cir. 1985) (rejecting the defense raised by a developer who bought already contaminated property on the grounds that it had a contractual relationship with the owner who caused the contamination, and that it bought the property with knowledge of the conditions). See also *United States v. Ward*, 618 F. Supp. 884, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20127 (E.D.N.C. 1985).

²³See *Town of Munster v. Sherwin-Williams Co.*, 27 F.3d 1268, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 21108 (7th Cir. 1994) (allowing defense of laches).

²⁴For a listing of the limitations and facilities, see CERCLA § 107(c)(1), 42 U.S.C.A. § 9607(c)(1). The maximum potential CERCLA liability for any facility is \$50 million.

²⁵CERCLA § 107(c)(2), 42 U.S.C.A. § 9607(c)(2).

several, a principle first enunciated in *United States v. Chem-Dyne Corp.*¹ and followed by virtually every federal court to address the issue.² Consequently, EPA's remedial investigations make little effort to ascertain the universe of responsible parties connected with a site, nor does the Agency make any attempt at determining the relative contributions of individual PRPs with a high degree of accuracy. The Agency simply moves against a few relatively large contributors, and leaves the allocation of individual responsibility and enlargement of the class of PRPs to those entities.³

An important issue for PRPs is whether there is a right of contribution among the jointly and severally liable entities. Early versions of the bills that became CERCLA contained a statutory right of contribution that disappeared from the final bill, along with early references to joint and several liability.⁴ Obviously, the absence of such a right would pose significant barriers to settlement, and thus the existence and source of a right of contribution has been an issue in virtually every CERCLA

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¹*United States v. Chem-Dyne Corp.*, 572 F. Supp. 802, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20986 (S.D. Ohio 1983). CERCLA does not, however, require joint and several liability in every situation because the harm might be divisible. Defendants have the burden to prove that there is a reasonable basis to apportion the harm based on common law standards, particularly Restatement (Second) of Torts § 433A. *See, e.g.*, *Burlington Northern and Santa Fe Ry. Co. v. U.S.*, 556 U.S. 599, 129 S. Ct. 1870, 173 L. Ed. 2d 812, 68 Env't. Rep. Cas. (BNA) 1161 (2009); *U.S. v. NCR Corp.*, 688 F.3d 833, 75 Env't. Rep. Cas. (BNA) 1001 (7th Cir. 2012) (defendant failed to meet burden of showing that harm was capable of apportionment).

²*See, e.g.*, *O'Neil v. Picillo*, 883 F.2d 176, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20115 (1st Cir. 1989); *United States v. Monsanto Co.*, 858 F.2d 160, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20085 (4th Cir. 1988), cert. denied, 490 U.S. 1106 (1989); *United States v. Ottati & Goss, Inc.*, 630 F. Supp. 1361, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20763 (D.N.H. 1985); *New York v. Shore Realty Corp.*, 759 F.2d 1032, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20358 (2d Cir. 1985); *United States v. Ward*, 618 F. Supp. 884, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20358 (E.D.N.C. 1985); *United States v. Shell Oil Co.*, 605 F. Supp. 1064, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20337 (D. Colo. 1985).

Generally, federal courts have held that CERCLA liability is retroactive as well. *See, e.g.*, *United States v. Ne. Pharm. & Chem. Co., Inc.*, 810 F.2d 726, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20603 (8th Cir. 1986), cert. denied, 484 U.S. 848 (1987). One federal district court held that CERCLA liability is not retroactive. *See United States v. Olin Corp.*, 927 F. Supp. 1502, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 21303 (S.D. Ala. 1996), but the ruling was overturned on appeal. Applying the Supreme Court's analysis of the retroactive applicability of statutes that is set forth in *Landgraf v. USI Film Prods.*, 511 U.S. 244 (1994), the district court in *Olin* concluded that: (1) neither the language nor the legislative history of CERCLA indicates Congress' clear intent that CERCLA liability be retroactive; (2) CERCLA liability has "retroactive effect"; and (3) absent clear congressional intent, the traditional presumption against retroactivity should apply to § 107(a) liability, as linked to § 106(a) liability in *Olin*. In addition, the district court held that CERCLA's application to the facts at issue, which involved the cleanup of a locally contained aquifer, violated the Commerce Clause. Reversing the district court's ruling on the statutory and constitutional issues, the Eleventh Circuit found clear congressional intent supporting the retroactive application of CERCLA's liability provisions in the statute's language, structure, purpose, and legislative history. With respect to the constitutional issue, the Eleventh Circuit held that even the narrowest class of activities that is regulated under CERCLA—which the court found to be "the regulation of intrastate, on-site waste disposal"—is a valid element of Congress' efforts to protect interstate commerce from pollution. *United States v. Olin Corp.*, 107 F.3d 1506, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 20778 (11th Cir. 1997).

³*United States v. Hercules, Inc.*, 247 F.3d 706, 31 Env'tl. L. Rep. (Env'tl. L. Inst.) 20567 (8th Cir. 2001) (holding that the proper standard for divisibility includes not only "distinct harms" but also a reasonable basis for apportioning for single harm through "volumetric, chronological, or other types of evidence"); *United States v. Occidental Chem. Corp.*, 200 F.3d 143, 49 Env't. Rep. Cas. (BNA) 1737, 30 Env'tl. L. Rep. 20274 (3d Cir. 1999) (holding that a PRP remains liable to EPA for response costs even though another PRP, the owner of the site, has committed to the government that it will clean up the site and will reimburse the Superfund for past response costs).

⁴*See Colorado v. ASARCO, Inc.*, 608 F. Supp. 1484, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20523 (D. Colo. 1985).

action that has involved litigation. The emerging majority view prior to the 1986 amendments held that there is a federal right of contribution, although the source of the right is unclear. There is some authority that the courts must look to state law for a right of contribution.⁵

Congress effectively ended the debate in 1986 by creating a statutory right of contribution among persons who are “liable or potentially liable under § 107(a).”⁶ The legislative history of this provision indicates an intention to approve, as one method of apportioning liability, application of the so-called “Gore Factors.”⁷ Several courts had concluded that a federal right of contribution was implicit in § 107.⁸ One thread of authority argued for apportionment of response costs based on comparative fault principles premised on the factors contained in an amendment to CERCLA proposed by Congressman Gore and adopted by the House but dropped from the final bill. The so-called “Gore Amendment” factors consider such things as relative toxicity and volume, differing migratory potentials, and the effect of settlements on non-settling parties.⁹ Courts may consider any number of the Gore Factors, but are not bound to consider all of them and are not limited to considering only them.¹⁰

For a time, the federal courts were divided about whether a PRP may bring a cost recovery action against other PRPs under § 107(a)(4)(B) or whether a PRP is limited to a contribution action under § 113(f). The majority view in the circuit courts was that a “culpable” PRP¹¹ is limited to an action against other “culpable” PRPs under § 113(f) that is governed by the joint operation of §§ 107 and 113. Courts adopting

⁵The state law theory was espoused in *United States v. Ne. Pharm. Chem. Corp.*, 579 F. Supp. 823, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20212 (W.D. Mo. 1984), *aff'd in part, rev'd in part*, 810 F.2d 726 (8th Cir. 1986).

⁶CERCLA § 113(f)(1), 42 U.S.C.A. § 9613(f)(1). The statute states that the governing law is federal law, and that the courts should use “equitable factors” in apportioning costs. EPA is authorized, though not required, by the provisions of CERCLA § 122, 42 U.S.C.A. § 9622, to prepare nonbinding allocation reports (NBARs) for the use of the parties in fashioning settlements. In *Smith Land & Improvement Corp. v. Celotex Corp.*, 851 F.2d 86, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21026 (3d Cir. 1988), *cert. denied*, 488 U.S. 1029 (1989), the court allowed the buyer of contaminated land to seek contribution from the seller even if the buyer was aware of the contamination prior to purchase, the buyer's knowledge being one of the equitable factors to be considered in determining the amount, rather than the existence, of liability.

⁷H.R. Rep. No. 99-253, Part 3, at 19 (1986).

⁸*See Colorado v. ASARCO, Inc.*, 608 F. Supp. 1484, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20523 (D. Colo. 1985); *Wehner v. Syntex Agribusiness, Inc.*, 616 F. Supp. 27, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20346 (E.D. Mich. 1985); *Mola Dev. Corp. v. United States*, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 21029 (C.D. Cal. 1985); *Kelley v. United States*, 618 F. Supp. 1103, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20080 (W.D. Mich. 1985); *cf. United States v. Conservation Chem. Co.*, 619 F. Supp. 162, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20193 (W.D. Mo. 1985) (holding that a right of contribution exists for recovery of response costs, but not for injunctive relief).

⁹*See United States v. Conservation Chem. Co.*, 619 F. Supp. 162, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20193 (W.D. Mo. 1985). There is also a lengthy discussion in *United States v. A & F Materials, Inc.*, 578 F. Supp. 1249, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20105 (S.D. Ill. 1984).

¹⁰*See, e.g., Litgo New Jersey Inc. v. Commissioner New Jersey Dept. of Environmental Protection*, 725 F.3d 369, 76 Env't. Rep. Cas. (BNA) 2057 (3d Cir. 2013).

¹¹Some courts have suggested that an “innocent” PRP may bring a § 107(a) cost recovery action against other PRPs. *See, e.g., Rumpke of Ind., Inc. v. Cummins Engine Co.*, 107 F.3d 1235, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 20596 (7th Cir. 1997) (landowner PRP may bring a § 107(a) cost recovery action against other PRPs if it alleges to have contributed nothing to the hazardous conditions on its property); *AM Int'l, Inc. v. Datacard Corp.*, 106 F.3d 1342, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 20503 (7th Cir. 1997) (landowner PRP who purchased contaminated property may bring a cost recovery action under § 107(a) against another PRP even if the landowner knew of the contamination at the time of purchase and presumably paid less for the property to reflect that fact); *Akzo Coatings, Inc. v. Aigner Corp.*, 30 F.3d 761, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21254 (7th Cir. 1994) (implying that “a landowner forced to clean up hazardous materials that a third party spilled onto its property or that migrated there from adjacent lands” may bring a cost recovery action under § 107(a)).

this view have generally interpreted the inclusion of a statutory right of contribution in CERCLA as evidence that Congress intended § 113(f) to be a culpable PRP's only means of recovery of cleanup costs, and have reasoned that a claim for the equitable apportionment of costs among responsible parties is by its nature a claim for contribution.¹² By contrast, courts finding a separate cause of action under § 107(a)(4)(B) in support of their decisions have cited the clear statutory language, the legislative history, and CERCLA's objective of imposing liability for cleanup costs on responsible parties.¹³

In December 2004, the Supreme Court decided in *Cooper Industries, Inc. v. Aviall Services, Inc.* that unless a PRP's cleanup costs were associated with an EPA enforcement action, that PRP may not seek contribution from other PRPs through § 113.¹⁴ Thus, if a PRP voluntarily elects to cleanup a site, and the cleanup costs are not associated with an EPA action of § 106 or § 107, that PRP cannot sue for contribution. More recently in *United States v. Atlantic Research Corp.*,¹⁵ the Supreme Court revisited the claims available to PRPs under CERCLA. It held, unanimously, that a PRP may bring a claim for cost recovery under § 107(a). This means that PRPs that have voluntarily incurred cleanup costs have an avenue to recover those costs from other parties. Since *Atlantic Research*, several circuit courts of appeals have held that a CERCLA § 113(f)(3)(B) contribution action serves as the exclusive remedy for parties that incur response costs under administratively or judicially approved settlements pursuant to CERCLA §§ 106 or 107.¹⁶ The courts are split, however, concerning whether § 113(f) provides a contribution claim where a party seeks contribution after settling state law liability (as opposed to federal CERCLA liability).¹⁷

A PRP's standing to bring suit under § 107(a) or § 113(f) is procedurally

¹²See, e.g., *Sun Co. v. Browning-Ferris, Inc.*, 124 F.3d 1187 (10th Cir. 1997), cert. denied, 522 U.S. 1113 (1998); *Pinal Creek Group v. Newmont Mining Corp.*, 118 F.3d 1298 (9th Cir. 1997), overruled by *Kotrous v. Goss-Jewett Co. of N. Cal., Inc.*, 523 F.3d 924, 933 (9th Cir. 2008); *In re Reading Co.*, 115 F.3d 1111, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 21075 (3d Cir. 1997); *New Castle County v. Halliburton NUS Corp.*, 111 F.3d 1116, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 21159 (3d Cir. 1997); *Rumpke of Ind., Inc. v. Cummins Engine Co.*, 107 F.3d 1235, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 20596, 20596 (7th Cir. 1997); *Redwing Carriers, Inc. v. Saraland Apartments*, 94 F.3d 1489, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 20028 (11th Cir. 1996); *United States v. Colo. & E. R.R. Co.*, 50 F.3d 1530, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 20309 (10th Cir. 1995); *Akzo Coatings, Inc. v. Aigner Corp.*, 30 F.3d 761, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21254, 21254 (7th Cir. 1994); *United Techs. Corp. v. Browning-Ferris Indus., Inc.*, 33 F.3d 96, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21356 (1st Cir. 1994), cert. denied, 513 U.S. 1183 (1995).

¹³See, e.g., *Adhesives Research, Inc. v. Am. Inks & Coatings Corp.*, 931 F. Supp. 1231 (M.D. Pa. 1996).

¹⁴*Aviall Servs., Inc. v. Cooper Indus., Inc.*, No. Civ.A.397CV1926D, 2000 WL 31730 (N.D. Tex. Jan. 13, 2000), rev'd, 263 F.3d 134 (5th Cir. 2001), cert. granted, 540 U.S. 1099, 124 S. Ct. 981 (2004), rev'd & remanded, 543 U.S. 157, 125 S. Ct. 577 (2004). Some courts have held that PRPs that voluntarily cleanup contaminated sites are still able to pursue cost recovery actions under § 107 of CERCLA. See *Consol. Edison Co. of N.Y., Inc. v. UGI Utils., Inc.*, 423 F.3d 90 (2d Cir. 2005); *Metro. Water Reclamation Dist. of Greater Chicago v. Lake River Corp.*, 365 F. Supp. 2d 913 (N.D. Ill. 2005); *Vine St., LLC v. Keeling*, 361 F. Supp. 2d 600 (E.D. Tex. 2005). But see *Elementis Chems., Inc. v. T.H. Agric. & Nutrition, LLC*, 373 F. Supp. 2d 257 (S.D.N.Y. 2005) (holding that PRPs that voluntarily cleanup contaminated sites are not able to sue for contribution or for cost recovery).

¹⁵*United States v. Atlantic Research Corp.*, 551 U.S. 128, 127 S. Ct. 2331, 37 Env'tl. L. Rep. (Env'tl. L. Inst.) 20139 (2007).

¹⁶See, e.g., *Solutia, Inc. v. McWane, Inc.*, 672 F.3d 1230, 74 Env't. Rep. Cas. (BNA) 1225 (11th Cir. 2012) (consent decree); *Bernstein v. Bankert*, 733 F.3d 190, 77 Env't. Rep. Cas. (BNA) 1212 (7th Cir. 2013), cert. denied, 134 S. Ct. 1024, 188 L. Ed. 2d 120, 78 Env't. Rep. Cas. (BNA) 1428 (2014) (administrative order by consent); *Hobart Corp. v. Waste Management of Ohio, Inc.*, 758 F.3d 757, 79 Env't. Rep. Cas. (BNA) 1012 (6th Cir. 2014) (administrative settlement agreement and order on consent); *NCR Corp. v. George A. Whiting Paper Co.*, 768 F.3d 682, 79 Env't. Rep. Cas. (BNA) 1241 (7th Cir. 2014) (consent decree, administrative order of consent, and unilateral administrative order).

¹⁷*Compare Trinity Industries, Inc. v. Chicago Bridge & Iron Co.*, 735 F.3d 131, 76 Env't. Rep. Cas.

significant. A § 107(a)(4)(B) action is governed by a six-year statute of limitations, while a § 113(f) action is governed by a three-year statute of limitations.¹⁸ Furthermore, § 113(f) grants contribution protection to settling parties and allows the assertion of equitable defenses that may not be asserted under § 107(a)(4)(B).

By contrast, RCRA still does not provide a statutory right to contribution. The Supreme Court held in *Meghrig v. KFC Western, Inc.*,¹⁹ that § 7002 does not authorize a private cause of action to recover the prior cost of cleaning up waste that does not, at the time of suit, continue to pose an endangerment to health or the environment. The Court reasoned that § 7002(a), which refers only to injunctive relief, does not contemplate the award of past cleanup costs, whether such costs are referred to as “damages” or “equitable restitution.” The Court further found that § 7002(a)(1)(B) allows a private party to bring suit only on an allegation that a contaminated site presently poses an “imminent and substantial endangerment to health or the environment,” not on an allegation that a site posed such an endangerment at some point in the past. The Court noted that other aspects of RCRA’s enforcement scheme, which differ from CERCLA’s cost recovery provisions, support its decision.²⁰

§ 14:141 Liability to the government or private parties for response expenditures and to the Government for natural resource damages—Section 107 procedures

The 1986 amendments to CERCLA added significant verbiage to the statute, establishing the explicit extent of remedy requirements¹ and elaborate settlement procedures.² Although much of the statute changed, what was done to the basic § 107 remedial scheme was to codify, and thus essentially freeze, EPA’s 1985 NCP process.³ One significant addition, however, is the imposition of mandatory public participation procedures on the § 107 decisionmaking process.⁴

In the ordinary § 107 case, EPA will, following a preliminary assessment and list-

(BNA) 2145 (3d Cir. 2013) (holding that § 113(f)(3)(B) does not require settlement specifically under CERCLA to trigger contribution eligibility and concluding that consent decree pursuant to state statutes sufficed) *with* W.R. Grace & Co.-Conn. v. Zotos Intern., Inc., 559 F.3d 85, 68 Env’t. Rep. Cas. (BNA) 1481 (2d Cir. 2009) (consent order resolving state claims did not trigger contribution eligibility under § 113(f)(3)(B)).

¹⁸See § 113(g)(3). It has been held, however, that a PRP’s § 113(f) contribution action that is the initial action for recovery of costs incurred under § 107 is governed by the six-year statute of limitations set forth in § 113(g)(2). See, e.g., *Sun Co. v. Browning-Ferris, Inc.*, 124 F.3d 1187 (10th Cir. 1997), cert. denied, 522 U.S. 1113 (1998).

¹⁹*Meghrig v. KFC Western, Inc.*, 516 U.S. 479, 116 S. Ct. 1251, 26 Env’tl. L. Rep. (Env’tl. L. Inst.) 20820 (1996); see also *Furrer v. Brown*, 62 F.3d 1092, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 21450 (8th Cir. 1995), cert. denied, 517 U.S. 1167 (1996).

²⁰*Meghrig v. KFC Western, Inc.*, 516 U.S. 479, 483–88, 116 S. Ct. 1251, 1254–56, 26 Env’tl. L. Rep. (Env’tl. L. Inst.) 20820, 20821–22 (1996). Relying on the Supreme Court’s reasoning in *Meghrig*, one federal district court has held that a citizen suit plaintiff may not use RCRA to recover “even those response costs that it ‘will continue to incur’ when remediation systems or activities are in place or substantially in place at the time of suit,” even when it is possible that the contamination at issue continues to pose an imminent and substantial endangerment at that time. *Express Car Wash Corp. v. Irinaga Bros.*, 967 F. Supp. 1188, 1193 (D. Or. 1997). The court suggested in dicta, however, that such a plaintiff may use RCRA to seek to require defendants to undertake work in connection with a remediation that was underway at the time of the suit.

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¹CERCLA § 121, 42 U.S.C.A. § 9621.

²CERCLA § 122, 42 U.S.C.A. § 9622.

³The NCP was substantially revised in 1990. 55 Fed. Reg. 8666 (Mar. 8, 1990).

⁴CERCLA § 117, 42 U.S.C.A. § 9617.

ing of the site on the NPL, either initiate an RI/FS at a priority list site and notify the PRPs uncovered by the investigation or, if a critical mass of PRPs is identified early enough, the Agency will notify them in advance of commencing the RI/FS and attempt to persuade them to do the investigation privately.⁵

The relationship between EPA and PRP groups was significantly formalized by § 122 of the 1986 SARA amendments. Section 122, which governs both administrative and judicial settlements, governs both the procedures leading to settlements and some aspects of the substantive terms thereof.⁶

EPA's information gathering includes use of § 104(e) information demands and occasionally § 3007 of RCRA.⁷ EPA has the right to compel access to a site on which it believes hazardous substances are present,⁸ or in order to determine the need for or the extent of response action,⁹ and may force a site owner to allow EPA to occupy uncontaminated portions of the site.¹⁰

EPA typically makes a formal demand on the group of the most significant PRPs, usually selecting generators by rough volumetric calculations,¹¹ after completing the RI/FS and sometimes before selecting the remedy. It will also frequently initiate cost recovery litigation if it does not appear that settlement is likely prior to completing, or even prior to initiating, remedial action at the site, and seek a declaratory judgment that its list of PRPs is responsible for the site.¹²

PRP groups who wish to avoid litigation will form a PRP committee and negotiate with EPA and among themselves. EPA negotiations will often be undertaken by a steering committee, usually dominated by the large generators, but almost always open to participation by any interested PRP, which is represented by a common or

⁵See 40 C.F.R. § 300.700 (allowing a person to volunteer to investigate). PRPs may elect to undertake investigative work in order to have greater influence over the recommendations, and to be able to do the work unconstrained by the Davis-Bacon Act.

⁶CERCLA § 122, 42 U.S.C.A. § 9622. For a detailed treatment of this, see Stever, *Law of Chemical Regulation and Hazardous Waste*.

⁷Section 104(e) was broadened significantly by SARA, Pub. L. No. 99-499, 100 Stat. 1613. The amended statute more closely resembles § 3007 of RCRA, 42 U.S.C.A. § 6927, in providing both broad authority for seeking information and for access to premises where information may be found. The amendments cured some defects in the prior statute. Information may be demanded for the purpose of determining the need for and the extent of the remedy, or for the purpose of enforcement, including information about a person's ability to pay. Broad authority is provided for entry onto private property, and provision is made for exercising the power of eminent domain, overruling *Outboard Marine Corp. v. Thomas*, 773 F.2d 883, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 21094 (7th Cir. 1985), vacated by 479 U.S. 1002 (1986).

⁸See *United States v. Fisher*, 864 F.2d 434, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20233 (7th Cir. 1988); *United States v. Charles George Trucking Co.*, 682 F. Supp. 1260, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20886 (D. Mass. 1988); *B.F. Goodrich Co. v. Murtha*, 697 F. Supp. 89, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20357 (D. Conn. 1988); *United States v. United Nuclear Corp.*, 610 F. Supp. 527, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20442 (D.N.M. 1985).

⁹CERCLA § 104(e)(3), 42 U.S.C.A. § 9604(e)(3).

¹⁰See CERCLA § 104(j), 42 U.S.C.A. § 9604(j) (1986) (overruling *Outboard Marine Corp. v. Thomas*, 773 F.2d 883, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 21094 (7th Cir. 1985), which held that CERCLA does not expressly or implicitly authorize forced access to uncontaminated property).

¹¹EPA's generator volumetric calculations are potentially unreliable, since the Agency has no incentive to be accurate in light of the joint and several liability regime. Although § 122's Non-Binding Preliminary Allocations of Responsibility (NBAR), 52 Fed. Reg. 19919 (May 28, 1987), process may produce somewhat more reliable nonbinding allocations for settlement purposes, it is not likely that the Agency will produce allocations that a majority of PRPs will have confidence in.

¹²This practice, which was codified in CERCLA § 113(g)(2)(B), 42 U.S.C.A. § 9613(g)(2)(B) (1986), had, prior to the 1986 reauthorization, been sanctioned by a clear preponderance of the federal district courts addressing it. See, e.g., *United States v. Conservation Chem. Co.*, 619 F. Supp. 162, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20193 (W.D. Mo. 1985); *United States v. A & F Materials, Inc.*, 578 F. Supp. 1425, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20105 (S.D. Ill. 1984).

“liaison” counsel. Settling parties will sometimes seek to do the RI/FS (if EPA has not already completed one), will always negotiate the scope of the remedial plan, and sometimes negotiate a private remedial undertaking.¹³

An important question that always arises in CERCLA negotiations is preauthorization. Settling parties always feel more comfortable if EPA blesses their response action by formally stating that it is consistent with the NCP, since such a determination simplifies subsequent contribution actions against non-settling parties, who would otherwise be able to raise a defense that the settlers’ response action failed to satisfy the statutory criteria.¹⁴ EPA initially resisted preauthorization, and inserted a provision in the NCP stating that preauthorization was not a prerequisite to consistency.¹⁵ It seems to have softened its position in practice, however, under pressure from settling parties in a number of cases and after several courts indicated that government preauthorization is a necessary prerequisite to a private cost recovery action.¹⁶ Nevertheless, preauthorization of private remedial action remained the exception rather than the rule up to the point of the 1986 amendments, in which the § 122 remedial settlement scheme effectively mandates EPA approval of all private remedies for NPL listed sites.¹⁷

Settling PRPs often establish a separate allocation committee to work out the respective cost contributions of the members. In many cases allocations are agreed to informally, usually on the basis of an agreed volumetric formula. Other factors, such as migratory potential and inordinate response costs affecting a class of substance and other “Gore factors,” have been relied upon in agreed allocation. PRPs have begun, in addition, to experiment with alternative dispute resolution mechanisms to resolve intra-group disputes that would otherwise result in a breakdown of negotiations and resulting multi-party litigation.¹⁸

One potential problem facing PRPs who undertake remedial action at a Superfund site is resistance by an owner/operator that is not a settling party. Amendments to § 104 and the provisions of new § 119 have alleviated this problem somewhat since 1986.¹⁹

§ 14:142 Liability to the government or private parties for response expenditures and to the Government for natural resource damages—Pre-enforcement review

¹³It is generally believed that EPA remedial actions cost 30 to 35 percent more than private undertakings.

¹⁴*United States v. W. Processing Co.*, 761 F. Supp. 725 (W.D. Wash. 1991).

¹⁵40 C.F.R. § 300.271. These provisions were not revised in the 1990 revisions, *see* 55 Fed. Reg. 8666 (Mar. 8, 1990), but do not appear to be included in the 1994 NCP Amendment. 59 Fed. Reg. 47452 (Sept. 15, 1994).

¹⁶*See, e.g., Artesian Water Co. v. New Castle County*, 605 F. Supp. 1348, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20577 (D. Del. 1985); *Bulk Distrib. Ctrs., Inc. v. Monsanto Co.*, 589 F. Supp. 1437, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20151 (S.D. Fla. 1984). These courts have not predicated their rulings on any nexus between § 112’s requirement of mandatory preauthorization as a prerequisite to making a claim against the fund, *see Fishel v. Westinghouse Elec. Corp.*, 617 F. Supp. 1531, 23 Env’t. Rep. Cas. (BNA) 1329, 16 Env’tl. L. Rep. 20001 (M.D. Pa. 1985), but rather, as stated by the court in *Bulk Distribution*, as the only practical way to ensure that the public’s interests are being served.

¹⁷*See* CERCLA § 122(e)(6), 42 U.S.C.A. § 9622(e)(6) (prohibiting any private action at an NPL listed site by a PRP where EPA and/or other PRPs are proceeding under § 121 and/or 122, without EPA preauthorization).

¹⁸Examples of alternative dispute resolution mechanisms are the evaluation and mediation services of Clean Sites, Inc., an industry-environmental group jointly sponsored entity, and arbitration services provided by the Center for Public Resources, a chemical industry-sponsored entity.

¹⁹*See, e.g., B.F. Goodrich Co. v. Murtha*, 697 F. Supp. 89, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20357 (D. Conn. 1988) (issuing a preliminary injunction authorizing access).

It is now reasonably well settled that there was no legal basis under the original CERCLA for judicial review of an EPA remedial decision or of an EPA refusal to accept a remedial plan proffered by PRPs, or for enjoining EPA from commencing remedial action at a site listed on the NPL.¹ CERCLA also bars judicial review of an EPA cleanup plan before it is completed.² Once EPA sues to recover its costs, however, a court has jurisdiction to review allegations that continuance of the remedy will cause irreparable harm.³ In addition, there is some authority implying that a defendant in a § 107 cost recovery action may be able to obtain a reduction in the amount of the recovery if able to show that EPA wrongfully refused to adopt a PRP-sponsored less costly remedial plan.⁴

On the former point, §§ 113(h) to 113(j), added to the statute in 1986, codify EPA's position, limiting review of EPA's decision on a remedy to an on-the-record appeal of its ROD. The latter issue was also addressed in 1986. For judicially approved settlements, the issue has been mooted by the provisions of §§ 122 and 113, discussed above. Administrative order recipients are given a right to seek reimbursement of unlawfully imposed expenditures from the Superfund. Section 113(h) effectively bars challenges that interfere with removal or remedial actions, including RCRA claims, at least until those actions are concluded.⁵

§ 14:143 Liability to the government or private parties for response expenditures and to the Government for natural resource damages—Costs recoverable

Section 107(a) imposes liability for “all costs of removal or remedial action” incurred by either EPA or a state.¹ Recoverable costs include actual removal or remedial expenditures (provided they are not inconsistent with the NCP), preliminary site assessment, and the costs of undertaking the RI/FS. Punitive damages have

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¹*See generally* Lone Pine Steering Comm. v. EPA, 777 F.2d 882, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20009 (3d Cir. 1985); J.V. Peters & Co. v. Adm'r, 767 F.2d 263, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20646 (6th Cir. 1985); United States v. United Nuclear Corp., 610 F. Supp. 527, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20442 (D.N.M. 1985); Wheaton Indus. v. EPA, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20959 (D.N.J. 1985), *aff'd*, 781 F.2d 354, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20260 (3d Cir. 1986); Barmet Aluminum Corp. v. EPA, 927 F.2d 289, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 20850 (6th Cir. 1991). *But see* Gen. Elec. Co. v. EPA, 360 F.3d 188, 34 Env'tl. L. Rep. (Env'tl. L. Inst.) 20020 (D.C. Cir. 2004) (holding that § 113 does not bar pre-enforcement review of facial constitutional challenges to CERCLA).

²*Schalk v. Reilly*, 900 F.2d 1091, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20669 (7th Cir.), *cert. denied* sub nom. *Frey v. Reilly*, 498 U.S. 981 (1990), *reh'g denied*, 498 U.S. 1074 (1991).

³*United States v. Princeton Gamma-Tech, Inc.*, 31 F.3d 138, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21243 (3d Cir. 1994), *overruled in part* on different grounds by *Clinton County Comm'rs v. EPA*, 116 F.3d 1018 (3d Cir. 1997). By contrast, a federal court lacks subject matter jurisdiction over all CERCLA citizen suits challenging incomplete EPA remedial actions under CERCLA, even where such suits allege irreparable harm. *Clinton County Comm'rs v. EPA*, 116 F.3d 1018, 1018 (3d Cir. 1997), *cert. denied*, 522 U.S. 1045 (1998).

⁴*See United States v. Ottati & Goss, Inc.*, 630 F. Supp. 1361, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20763 (D.N.H. 1985).

⁵*El Paso Natural Gas Co. v. U.S.*, 750 F.3d 863, 78 Env't. Rep. Cas. (BNA) 1281 (D.C. Cir. 2014) (holding that § 113(h) barred RCRA claims, but refusing to decide whether RCRA claims could be renewed once removal and remedial actions are completed and recognizing that there is “no easy answer”); *see also Frey v. E.P.A.*, 403 F.3d 828, 60 Env't. Rep. Cas. (BNA) 1097, 35 Env'tl. L. Rep. 20076 (7th Cir. 2005); *Frey v. E.P.A.*, 751 F.3d 461, 78 Env't. Rep. Cas. (BNA) 1473 (7th Cir. 2014), *cert. denied*, 135 S. Ct. 494 (2014) (where EPA supplements remediation plan after some work is complete, Section 113(h) bars review of claims related to old plan only to the extent it overlaps with the new, unfinished plan).

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¹CERCLA § 107(a)(4)(A), 42 U.S.C.A. § 9607(a)(4)(A).

also been held within the ambit of recoverable costs.²

In *Key Tronic Corp. v. United States*, the Supreme Court held that CERCLA § 107 does not provide for the award of a private litigant's attorney fees associated with bringing a cost recovery action. The Court indicated, however, that a private litigant may recover attorney fees incurred both in identifying other PRPs and during the course of remedial work.³ However, the Ninth Circuit has held that pursuant to § 107(a)(4)(A), the EPA may recover reasonable attorney fees as part of its response costs.⁴

Costs incurred prior to the enactment of CERCLA at sites subsequently placed on the NPL have been held recoverable by some courts, and rejected by others.⁵ The costs incurred by the government in overseeing a remediation effort paid for by a private party pursuant to RCRA are recoverable response costs.⁶

§ 14:144 Liability to the government or private parties for response expenditures and to the Government for natural resource damages—Private cost recovery actions

Section 107(a)(1)-(4)(B) permits recovery of response costs by persons other than the federal and state governments if such costs are consistent with the NCP.¹ Examples of such plaintiffs are “innocent” site owners,² neighboring property owners adversely affected by a release of hazardous substances from a facility,³ and

²*United States v. Parsons*, 936 F.2d 526 (11th Cir. 1991) (holding that § 107(c)(3) permits recovery of punitive damages equivalent to three times the cleanup costs).

³*Key Tronic Corp. v. United States*, 511 U.S. 809, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20955, on remand, 30 F.3d 1105, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21282 (9th Cir. 1994).

⁴*See United States v. Chapman*, 146 F.3d 1166 (9th Cir. 1998).

⁵*Compare United States v. Shell Oil Co.*, 605 F. Supp. 1064, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20337 (D. Colo. 1985); *United States v. Ward*, 618 F. Supp. 884, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20127 (E.D.N.C. 1985) *with United States v. Ne. Pharm. Chem. Corp.*, 579 F. Supp. 823, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20212 (W.D. Mo. 1984), *aff'd in part, rev'd in part*, 810 F.2d 726 (8th Cir. 1986); *United States v. Wade*, Civil Action No. 79-1426, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20437 (E.D. Pa. Mar. 23, 1984).

⁶*U.S. v. E.I. Dupont De Nemours & Co. Inc.*, 432 F.3d 161, 61 Env't. Rep. Cas. (BNA) 1673, 35 Env'tl. L. Rep. 20258 (3d Cir. 2005); *see* 40 C.F.R. § 300.400(h) (“EPA will provide oversight when the response is pursuant to an EPA order or federal consent decree.”). The regulations governing private party voluntary cleanups are now set forth at Subpart H of the revised NCP. *See* 40 C.F.R. § 300.700. Pursuant to Subpart H and 40 C.F.R. § 300.430(d)(1), which provides for the preparation of a baseline risk assessment, PRPs are in a position to influence the development of remedial alternatives and thus the selection of a no-action alternative.

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¹*See Channel Master Satellite Sys., Inc. v. JFD Electronics Corp.*, 748 F. Supp. 373, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 20297 (E.D.N.C. 1990). Whether EPA preauthorization is required for any such expenditures to be “consistent” with the NCP is a disputed issue that is addressed in § 14:141.

²*See Tanglewood E. Homeowners v. Charles-Thomas, Inc.*, 849 F.2d 1568, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21348 (5th Cir. 1988) (purchasers of contaminated subdivision parcels); *cf. New York v. Shore Realty Corp.*, 759 F.2d 1032, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20358 (2d Cir. 1985) (not-so-innocent developer who purchased with knowledge held to be a responsible party). *See G. van Velsor Wolf Jr., Emerging Contours of the CERCLA ‘Innocent Purchaser’ Defense*, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 10483 (Nov. 1990).

Innocent site owners were provided with two forms of relief in the 1986 amendments to CERCLA. Property owners who purchased contaminated property without knowledge of its condition are not barred from making a third party defense under CERCLA § 107, 42 U.S.C.A. § 9607. *See CERCLA* § 101(35), 42 U.S.C.A. § 9601(35). In addition, § 122 provides for an expedited “de minimis buyout” by innocent owners. *See CERCLA* § 122(g), 42 U.S.C.A. § 9622(g) (the “de minimis” settlement is also available to small quantity, low toxicity generators).

³*See Walls v. Waste Res. Corp.*, 761 F.2d 311, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20438 (6th Cir.

generators or implicated site owners.⁴ Parties that are not directly liable for response costs, such as subcontractors hired to perform a cleanup or subrogees required to reimburse a party for response costs under an insurance policy, have attempted to use CERCLA § 107(a) to recover debts related to a cleanup, generally without success.⁵

In addition to the requirement that a private cost recovery plaintiff's response actions have been "necessary"⁶ and consistent with the NCP,⁷ private cost recovery plaintiffs are less likely to be able to secure a declaratory judgment for future costs than is the government and may not be able to recover as broad a spectrum of pre-response expenditures as the government.⁸ However, a private plaintiff does not have to wait until the entire remedial action is complete before recovering incurred response costs.⁹

CERCLA does not address whether a private cost recovery action may be asserted with respect to a site that is not listed on the NPL. Although there is authority on both sides of the issue, the better argument seems to be that advanced by the Second Circuit in *New York v. Shore Realty Corp.*¹⁰ that the NPL is not a part of the NCP, and the listing prerequisite relates only to the expenditure of federal moneys whether under § 104 or § 112.

Private claimants are limited to monetary remedies under § 107, and thus may not secure ancillary injunctive relief, except pursuant to pendent common law or

1985) (nearby property owners); *Artesian Water Co. v. New Castle County*, 605 F. Supp. 1348, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20577 (D. Del. 1985), *aff'd*, 851 F.2d 643, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21012 (3d Cir. 1988) (polluted wells).

⁴*See* *Bulk Distrib. Ctrs., Inc. v. Monsanto Corp.*, 589 F. Supp. 1437, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20151 (S.D. Fla. 1984).

⁵*See* *Price Trucking Corp. v. Norampac Industries, Inc.*, 748 F.3d 75, 78 Env't. Rep. Cas. (BNA) 1133 (2d Cir. 2014) (subcontractor did not have a right to recovery under CERCLA against landowner where landowner paid general contractor but general contractor failed to pay subcontractor); *Chubb Custom Ins. Co. v. Space Systems/Loral, Inc.*, 710 F.3d 946, 76 Env't. Rep. Cas. (BNA) 1445 (9th Cir. 2013), *cert. denied*, 134 S. Ct. 906, 187 L. Ed. 2d 833, 78 Env't. Rep. Cas. (BNA) 1132 (2014) (subrogee lacked standing to assert claim under CERCLA § 107(a) because it was not itself liable for response costs under CERCLA).

⁶*Reg'l Airport Auth. v. LFG, LLC*, 460 F.3d 697, 36 Env'tl. L. Rep. (Env'tl. L. Inst.) 20166 (6th Cir. 2006) (the costs of a cleanup are not "necessary" when they are no greater than the costs of the work that would have been done if there had not been any contamination); *United States v. Newmont USA, Ltd.*, 504 F. Supp. 2d 1050, 37 Env'tl. L. Rep. (Env'tl. L. Inst.) 20234 (E.D. Wash. 2007) (unnecessary and duplicative sampling may be inconsistent with the NCP).

⁷As discussed above, the burden of demonstrating that costs are consistent with the NCP rests with the plaintiff, as an element of his case, in contrast to the situation in government cost recovery actions, in which inconsistency with the NCP is viewed as a defense that must be raised by the defending parties. Failure to provide for public comment on a proposed CERCLA cleanup can bar claims for recovery of the costs of that cleanup. *See* *Gussin Enters., Inc. v. Rockola*, No. 89 C4742, 1993 WL 114643 (N.D. Ill. Apr. 13, 1993).

⁸*See* *Levin Metals Corp. v. Parr-Richmond Term. Co.*, 608 F. Supp. 1272, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20791 (N.D. Cal. 1985), *rev'd on other grounds*, 799 F.2d 1312 (9th Cir. 1986) (refusing certain investigative costs and holding that the plaintiff must demonstrate that it actually incurred necessary response costs before seeking damages or declaratory relief). *But see* *Foster v. United States*, 922 F. Supp. 663, 26 Env'tl. L. Rep. (Env'tl. L. Inst.) 21336 (D.D.C. 1996) (plaintiff's claim for declaratory relief to fix liability for future costs does not require that plaintiff have incurred recoverable past costs); *Southland Corp. v. Ashland Oil, Inc.*, 696 F. Supp. 994, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20733 (D.N.J. 1988) (allowing purchaser of plant to maintain declaratory judgment action for contribution for future response costs from prior owner that had disposed of substances on site).

⁹*Fallowfield Dev. Corp. v. Strunk*, No. CIV.A. 89-8644, 37 Env'tl. Rep. Cas. (BNA) 1076, 1993 WL 157723, at *29 (E.D. Pa. May 11, 1993), *aff'd*, 96 F.3d 1432 (3d Cir. 1996).

¹⁰*New York v. Shore Realty Corp.*, 759 F.2d 1032, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20358 (2d Cir. 1985).

state statutory authority.¹¹ In addition, the U.S. Supreme Court has ruled that because attorney fees are not “necessary costs of response,” they are not recoverable in a private CERCLA cost recovery or contribution action.¹² The Court gave three reasons for its holding: (1) there is no express reference to recovery of attorneys fees in either § 107 or § 133 of CERCLA; (2) Congress specifically included a provision for recovery of attorney fees in other CERCLA provisions, including the citizen suit provision; and (3) “enforcement action” is not sufficiently explicit to embody a private cost recovery action.¹³ The Court did not, however, prohibit recovery of all attorney fees. Fees paid to an attorney for work “closely tied to the actual cleanup,” such as the costs associated with the identification of other PRPs, were carved out as fees that may be recovered as necessary response costs.¹⁴ Attorney fees specifically not recoverable include fees associated with the negotiation of a consent order and the prosecution of a cost recovery action.

§ 14:145 Liability to the government or private parties for response expenditures and to the Government for natural resource damages—Miscellaneous issues

Several litigation-related issues have arisen under § 107. One potentially important problem under the original statute was the absence of provision for nationwide service of process. This fact limited EPA’s ability to sue some PRPs in several cases, although expansive interpretation of the long-arm statutes of the states in which the sites lie has mitigated the problem somewhat.¹ The defect was cured by an amendment to the statute in 1986.²

CERCLA did not contain a general statute of limitations on actions brought under it, although there was a three-year statute of limitations contained in § 111(d) and another in § 112(d). It has uniformly been held that these statutes of limitations do not apply to § 107 cost recovery suits,³ although there was a split of authority on the applicability of the § 112(d) statute of limitations to lawsuits brought by states seeking natural resource damages.⁴ Section 113(g), added in 1986, took care of this problem by providing separate statutes of limitation for cost recovery actions, con-

¹¹New York v. Shore Realty Corp., 759 F.2d 1032, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20358 (2d Cir. 1985).

¹²Key Tronic Corp. v. United States, 511 U.S. 809, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20955 (1994), on remand, 30 F.3d 1105, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 21282 (9th Cir. 1994).

¹³Key Tronic Corp. v. United States, 511 U.S. 809, 819, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20955, 20957 (1994), on remand, 30 F.3d 1105, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 21282 (9th Cir. 1994).

¹⁴Key Tronic Corp. v. United States, 511 U.S. 809, 819, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20955, 20957 (1994), on remand, 30 F.3d 1105, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 21282 (9th Cir. 1994).

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¹See Violet v. Picillo, 613 F. Supp. 1563, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20331 (D.R.I. 1985) (prohibiting nationwide service of process, but concluding that the long-arm statute reached out-of-state generators who gave their wastes to transporters without participating in the disposal site selection or knowing where the wastes were destined); Wehner v. Syntex Agribusiness, Inc., 616 F. Supp. 27, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20346 (E.D. Mo. 1985); Missouri v. Independent Petrochem. Corp., 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20352 (E.D. Mo. 1986). United States v. Conservation Chemical Co., 619 F. Supp. 162, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20193 (W.D. Mo. 1985) is in accord with Violet v. Picillo, 613 F. Supp. 1563, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20331 (D.R.I. 1985), on the long-arm statute issue.

²CERCLA § 113(e), 42 U.S.C.A. § 9613(e).

³See Kelley v. United States, 23 Env. 1503 (W.D. Mich. 1985); United States v. Mottolo, 605 F. Supp. 898, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20444 (D.N.H. 1985); New York v. Gen. Elec. Co., 592 F. Supp. 291, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20719 (N.D.N.Y. 1984); Colorado v. ASARCO, Inc., 608 F. Supp. 1484, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20523 (D. Colo. 1985).

⁴Compare United States v. Mottolo, 605 F. Supp. 898, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20444

tribution actions, natural resource damages actions,⁵ and several other types of CERCLA premised actions.⁶

Private sector PRPs are frequently involved with sites that were also contributed to by municipal or state entities.⁷ There is limited authority for the proposition that CERCLA preempts state law-premised sovereign immunity for municipalities.⁸ The Supreme Court held in *Pennsylvania v. Union Gas Co.*⁹ that CERCLA, as amended by SARA, clearly expresses an intent to hold states liable to private parties in damages in federal court, and that the Commerce Clause authorized Congress to enact a statute with that effect, notwithstanding the principle of state sovereign immunity found in the Eleventh Amendment. The Supreme Court subsequently overruled the constitutional holding of *Union Gas*, however, in *Seminole Tribe of Florida v. Florida*, concluding that the Eleventh Amendment prevents congressional authorization of suits by private parties against nonconsenting states, even where the Constitution grants Congress complete lawmaking authority over a particular area.¹⁰ The *Seminole* decision calls into question the status of state PRPs at Superfund sites. The decision suggests that state PRPs may be immune from contribution actions brought in federal court under CERCLA by other PRPs.¹¹ Thus, PRPs seeking to bring such actions against state PRPs may be limited to state statutes, where available.

It is generally accepted that defendants in CERCLA cost recovery actions are not entitled to a jury trial.¹² The theory of these cases is that the government's remedy is essentially an equitable one (in the nature of restitution). Arguably, claims for

(D.N.H. 1985) with *Colorado v. ASARCO, Inc.*, 616 F. Supp. 822, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20046 (D. Colo. 1985).

⁵One court has since held that the time limitations in CERCLA § 113(g) do not apply retroactively to actions involving the recovery of response costs under § 107 incurred prior to SARA's enactment. *United States v. Moore*, 763 F. Supp. 455, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21272 (E.D. Va. 1988); see also *Merry v. Westinghouse Elec. Corp.*, 684 F. Supp. 852, 18 Env'tl. L. Rep. 21220 (M.D. Pa. 1988). Another court held that § 113(a)(2)(A) did not begin to run until SARA was enacted. *T&E Indus. v. Safety Light Corp.*, 680 F. Supp. 696, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20926 (D.N.J. 1988).

⁶In general, the limitation period for resource damages is three years from the date of discovery; for removal costs is three years following completion of removal action or six years following a determination under § 104 to waive the removal action limitations in favor of continued response action; for remedial actions is three years from the date of commencement of on-site response action (and, for follow-up collection actions, up to three years following completion of all response actions); and for contribution actions, is three years from the date a judgment or a consent decree is entered in the government's cost recovery action.

⁷Federal facilities, of course, also often turn up on CERCLA generator lists. They are treated essentially as though they were private entities. See CERCLA §§ 107(g), 120, 42 U.S.C.A. §§ 9607(g), 9620; 50 Fed. Reg. 47931 (Nov. 20, 1985); 53 Fed. Reg. 4280 (Feb. 12, 1988).

⁸*Artesian Water Co. v. New Castle County*, 605 F. Supp. 1348, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20577 (D. Del. 1985), aff'd, 851 F.2d 643, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21012 (3d Cir. 1988); see also *United States v. Seymour Recycling Corp.*, 686 F. Supp. 696, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20523 (S.D. Ind. 1988) (no immunity from contribution claims).

⁹*Pennsylvania v. Union Gas Co.*, 491 U.S. 1, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20974 (1989); see also Slavitt, *Jury Trial Rights under CERCLA: The Effects of Tull v. United States*, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 10127 (Apr. 1988).

¹⁰*Seminole Tribe of Fla. v. Florida*, 517 U.S. 44, 116 S. Ct. 1114 (1996).

¹¹See, e.g., *Ninth Ave. Remedial Group v. Allis-Chalmers Corp.*, 962 F. Supp. 131, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 21307 (N.D. Ind. 1997) (granting Indiana's motion to dismiss a CERCLA action brought by PRPs for lack of subject matter jurisdiction on the grounds that the State had not waived its Eleventh Amendment immunity in CERCLA suits by judicial decision, statute, or conduct).

¹²*United States v. Lang*, 870 F. Supp. 722 (E.D. Tex. 1994); *City of Phila. v. Stepan Chem. Co.*, 748 F. Supp. 283, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 20760 (E.D. Pa. 1990); *United States v. Mottolo*, 605 F. Supp. 898, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20444 (D.N.H. 1985); *Missouri v. Indep. Petrochem. Corp.*, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20352 (E.D. Mo. 1986); *Mola Dev. Corp. v. United States*, 15

natural resources damages should not be viewed as equitable, and thus § 107(a)(4)(C) claims should be sent to a jury, if the defendant seeks one.¹³

A number of trial practice issues peculiar to CERCLA cases have arisen. These include issues relating to third party practice¹⁴ and case management, principally whether and on what terms there should be bifurcation of liability and remedy trials, and the appropriate role of a special master.¹⁵

Finally, PRPs and their insurance carriers have continuously litigated the question of insurance coverage under the CGL policy. The issues are whether property damage “occurs” as of the date leaking begins or the date such leaking is discovered,¹⁶ whether CERCLA liability falls within the pollution exclusion (in policies containing such an exclusion), and whether coverage for “sudden occurrences” embraces CERCLA-covered events.¹⁷

§ 14:146 Liability to the government or private parties for response expenditures and to the Government for natural resource damages—CERCLA enforcement

Until adoption of the SARA of 1986, there was little to talk about in terms of regulatory enforcement since the 1980 CERCLA did not have a general penalty scheme.¹ Section 109 was amended by SARA to add general criminal sanctions and an elaborate (if not bizarre) set of civil penalties.

Civil sanctions are available to address violations of § 103, the financial responsibility provisions of § 108, orders issued under the amended § 122, and for failure to carry out the terms of a settlement agreement entered under § 122 or, for federal facilities, § 120 interagency agreements between the facility and EPA providing for remedial action. There are two tiers of penalties, Class I penalties, which ap-

Envtl. L. Rep. (Envtl. L. Inst.) 21029 (C.D. Cal. 1985); *United States v. Ward*, 618 F. Supp. 884, 16 Envtl. L. Rep. (Envtl. L. Inst.) 20358 (E.D.N.C. 1985).

¹³See *United States v. Reilly Tar & Chem. Co.*, 13 Envtl. L. Rep. (Envtl. L. Inst.) 20897 (D. Minn. 1983); *cf. United States v. Wade*, 653 F. Supp. 11 (E.D. Pa. 1984); *compare U.S. v. Viking Resources, Inc.*, 607 F. Supp. 2d 808, 69 Env't. Rep. Cas. (BNA) 1663, 174 O.G.R. 502 (S.D. Tex. 2009) (relying on cases interpreting CERCLA to hold that at least one component of natural resource damages under the OPA was not equitable in nature and ordering entire case to be heard by a jury) *with In re Acushnet River & New Bedford Harbor Proceedings re Alleged PCB Pollution*, 712 F. Supp. 994, 29 Env't. Rep. Cas. (BNA) 1259, 19 Envtl. L. Rep. 21198 (D. Mass. 1989) (holding that natural resource damages under CERCLA § 107(a)(4)(C) are not equitable in nature, but defining such damages narrowly). A similar fate should befall pendent state law damages claims.

¹⁴See, e.g., *Kelley v. United States*, No. G83-630, 23 Env 1500 (W.D. Mich. Sept. 19, 1985).

¹⁵See, e.g., *United States v. Moore*, 703 F. Supp. 460, 18 Envtl. L. Rep. (Envtl. L. Inst.) 21272 (E.D. Va. 1988); *In re Armco, Inc.*, 770 F.2d 103, 15 Envtl. L. Rep. (Envtl. L. Inst.) 20774 (8th Cir. 1985); *United States v. Mottolo*, 23 Env 1293 (D.N.H. 1985).

¹⁶See, e.g., *Mraz v. Canadian Universal Ins. Co.*, 804 F.2d 1325, 17 Envtl. L. Rep. (Envtl. L. Inst.) 20372 (4th Cir. 1986) (holding that the date of an “occurrence” is judged by the date of discovery of environmental contamination).

¹⁷An interesting decision, *Maryland Casualty Co. v. Armco, Inc.*, 643 F. Supp. 430, 17 Envtl. L. Rep. (Envtl. L. Inst.) 20143 (D. Md. 1986), held that an insurer's liability under a CGL policy is only for “damages,” and since CERCLA response costs have been argued successfully by the government to be in the nature of restitution, which is an equitable remedy, they are not damages, and are thus not recoverable. *But see Indep. Petrochem. Corp. v. Aetna Cas. & Sur. Co.*, 944 F.2d 940, 21 Envtl. L. Rep. (Envtl. L. Inst.) 21483 (D.C. Cir. 1991) (holding that “damages” under CGL policies include environmental cleanup costs), cert. denied sub nom. *Certain Underwriters at Lloyd's, London v. Indep. Petrochem. Corp.*, 503 U.S. 1011 (1992). For more detailed discussion of environmental insurance coverage, see § 14:158.

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¹The original statute provided sanctions for violating § 106(a) orders and for submitting false information under § 103.

ply per *violation*, and Class II penalties, which apply per violation *per day*. What is bizarre about this scheme is that there are different administrative procedures and different appeal rights (to different courts) depending upon which class of penalty the Agency assesses.²

SARA also increased the penalties associated with criminal violations of §§ 103(b), 103(c) and 112(b), and added a bounty provision.³

§ 14:147 Liability to the government or private parties for response expenditures and to the Government for natural resource damages—Citizen enforcement

The SARA amendments inserted a limited citizen suit into CERCLA,¹ and provide for citizen petitions seeking preliminary site assessments,² along with a limited grant funding for technical assistance to local groups who are affected by a release or threatened release from a facility.³

The citizen suit provision allows a lawsuit to be brought in federal district court against any person (other than EPA or the ATSDR) who is alleged to be in violation “of any standard, regulation, condition, requirement, or order which has become effective” under CERCLA, including interagency agreements affecting federal facilities.⁴ As a practical matter, citizen suits appear to be limited to enforcement of executed settlement agreements and § 106(a) orders. States appear to have slightly broader rights to sue in federal court.⁵

Suits against EPA and the ATSDR are only available to compel performance of a nondiscretionary duty,⁶ and the general ban on preenforcement review has been found applicable.⁷

VII. SARA TITLE III—THE EMERGENCY PLANNING AND COMMUNITY

²CERCLA § 109(a)-(c), 42 U.S.C.A. § 9609(a)-(c). Class I penalties must be calculated pursuant to a relatively rigid penalty formula, while Class II penalties are apparently not bound by it. EPA’s Civil Monetary Penalty Inflation Adjustment Rules increased the maximum penalty amount available under CERCLA § 109(a)-(c). 40 C.F.R. § 19.4. The Environmental Appeals Board holds delegated authority from EPA to hear and decide appeals of administrative penalties under §§ 109 and 325. 57 Fed. Reg. 5320 (Feb. 13, 1992). The Board may also hear permit appeals, and its procedural rules related to such appeals were revised effective March 26, 2013. 78 Fed. Reg. 5281 (Jan. 25, 2013).

³CERCLA § 109(d), 42 U.S.C.A. § 9609(d); 53 Fed. Reg. 16086 (May 5, 1988); 53 Fed. Reg. 23394 (June 22, 1988). The bounty is \$10,000 for information leading to the arrest and conviction of someone for criminal violations of CERCLA.

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¹See Breen, *Citizen Suits for Natural Resource Damages: Closing a Gap in Federal Environmental Law*, 24 Wake Forest L. Rev. 851 (1989) (recommending citizen suit provisions for recovery for natural resource damages).

²Citizen initiatives for preliminary assessment are provided for by CERCLA § 105(d), 42 U.S.C.A. § 9605(d).

³See 53 Fed. Reg. 9736 (Mar. 24, 1988).

⁴CERCLA § 310(a)(1)-(2), 42 U.S.C.A. § 9659(a)(1)-(2). The usual prior notice and other bar provisions common to federal environmental citizen suits are applicable. In one of the first cases to examine the scope of § 310, the court held that the section does not give private citizens a right to recover cleanup costs. *Regan v. Cherry Corp.*, 706 F. Supp. 145 (D.R.I. 1989).

⁵See CERCLA § 121(e)(2), 42 U.S.C.A. § 9621(e)(2).

⁶CERCLA § 310(b)(2), 42 U.S.C.A. § 9621(b)(2).

⁷See *Neighborhood Toxic Cleanup Emergency v. Reilly*, 716 F. Supp. 828 (D.N.J. 1989) (holding that Congress intended to preclude review of a site remedy until at least part of the cleanup is completed); *Cf. Cabot Corp. v. EPA*, 677 F. Supp. 823, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20835 (E.D. Pa. 1988) (mere development of a remedial plan by EPA may be enough to trigger judicial review).

RIGHT-TO-KNOW ACT***§ 14:148 Introduction**

Title III of the 1986 SARA, also known by its somewhat unwieldy but official designation, the Emergency Planning and Community Right-to-Know Act (EPCRA),¹ is the federal response to the 1984 Bhopal, India, chemical disaster in which an accidental release of methyl isocyanate from a Union Carbide pesticide manufacturing plant killed several thousand people. A release of aldicarb oxime a short time later from a facility in Institute, West Virginia, demonstrated that the United States was not immune to a Bhopal-like disaster, and was unprepared to meet one.

Tucked away in SARA as a freestanding statute (not as an amendment to the Superfund law), Title III was almost completely overshadowed by the protracted battle over the reauthorization of CERCLA that year.² Since that time the law has assumed a higher profile, even though it does not actually regulate the use or disposal of hazardous chemicals.

The reason for Title III's increased visibility is twofold. First, state and local officials, as well as members of the public, have become actively involved in chemical emergency response and accident prevention. This greater level of responsibility and awareness has tended to increase the local importance and visibility of these issues. Second, the law's more influential right-to-know provisions have made detailed information about the chemicals present in local communities generally available. As a result, the chemical handling and disposal practices of industry are now laid out for public scrutiny.

This second factor is significant because of the leveraging effect of public opinion: companies are becoming increasingly aware that their images as toxic polluters can be public relations impediments in an era of heightened sensitivity to environmental issues.³ A company's reputation can be a greater incentive toward improved environmental practices than is a mere set of technical regulations. The Monsanto

*By **John P.C. Fogarty**. The author wishes to acknowledge the assistance of **Jon J. Jacobs**, **Cindy Fournier**, **Rhonda Norton**, and **Barbara Reilly**, all with the Toxics and Pesticides Enforcement Division of EPA's Office of Regulatory Enforcement, and **Kim Orr** and **Mary Hanley** with the Information Management Division of EPA's Office of Pollution Prevention and Toxics, in preparing some of the updates to this section. The views expressed here are not necessarily those of the Environmental Protection Agency.

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¹SARA, Pub. L. No. 99-499, tit. III, 100 Stat. 1729 (1986) (codified at 42 U.S.C.A. §§ 11001 to 11050).

²The Senate's version of what was to become Title III would have amended CERCLA, 42 U.S.C.A. §§ 9601 to 9675, but the House's version would have established the emergency planning and right-to-know program as a freestanding statute. H.R. Conf. Rep. No. 962, 99th Cong., 2d Sess. 281 (1986). The Conference Report does not explain why it was considered preferable to create a new law rather than to merely amend CERCLA. The distinction is largely academic, because most of the law is implemented on the federal level by the same office that is responsible for Superfund. However, there are some obvious gaps in Title III that would not have been present had it been part of CERCLA. The authority to inspect covered facilities is an example. *See* § 14:152. In general, the Conference Report is a poor indicator of the intent behind the ultimate choices shaping Title III and is not a particularly illuminating document; it does little more than recite the House and Senate amendments and describe the conference substitutes.

³One part of Title III, the § 313 Toxic Chemical Release Inventory program, documents the controlled and uncontrolled dumping of toxic chemicals from plant sites into surrounding neighborhoods (*i.e.*, releases directly into the surrounding environment). Concern, even outrage, by the surrounding community is a natural result and undoubtedly fuels the "NIMBY" (Not In My Back Yard) syndrome. *See* Steinzor & Smith, *The Toxic Combat Zone*, *Envtl. F.*, July/Aug. 1988, at 5. As neighborhoods and others have fought against development, chemical plants, and other industrial intrusions into residential areas, a slew of jargon has been concocted to describe the anti-development sentiments. In addition to NIMBY, commonplace terms now include NIMFYE (Not In My Front Yard Either), PITBY (Put It In

Corporation, for example, pledged a voluntary 90 percent reduction in emissions of toxic pollutants from its facilities worldwide as a result of the publication of its Title III Toxic Chemical Release Inventory reports in 1988.⁴

An additional impact of Title III is not immediately obvious, and may have been unintentional since it is nowhere noted in the legislative history. The law's requirements for an annual cataloging of the amounts of chemicals present at, used at, and emitted from facilities effectively force companies to conduct rudimentary environmental audits. A well-constructed environmental auditing program provides an array of economic and other benefits,⁵ and many forward-looking companies had already implemented environmental management programs prior to Title III's enactment. To the extent that an audit identifies and targets for correction a company's wasteful practices, it provides economic as well as incidental environmental benefits.⁶ Title III should act as a catalyst for companies that have not yet done so to establish formal auditing programs.

Title III represented a fundamental change in this country's approach to toxic and hazardous chemicals. The law operates not by adding to the labyrinth of regulations, but by attempting to alter the traditional regulatory equation. The public—on which EPA had traditionally relied for support—had never really been involved in the difficult job of environmental protection in any significant and ordered way; citizen participation in environmental policy and decisionmaking had been limited largely to lobbying and litigation. Title III attempted to change this dynamic. By arming communities with the information and the authority they needed to improve chemical safety, the law forces a dialogue among federal and state regulators, local communities that had often been complacent about the chemical hazards in their neighborhoods, and “the industries who place them at risk.”⁷ Title III was the first major federal program to systematically involve all three communities affected by

Their Back Yard), BANANA (Build Absolutely Nothing Anywhere Near Anybody), LULU (Locally Unpopular Land Use), and NOPE (Not On Planet Earth). Currently unused and unsightly industrial areas are referred to as TOADS (Temporarily Obsolete Abandoned Derelict Site). And, quite naturally, the jargon has apparently influenced the political strategies of elected officials: NIMEY (Not In My Election Year) and NIMTOO (Not In My Term Of Office).

⁴Monsanto has acted aggressively to deal with the potentially harmful adverse public reaction to its release of chemical hazard information. As was expected, some Monsanto facilities reported very high release numbers; one Monsanto facility in Texas released about 175 million pounds of toxic chemicals into the environment (seventh highest in the nation), which was by itself more than the total released by all facilities in 23 states. See EPA, *The Toxics-Release Inventory: A National Perspective* 70 (1989); Wildlife Federation Says Alcoa No. 1 Polluter of Top 500, *Right-to-Know Planning Guide*, Aug. 17, 1989, at 4, col. 2. Although the company's focused public relations efforts began shortly after the Bhopal incident, anticipation of the wide dissemination of toxic pollutant information under the § 313 program prompted the pledge, which was issued on the eve of the first § 313 deadline. See *Monsanto Announces Program to Reduce Air Emissions by 90 Percent*, *Monsanto General Bulletin* No. 626, June 30, 1988. For a description of the Toxic Release Inventory program, see § 14:159.

⁵See § 8:37 (environmental auditing).

⁶An environmental audit may reveal, for example, that large quantities of a chemical that is used as a solvent are being lost. This means higher operating costs from the purchase or production of additional solvent, in addition to the payment of increased, but avoidable, waste disposal costs. Tightened facility practices or installment of solvent recovery equipment will in the long run reduce costs by reducing the amount purchased and wasted. Waste reduction efforts are both cost effective and environmentally beneficial. See generally Ch. 8 (environmental audits); F. Friedman, *Practical Guide to Environmental Management* (1988) (Monograph of the Environmental Law Institute—expands on program outlined in Ch. 8 of this treatise).

⁷Millar, *The Beginnings of Chemical Control*, *Envtl. Forum*, Oct./Nov. 1988, at 26, 32. Union and community activists, using data from § 313 reports, see § 14:159, made a company's use of methylene chloride a bargaining chip in contract negotiations, and won a pledge from the company to reduce its emissions 90 percent by 1993. Reportedly, the union had attempted to put the issue on the table for eight years prior to the company's concession, and what finally turned the tide in favor of the union and the community was TRI data showing that the company was one of the largest emitters of the

environmental regulations: the regulators, the regulated, and those who must ultimately shoulder both the benefits and the burdens of regulatory decisions—the public.

§ 14:149 Overview and structure of Title III

Title III has four principal components: emergency planning for accidents (§§ 301 to 303), hazardous spill notification (§ 304), regular disclosure of chemical inventories (§§ 311 to 312), and disclosure of annual toxic emissions (§ 313). The first two components are the backbone of the statute's emergency response system, and the latter two are the cornerstones of its right-to-know program.

Section 301 establishes state and local committees whose purpose is to develop and implement chemical emergency response plans for their local areas using information collected primarily under §§ 302 and 303. Section 302 obligates facilities handling one or more specifically listed “extremely hazardous substances”¹ above designated “threshold quantities” to notify these planners that these substances are present at their sites. The local committees use this information to identify the core facilities around which they must plan. Committees may supplement this bare notice information by using their § 303 authority to request additional specific information about the facilities and the chemicals present there.

An emergency response under a local plan may be triggered by receipt of a § 304 notice. Section 304 obligates facilities to notify designated local response authorities immediately in the event of a spill or release of a CERCLA “hazardous substance” or an “extremely hazardous substance.”² The universes of facilities covered by the notification requirements of §§ 302 and 304 overlap, but are not identical. This is because a § 302 planning notification is required only for those “extremely hazardous substances” listed under the authority of that section, while a § 304 spill or release notification is required for a broader range of chemicals, including all § 302 listed chemicals and CERCLA hazardous substances. In addition, the amount of a substance that requires a § 304 notification because it is *released* from a facility is generally less than the amount of the same substance that requires a § 302 planning notification merely because it is *present* at a facility. Therefore, more facilities are subject to Title III's emergency notification provisions than to its planning provisions. This is but one example of how the community affected by Title III's various reporting sections shifts according to each section's objectives.

Sections 311 and 312, part of the right-to-know segment of Title III, actually serve dual purposes. First, they give emergency planners and responders detailed information concerning the amount, location, and hazards of chemicals present at facilities. These data supplement the information obtained under §§ 302 and 303,

chemical in the country. Pesticide & Toxic Chem. News, vol. 18, no. 37, at 12 (July 18, 1990).

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¹These are listed at 40 C.F.R. Part 355, apps. A & B. Substances are added and deleted periodically. See 53 Fed. Reg. 7757 (Mar. 10, 1988) (adding substances); 53 Fed. Reg. 13382, 13389 (Apr. 22, 1988) (deleting substances).

²The § 304 requirement applies to any facility that has a “hazardous chemical,” a “hazardous substance,” or an “extremely hazardous substance.” However, such a facility need only report a release of a “hazardous substance” or an “extremely hazardous substance.” “Hazardous chemicals” is a broader category; all “hazardous substances” and “extremely hazardous substances” are “hazardous chemicals,” but the converse is not true. A “hazardous chemical” is one that is so defined by its characteristics under the OSHA Hazard Communication Standard, 29 C.F.R. § 1910.1200(c); a “hazardous substance” is one that is defined and listed under CERCLA § 101(14), 42 U.S.C.A. § 9601(14); an “extremely hazardous substance” is one that is defined and listed under EPCRA § 302(a), 42 U.S.C.A. § 11002(a). See 40 C.F.R. § 355.61 (definitions for emergency planning and notification).

thereby theoretically enhancing response capabilities.³ Second, wide dissemination within the community and the state of information obtained under §§ 311 and 312 is essential to achievement of the law's right-to-know objective. The universes of facilities covered by these sections once again overlap, but are not identical to, those covered by §§ 302 to 304: §§ 311 and 312 potentially apply to all facilities covered by the Occupational Safety and Health Act of 1970 (OSHA) Hazard Communication Standard (HCS).

The § 313 Toxic Chemical Release Inventory (TRI) primarily serves the law's right-to-know ends, and is related only tangentially to its emergency planning objective. The TRI is designed as an annual catalog of the specific use and disposal pathways of certain listed toxic chemicals at individual facilities. Only partially overlapping the communities covered by the balance of Title III, the § 313 population is limited to the country's industrial manufacturing sector. TRI data are expected to provide a more accurate understanding of toxics use in this country, and because a computer database of TRI information has been developed and made available to the public via telecommunication, TRI data are the most broadly disseminated of all information gathered under Title III.⁴

The four parts of Title III are distinct, but not entirely discrete. Each serves its own unique purpose, but all are interdependent. As best evidenced by §§ 311 and 312, the planning and right-to-know goals of the law are complementary and work in tandem.

The multiple purposes served by the law mean that not all facilities or chemicals are treated equally. Different provisions of Title III use different jurisdictional "triggers" for obligating facility action. The determination of whether a facility must file reports with federal, state, or local officials, and what information it must provide, is dependent upon the specifications of the reporting requirement in question. A facility may be covered by §§ 311 or 312, for example, and therefore need to file chemical inventory reports with various state and local authorities. At the same time, it may not be covered by § 313, and therefore not be required to file reports on its annual chemical emissions with a different set of state and federal authorities. Similarly, a chemical may be simultaneously subject to one or several reporting requirements because it exhibits certain hazardous characteristics or appears on one or more of a variety of chemical lists and is present at a facility in an amount above one or more defined threshold quantities.

Consequently, it is not safe for a facility to assume that just because it is not required to file a report under one part of the law, it is also not subject to another part. To ensure compliance and to avoid the sometimes heavy fines for failing to file Title III chemical information reports, it is incumbent upon the facility manager or appropriate company official to check the specific requirements of every reporting

³Emergency response capabilities are only theoretically enhanced by this information because those who must respond to chemical emergencies have found the sheer volume of paper generated by these two sections essentially unusable. *See, e.g.,* Right-to-Know Laws Burden Fire Departments, Right-to-Know Planning Guide, Apr. 13, 1989, at 4; *see also* Fire and Explosion in Kansas City, Second Report by the Committee on Government Operations, H.R. Rep. No. 124, 101st Cong., 1st Sess. (1989). One state's response to the paper morass is a pilot project to create a single manual providing information on the proper neutralization of specific chemicals, the location of industry response equipment to supplement that of emergency responders, and other information. Connecticut Businesses Assume Greater Role in Emergency Planning and Response, Community and Worker Right-to-Know News, vol. 4, no. 7, at 6 (Jan. 26, 1990). The Connecticut effort is a good example of how Title III has fostered a dialogue between industry and their neighbors on topics of mutual concern, resulting in greater benefits than regulation alone would provide.

⁴*See* EPA, Toxics Release Inventory (TRI) Program, <http://www2.epa.gov/toxics-release-inventory-tri-program>.

section.⁵

The questions of who must report, what must be reported, and when and to whom the various reports must be submitted are discussed in detail in § 14:153.

§ 14:150 Emergency planning and preparedness—Development of emergency response plans

Title III provides a mechanism for state and local authorities to construct and implement strategies to deal adequately with chemical accidents or emergencies. Industry and government representatives are expected to work very nearly hand-in-glove to design these emergency plans. Industry must routinely and periodically give state and local officials (as well as the general public) detailed information on the amount, location, and hazards of chemicals present at covered facilities. An amalgam of local industry representatives, government officials, and citizens' groups then use this information to develop the community's local response plan.¹

Several layers of planning organizations are set up to create what amounts to an emergency response system for the nation. Section 301 requires each state (including the District of Columbia, Indian tribes, and the several territories) to establish a central State Emergency Response Commission (SERC), appointed by the governor, to administer its Title III program overall. The SERC must designate one or more "emergency planning districts" within the state and must perform other organizational tasks. The SERC appoints a local emergency planning committee (LEPC) for each planning district to develop the district's emergency response plan.² The SERC is intended to oversee and coordinate the LEPCs within the state,³ while the LEPC is intended to serve as the primary point of contact for the local community and the regulated facilities within its district.

Besides the emergency planning function, LEPCs and SERCs also serve important right-to-know functions by making the emergency plans as well as the various

⁵See, e.g., *In re Murry's, Inc.*, No. EPCRA-III-001 (complaint filed Dec. 1, 1988) (seeking \$25,000 for multiple violations of Title III); *In re Riverside Furniture Corp.*, No. EPCRA 88-H-VI-4065 (Sept. 28, 1989) (\$75,000 penalty for violation of § 313). However, Title III, except for § 304, does not apply to transportation or to storage incident to transportation. EPCRA § 327, 42 U.S.C.A. § 11047.

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¹EPCRA §§ 301 to 303, 42 U.S.C.A. §§ 11001 to 11003 (establishing and defining membership of state emergency response commissions and local emergency planning committees).

²Section 301 directs each SERC to designate appropriate emergency planning districts within the state and to establish an LEPC for each district. These planning districts may or may not be formed along city, county, or other traditional jurisdictional lines. While a few states have designated the entire state as the relevant planning district, most states have established planning districts according to traditional municipal boundaries (cities, counties, and so on). A state is not strictly limited to responding to and planning for only those chemical emergencies that are entirely within the state. Because a chemical emergency may not be contained entirely within the political borders of a single state, emergency planning districts are permitted to cross state lines, if this is necessary for adequate planning and response. For example, if the boundaries of a facility cross state lines so that it is partially located in two states, the SERCs of the affected states may agree to designate a single district that encompasses the facility as a whole.

³The SERC is appointed by the governor and is expected to be composed of emergency response professionals. EPCRA § 301(a), 42 U.S.C.A. § 11001(a) (SERC may be "one or more existing emergency response organizations," and persons appointed should have "technical expertise in the emergency response field"). LEPC membership is intended to be a representative cross-section of the relevant community and emergency response professionals, to include elected and law enforcement officials; health and first aid, environmental, and firefighting personnel; industry representatives; and members of the media. EPCRA § 301(c), 42 U.S.C.A. § 11001(c). The LEPC is responsible for actually developing the emergency plan for its district, and input from the groups that will be involved in responding to a chemical emergency is needed for creation of a realistic and workable plan. The SERC, on the other hand, is more of an oversight body, intended to provide supervisory assistance on a statewide basis.

chemical reports received from facilities available to the general public.⁴

Facilities are subject to Title III's emergency planning provisions if they have one or more extremely hazardous substances (EHSs) on site above a designated threshold planning quantity (TPQ). Section 302 requires these facilities to identify themselves to the state's planning authorities. The governor or SERC may also specially designate a facility for participation in emergency response planning, even though it would not otherwise be covered under § 302.⁵

Under § 303(a), each LEPC must prepare a comprehensive emergency response plan for the area within its jurisdiction, giving special consideration to facilities at which EHSs are present.⁶ Facilities subject to these plans are expected to participate in their development; § 303(d)(1) requires that a facility designate a "facility emergency coordinator" for this purpose. Section 303 also provides a mechanism for an LEPC to gather additional data about a facility in order to develop its plan.⁷

To ensure that each emergency plan is appropriate for its district, the statute specifies that each LEPC be made up of a representative cross-section of its community, including local elected leaders; law enforcement officials; health, environmental, and firefighting personnel; industry representatives; and members of the media.⁸ Clearly, in order to create a workable and realistic emergency plan, those who are actually involved in responding to an emergency must be part of the planning process.

Plans are supposed to be uniquely developed for each planning district. Accordingly, EPA has resisted developing a "model" or "fill in the blanks" plan for committees to follow; this is probably prudent because of the temptation to merely create a paper plan without regard to a community's actual needs or abilities. EPA has, however, provided examples of successful planning programs and practices expected to be transferable to other programs in similar communities.⁹

At a minimum, the response plan must consider the likely or probable emergencies that the community may face, and it should define in some detail the procedures the community will follow in any such situation. A minimally adequate plan will detail how particular chemical emergencies will be addressed and how and when areas are to be evacuated; specifically identify and coordinate the response and medical personnel needed for anticipated emergencies at various facilities; identify the equipment necessary to respond properly to different situations; and specify and provide for the training of emergency responders.¹⁰

In the event of a spill or release of a hazardous chemical or substance, § 304 (along with other authorities) requires that the facility provide an "emergency release notification" to various state and local officials. These officials are intended to work together to determine an appropriate response, ideally in accordance with the plan that has been developed for the facility's district.

A source of difficulty with the § 304 emergency notification provision is that it borrows from and builds on other environmental and right-to-know laws. Because a number of different legal authorities must be consulted to determine whether a

⁴EPCRA § 324, 42 U.S.C.A. § 11044.

⁵EPCRA § 302(b)(2), 42 U.S.C.A. § 11002(b)(2) (also requiring notice and comment of the intent to include the facility).

⁶EPCRA § 303(c)(1), 42 U.S.C.A. § 11003(c)(1).

⁷These reports, under § 303(d)(2)-(3), 42 U.S.C.A. § 11003(d)(2)-(3), are discussed in § 14:155.

⁸EPCRA § 301(c), 42 U.S.C.A. § 11001(c).

⁹See, e.g., EPA, Office of Solid Waste and Emergency Response, *Successful Practices in Title III Implementation* (Jan. 1989) (Technical Assistance Bulletin 6, No. 1, Chemical Emergency Preparedness and Prevention). EPA's Regional Response Teams will also provide optional reviews of plans.

¹⁰EPCRA § 303(c), 42 U.S.C.A. § 11003(c).

notification is required, it is often not immediately clear that a notification must be given. What constitutes a “release” and a “hazardous substance,” as well as several exceptions to each, are determined by reference to CERCLA.¹¹ “Extremely hazardous substances,” however, are defined under Title III.¹² In many important respects the § 304 notice parallels the spill notice requirement of CERCLA § 103, and notification is almost always required under both laws.¹³ Because these notices must be given immediately upon occurrence of the release, it is not practical or possible to both respond to the emergency and sift through the regulations to determine what must be reported to whom.¹⁴ Consequently, a facility must undertake comprehensive advance planning for a spill that could result in a chemical emergency; this was probably intended, but the law does not specifically require it.¹⁵

Significantly, the federal role in emergency planning and response is intentionally limited; the federal view is that states must take the lead in emergency planning. EPA and the Federal Emergency Management Agency, under the authority of § 305(a), generally provide only technical training and monetary support, and on the whole have maintained a low profile at the state level.¹⁶

Some states have been critical of this approach, calling for a much increased federal presence in the overall administration of this federally mandated program.¹⁷ One of the commonly cited problems is that direct federal input almost never reaches the local level because EPA, under an internal agreement known as the “Delta Accord,”¹⁸ prefers to work through the SERCs, which are viewed as the central organizations for all Title III operations. This approach is at least consistent with

¹¹EPCRA § 304(a), 42 U.S.C.A. § 11004(a); 40 C.F.R. § 355.40(a). Both the statute and the regulation cite and rely on CERCLA definitions, particularly CERCLA §§ 101(22), 103, and 40 C.F.R. Part 302. Several exemptions from filing a § 304 notification are also defined by reference to CERCLA; *see* EPCRA § 304(a)(2), (4), 42 U.S.C.A. § 11004(a)(2), (4); 40 C.F.R. § 355.40(a)(2), (b)(4). Additionally, applicability of the EPCRA § 304 requirement at all is dependent on the OSHA HCS. *See* 40 C.F.R. § 355.40(a)(1).

¹²EPCRA § 304(a), 42 U.S.C.A. § 11004(a); 40 C.F.R. § 355.40(a)(1)(ii) (requiring reporting of EHSs designated under EPCRA § 302(a)). The list of EHSs is found at 40 C.F.R. Part 355, apps. A & B.

¹³*See* § 14:156. The extensive overlap of substances covered by both the CERCLA and Title III spill notifications means that most violations of § 304 are also violations of CERCLA § 103. *See, e.g.,* In re All Regions Chemical Labs, Inc., No. CERCLA-I-88-1089 (complaint filed Sept. 30, 1988). But the two are distinct and independent; the provision of one notice does not discharge the obligation for the other.

¹⁴EPA regulations attempt to clarify this matter by presenting a table providing notification instructions. 73 Fed. Reg. 65452, 65466 (Nov. 3, 2008) (codified at 40 C.F.R. § 355.60).

¹⁵As Title III explicitly requires communities to specially plan for the dangerous chemicals located at local facilities, the law indirectly requires the facilities to plan and act more responsibly. In order to comply with EPCRA's multiple reporting requirements, facilities are essentially required to draw up their own emergency response plans, although the law does not mandate these plans or define their content. This contrasts markedly with the traditional prescriptive approach of most federal environmental laws, such as the requirement in 40 C.F.R. Part 112 that facilities develop oil SPCC plans.

¹⁶Both the statute and EPA policy provide the basis for this low profile. Under EPCRA § 305(a), 42 U.S.C.A. § 11005(a), FEMA has distributed \$5 million to the states for Title III training and education programs, and has provided funding for and participated in reviewing various state proposals in connection with Title III implementation. Under § 305(b), EPA has reviewed the states' “emergency systems” and reported its findings to Congress. *See* EPA Office of Solid Waste and Emergency Response, Review of Emergency Systems: Report to Congress (June 1988). The statute requires no more in the way of an active federal role for implementation of Title III at the state level. EPA policy has also reinforced its inclination to play a supporting role.

¹⁷*See* Berkowitz, The Law and the Promise, *Env'tl. Forum*, Sept./Oct. 1988, at 24, 28.

¹⁸The “Delta Accord,” so named because it first took shape aboard a Delta Air Lines flight, is an agreement between the Office of Toxic Substances and the Office of Solid Waste and Emergency Response, the two EPA offices responsible for implementing EPCRA. The Accord has three major tenets: first, that local action is the basis for all of Title III; second, that state coordination of Title III's

the statute's structure, as it is the SERCs, not the federal government, that are primarily responsible for managing the LEPCs. These lines of communication have not always proven to be effective or reliable, however.¹⁹

Nonetheless, local primacy in planning is probably most appropriate because the state and local authorities will be the first to respond to an emergency. A realistic response plan is one that is uniquely tailored to the community's needs, and that adequately reflects local conditions and capabilities. State and local agencies are in the best position to determine the appropriate response action for a community, based on the situation presented there.

§ 14:151 Emergency planning and preparedness—The role of Right-To-Know in emergency planning

As noted previously, §§ 311, 312, and 313 serve dual purposes. In general, they provide for the wide public dissemination of data concerning the identity, amounts, hazards, and disposal of chemicals present in a community, as well as related information. In addition, information provided under the authority of these sections, particularly §§ 311 and 312, augments and supplements emergency response.¹

Reporting under §§ 311 and 312 is triggered if a facility is covered by OSHA HCS requirements: anyone who must prepare and maintain a Material Safety Data Sheet (MSDS) at a facility must provide copies of the MSDS or a list of all hazardous chemicals present at the facility to local planning and response officials.² An MSDS provides information on the hazards associated with the chemical and on how it should be handled in an emergency. Section 312 reports provide additional specific information on the amount and location of chemicals within the facility.

MSDSs and § 312 reports provide detailed chemical-specific information on the facilities in an LEPC's district. Besides identifying the chemicals present at each facility, MSDSs contain instructions on how to contain spills or fires involving these chemicals. MSDSs also provide information that will more quickly enable health professionals to diagnose and treat those exposed to chemicals. Section 312 data further facilitate emergency responses by specifying how much of a chemical is at a facility at any given time, and where it is located. By knowing ahead of time what substances are involved, in what amounts, and where, fire departments can respond more intelligently to an emergency at the facility. LEPCs should also find this information useful in designing overall response plans.

Section 313 is focused more intently on Title III's right-to-know ends. It is intended to collect information concerning the manufacturing sector's actual uses and disposal pathways of over 300 toxic chemicals. As an inventory, it bears more than a passing resemblance to that required by the Toxic Substances Control Act (TSCA) program,³ but it moves beyond the parameters of the original federal toxics control law. Never before has such extensive, facility-specific information been made generally available. The § 313 program identifies precisely who manufactures, uses, and processes toxic chemicals in the United States, and in what amounts. It provides much additional information, such as data about the waste management practices of covered facilities and specific data on the various disposal routes (direct discharges

mandates is essential to its success; and third, that successful future regulatory initiatives will be driven by locally generated sentiment.

¹⁹*See, e.g.*, H.R. Rep. No. 124, 101st Cong., 1st Sess. (1989).

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¹Sections 311 to 313 are discussed in detail in §§ 14:157 to 14:159.

²EPCRA §§ 311(a), 312(a), 42 U.S.C.A. §§ 11021(a), 11022(a); 73 Fed. Reg. 65452 (Nov. 3, 2008).

³TSCA § 8(b), 15 U.S.C.A. § 2607(b) (TSCA inventory); *see* Stever, *Law of Chemical Regulation and Hazardous Waste*.

to the environment, disposal via landfills and publicly owned water treatment works, and so on). Local planning and response officials should be able to use these data both to cross-check data submitted under other sections⁴ and to further supplement emergency plans by, for example, identifying how a chemical is used at a facility (if this information is not already obtained under § 303).

§ 14:152 Emergency planning and preparedness—Chemical safety audits

A major emergency preparedness initiative, although it lacks explicit statutory authority, is EPA's program for "voluntary" chemical safety audits of facilities. Safety audits are part of a larger Agency effort to enhance chemical accident prevention among the regulated community. This effort stands in contrast to the overall thrust of Title III, which is response to accidents after the fact.

EPA may target a facility for a chemical safety audit following a release of more than a reportable quantity of a CERCLA hazardous substance.¹ The audit is conducted preferably with the consent of the facility, and is designed to identify practices, designs, and equipment that may contribute to a future release. A completed inspection report includes suggestions for alternatives and other measures that a facility might take to reduce the likelihood of a chemical emergency. Although a safety audit provides a benefit for an audited facility, it is as much intended to identify for EPA the likelihood or threat of a future hazardous substance release.²

Chemical safety audits are an outgrowth of the Title III program. Section 305(b) required EPA to review "emergency systems" for detecting and preventing releases of EHSs from domestic facilities and to report its findings to Congress. Seven facilities were inspected as part of this review, and the Agency's final report recommended further studies into the causes of chemical accidents and ways to prevent them.³ The safety audit program is EPA's formal follow-up to this recommendation.

EPA's legal authority to conduct such inspections is debatable, however. Title III contains no explicit grant of authority permitting EPA access to a site to conduct an inspection, or even to gather general information about or from a covered facility.⁴ The Agency has sought to address this problem by first seeking to obtain a facility's

⁴Several data elements are repeated across the various reporting sections, such as the specific chemicals (for example, EHSs and various hazardous chemicals reportable under § 311 are also reportable as toxic chemicals under § 313), and the amount on site (reportable under both § 312 and § 313). LEPCs can cross-check these data to confirm their accuracy or to indicate changes at a facility about which the LEPC was not informed under § 303. In addition, reporting under one section may indicate that reporting under another is required; for example, a facility reporting under § 313 should also have provided MSDSs and Tier I or Tier II reports to the LEPC and SERC.

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¹A notification of such a release must therefore be provided in accordance with CERCLA § 103(a), 42 U.S.C.A. § 9603(a).

²It is this aspect of the program that gives EPA the apparent authority on which it relies to conduct these safety audits. Under CERCLA § 104(b), 42 U.S.C.A. § 9604(b), EPA has authority to "undertake such investigations, monitoring, surveys, and other information gathering" as it deems necessary to determine the extent or threat of a release. CERCLA § 104(e), 42 U.S.C.A. § 9604(e), further permits access to the facility site, and to other information located at the facility, to determine the extent and nature of the release or threat.

³EPA Office of Solid Waste and Emergency Response, Review of Emergency Systems: Report to Congress iv, A 9-1 to A 9-9 (June 1988).

⁴Neither EPA nor the states are explicitly given the authority to conduct inspections to determine compliance with EPCRA. As a result, most inspections have been either consensual or combined with inspections under other authorities, such as TSCA. See *EPA v. Alyeska Pipeline Serv. Co.*, 836 F.2d 443, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20491 (9th Cir. 1988) (EPA has broad authority to inspect facilities for all aspects of chemical use under TSCA). EPA has explored options of basing an inspection right on

consent for a chemical safety audit. It has further asserted that an audit is conducted under CERCLA authority,⁵ despite the program's roots in Title III and even though audit results are shared with SERCs and LEPCs. This solution solves the right of entry and information access concerns, but breeds new problems. As a CERCLA-based action the safety audit is technically a CERCLA § 104 response, which means that its costs are theoretically recoverable from the facility under CERCLA § 107. Although EPA prefers to carry out an audit with a facility's permission and has not sought recovery of audit costs, a facility's refusal to grant access for one of these "consensual" inspections under CERCLA would be expected to force the issue of whether the audits are truly voluntary.⁶

Related to the audit initiative is the Agency's Accidental Release Information Program (ARIP), instituted in 1987. ARIP is intended to establish a national database that details the causes and circumstances of chemical accidents, as well as the actions taken by facilities following accidents. This database is intended to fill some significant information gaps on this topic, and is expected to give the Agency a better understanding of both chemical accidents and industry accident prevention practices.

The ARIP program differs from the chemical safety audit program in that it is primarily an information gathering exercise (although the audit program can also trace its roots to this effort). As under the safety audit program, a facility may be targeted for an ARIP questionnaire if it reports to the National Response Center a release of a hazardous substance in excess of its reportable quantity. A facility should anticipate receiving a questionnaire if it has experienced four or more hazardous substance releases within the last twelve months, or if it reports an extremely large release (of several orders of magnitude above the reportable quantity for the chemical), or if a release has resulted in death or injury. The questionnaire seeks to collect detailed information about the release, including what types of release prevention measures were in place and used, what actions were immediately taken in response to the release, and what short-term cleanup measures and other long-term measures were taken to prevent a future release. Again like the safety audit program, the apparent authority to collect such information can be found in CERCLA § 104(e). However, the information parallels that which § 304 requires a facility to provide in the follow-up report to an emergency release.⁷

§ 14:153 Routine and intermittent reporting by covered facilities: Chemical disclosure and the public's right to know

Facilities subject to Title III are obligated to file various regular and intermittent reports on the hazardous and toxic chemicals that they use. Whether the reports are primarily intended to serve the law's emergency planning and response or right-to-

the general regulatory authority of § 328, which authorizes promulgation of "all necessary regulations to implement" the law. In addition, in May 1994 the U.S. District Court for the Western District of Arkansas issued an administrative search warrant allowing EPA to inspect a facility to determine its compliance with §§ 311 and 312, based on implicit authority contained in the statute. EPA is also looking to Congress to supply this authority explicitly in its proposed amendments to EPCRA. This legislative oversight has been partially cured by regulation under the § 313 TRI program. *See* § 14:159.

⁵CERCLA § 104(b), (e), 42 U.S.C.A. § 9604(b), (e).

⁶Presumably, a facility could legitimately refuse the safety audit if a release required only a § 304 notice and not a CERCLA § 103 notice. The two notices, while substantially similar, are not coterminous. *See* EPCRA § 304(a)(2), 42 U.S.C.A. § 11004(a)(2) (specifying instances in which a § 304 notice, but not a CERCLA § 103 notice, is required).

⁷While the notices required by CERCLA § 103 and EPCRA § 304 are substantially the same, EPCRA § 304(c) additionally requires that a facility provide a follow-up notice detailing the actions taken in response to the emergency release, any known health risks associated with the release, and any advice regarding the medical attention required for exposed individuals.

know ends, they give the public raw data about the chemicals used, present, and disposed of in local communities and in the nation at large.

**§ 14:154 Routine and intermittent reporting by covered facilities:
Chemical disclosure and the public's right to know—Section 302
emergency planning notifications**

Section 302 (in tandem with § 303) gives state and local governments the information they need to develop and implement emergency response plans by identifying the facilities and hazardous chemicals in their planning areas. “Owners and operators” of “facilities” at which EHSs are present in amounts above designated “threshold planning quantities,” as these terms are defined, are covered by the emergency planning notification provisions of Title III, and must notify their SERCs under § 302(c).

The notification is not complex, and the information disclosed is minimal. The purpose of the notification is simply for the facility to stand up and be counted: all that is required is a written notice to the SERC that identifies the facility and indicates that it is subject to § 302. The notice need not list the EHSs present at the facility above their TPQs.¹

The owner or operator of a covered facility must have given the SERC the initial § 302 notification by May 17, 1987. Thereafter, the SERC must be notified that an EHS is present at a facility no later than sixty days after the facility first acquires the substance in an amount equal to or exceeding its TPQ or first becomes subject to Title III.²

It is up to the “owner or operator” to ensure that the planning notification is filed with the LEPC and SERC. “Owner or operator” is not defined, but a “person” who must report is; the definition is sufficiently broad that only facilities owned and operated by the federal government are exempt from reporting.³

A covered facility is defined as all buildings, equipment, structures, and other stationary items located on a single site, or on contiguous or adjacent sites, that are owned or operated (*i.e.*, controlled) by the same individual or entity.⁴ The definition is very broad and is intended to capture almost all establishments at which an EHS is present in quantity. Normally, it is easy to determine whether a particular site is a covered facility, although it may be difficult to determine the appropriate reporting unit for a large, multiple-establishment operation. The definition of a “facility” under the emergency planning sections is largely the same as that under other reporting sections of Title III, although there are differences. For planning purposes, for example, but not for § 313 purposes, a facility includes the motor vehicles, aircraft, and rolling stock present at the site.⁵

An EHS is one that is specifically so designated and is listed in the Appendices to 40 C.F.R. Part 355. A chemical substance is designated as an EHS because of its short- or long-term toxicity, reactivity, volatility, dispersibility, combustibility, or

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¹An example of a such a notice is provided in Orloff & Sakai, *Community Right-to-Know Handbook* 2-1, 2-2 (1988).

²40 C.F.R. § 355.30(b).

³EPCRA § 329(7), 42 U.S.C.A. § 11049(7); 40 C.F.R. § 355.20. Note that a “facility” is an entity owned or operated by a “person.”

⁴40 C.F.R. § 355.20. Note that the statutory definitions operate to exclude federal facilities but to cover state and municipally owned facilities. See EPCRA § 329(4), (7), 42 U.S.C.A. § 11049(4), (7).

⁵40 C.F.R. § 355.61; *cf.* 40 C.F.R. § 372.3.

flammability.⁶ The EHS list, which currently includes more than 350 chemicals, is not static: EPA revises the list and thresholds periodically, and has done so frequently. The initial listing of EHSs was designated by Congress.⁷ EPA immediately amended this listing by adding several chemicals upon implementation of the § 302 reporting rule.⁸ The first deletions from the list were of four chemicals that had been listed as the result of clerical error, and took place in late 1987 in response to a court order.⁹ A short time later, thirty-six more chemicals were delisted for the same reason.¹⁰ The EHS list, like other Title III lists, will likely be amended with some frequency.

The TPQ assigned to an EHS will likewise vary according to the particular substance's characteristics and is set at the amount of the substance that is considered significant for planning purposes. The TPQ is not an indication of the overall risk posed by the substance, but the more likely it is that some particular amount of an EHS would cause hazardous problems if released, the lower its TPQ.¹¹ For example, toxic gases, volatile liquids, and readily dispersible solids will have lower TPQs than will substances that are less toxic or less likely to be easily dispersed.

TPQs range from 1 pound to 10,000 pounds. In addition, each EHS solid is assigned two TPQs: If it is present as a solid, it will have a higher TPQ; if it is present in solution or as a powder, it will be assigned a lower TPQ because it is more readily dispersible.¹² All forms of an EHS present at a facility must be included, and their amounts aggregated, when determining whether the relevant TPQ is exceeded. However, EHSs present in mixtures or solutions in concentrations of less than 1 percent need not be counted.¹³ Special rules govern mixtures containing solid EHSs in their various forms; some technical expertise is necessary to determine the *de minimis* concentrations of such substances.¹⁴

§ 14:155 Routine and intermittent reporting by covered facilities: Chemical disclosure and the public's right to know—Section 303 notices

Facilities covered by § 302 are also obligated to provide more specific information under three separate provisions of § 303. First, § 303(d)(1) requires that a facility

⁶EPCRA § 302(a)(4), 42 U.S.C.A. § 11002(a)(4). Currently only acutely toxic chemicals are on the EHS list.

⁷The initial list was designated as those chemicals listed in Appendix A of EPA's Chemical Emergency Preparedness Program Interim Guidance (Nov. 1985). EPCRA § 302(a)(2), 42 U.S.C.A. § 11002(a)(2).

⁸52 Fed. Reg. 13378, 13388 (Apr. 22, 1987) (adding four chemicals).

⁹A.L. Laboratories, Inc. v. EPA, 826 F.2d 1123, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 21093 (D.C. Cir. 1987).

¹⁰53 Fed. Reg. 5573 (Feb. 25, 1988).

¹¹See 52 Fed. Reg. 13378, 13389 to 13390 (Apr. 22, 1987).

¹²52 Fed. Reg. 13378, 13403 (Apr. 22, 1987) (preamble to final rule); 40 C.F.R. § 355, apps. A & B. For example, a solid's TPQ may be listed as 100/10,000 lbs. The lower figure applies if the solid is in powder form and has a particle size of less than 100 microns, or is handled in molten or solution form, or is given an NFPA reactivity rating of 2, 3, or 4. If the solid does not meet any of these requirements, the higher TPQ applies. The rule specifies additional requirements.

¹³40 C.F.R. § 355.13.

¹⁴40 C.F.R. § 355.16. On March 22, 2012, EPA adopted amendments to raise the way the regulated community applies the TPQ's for EHSs that are non-reactive solid chemicals in solution form. EPA proposed these amendments because available data shows less potential for the solid chemical in solution to remain airborne in the event of an accidental release. The 157 potentially affected chemicals are identified in Appendix C of the TSD for the Revised TPQ Method for EHS Solids in Solution, in the docket to the rule. 77 Fed. Reg. 16679 (Mar. 22, 2012).

designate an “emergency coordinator” as its representative to the LEPC for local emergency planning activities.¹ Second, § 303(d)(2) requires that a facility notify the LEPC of any changes at the facility that would affect emergency planning for the area.² Finally, § 303(d)(3) requires that a facility give the LEPC any information requested for emergency planning purposes.³

The provisions of § 303 build on the information obtained under § 302. Section 303 reports are designed to enable planning committees to gather the additional data they require for development of their plans. By involving facilities directly in the planning process, however, the section seems aimed less at simply giving the public access to additional information about a facility than at establishing a continuing dialogue between the community and its facilities. Its loose and open-ended reporting structure recognizes that each planning committee will likely have different information needs, that a rigid set of reporting requirements could not possibly cover every situation, and that plans would be incomplete for lack of needed information if rigid reporting parameters were set by statute or regulation. By defining reportable information as that which is relevant and necessary for emergency planning, this free-form structure allows LEPCs to tailor facility-specific reporting to meet precise needs.⁴

Because both a § 302 notification and the name of the facility emergency coordinator designated under § 303(d)(1) must be provided to the LEPC within sixty days following the facility’s acquisition of an EHS above its TPQ, both can be combined in a single written notice.⁵ No time period is established for reporting changes at the facility, or for responding to an LEPC’s request for information. The statute only demands that such reports be filed “promptly,” which would seem to allow for variations depending on the information involved. In addition, although a facility is always free to provide information that is not technically relevant or necessary, only information that is “relevant” or “needed” *must* be provided. The exact meaning of these terms is unknown and will have to be determined on a case-by-case basis.⁶

**§ 14:156 Routine and intermittent reporting by covered facilities:
Chemical disclosure and the public’s right to know—Section 304
emergency notifications**

Section 304 accidental release reports are closely related to CERCLA § 103 reports. In the event of a release of an EHS or a CERCLA hazardous substance in an amount greater than its “reportable quantity” (RQ), § 304 of Title III requires the facility owner or operator to “immediately” notify the SERCs and LEPCs likely

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¹42 U.S.C.A. § 11003(d)(1); 40 C.F.R. § 355.30(c); *see* § 14:150 (description of emergency planning).

²42 U.S.C.A. § 11003(d)(2); 40 C.F.R. § 355.30(d)(1).

³42 U.S.C.A. § 11003(d)(3); 40 C.F.R. § 355.20(d)(2).

⁴For example, facilities must report on “relevant” changes, and an LEPC may request data that are “needed” for planning purposes, although these terms are undefined. Additionally, the statute specifies no time period in which this information must be provided, only an admonishment that it be provided “promptly.” EPCRA § 303(d), 42 U.S.C.A. § 11003(d). Decisions as to what constitutes “relevant” or “needed” information, and whether it was provided “promptly,” will probably be made on a case-by-case basis, and as a practical matter will be left to the discretion of the LEPC. Because facilities that are required to report under § 302 have representatives on the LEPC, facilities will be able to participate actively in this process.

⁵*See* Orloff & Sakai, *Community Right-to-Know Handbook* 2-1, 3–5 (1988) (example of combining §§ 302 and 303 notices).

⁶*See* this section note 4. Section 326(a)(2)(B), 42 U.S.C.A. § 11046(a)(2)(B), authorizes the SERC or LEPC to commence a civil action against a facility owner or operator for failing to provide information requested pursuant to § 303(d). *See* § 14:168.

to be affected by the release.¹ Because of the extensive overlap between the EHSs listed under § 302 and CERCLA “hazardous substances,” a chemical release will ordinarily require notification to both Title III authorities under § 304 and to the National Response Center under CERCLA § 103.² The overlap is not complete, however, and EPA intends to make reporting more uniform by designating as CERCLA hazardous substances those § 302 EHSs not already on the list.³

Section 304 applies to many more facilities than § 302. The RQ for an EHS is ordinarily less than its TPQ, and many RQs are set at one pound. This means that a facility that may not have to provide a planning notice under § 302 because it handles only a small amount of a hazardous substance may nevertheless have to provide a § 304 notice if it releases just a small amount of the substance. In addition, the “transportation exemption” in § 327, which excludes from Title III’s regulatory ambit any “transportation-related releases,”⁴ does not apply to § 304. Therefore, a facility that only provides storage incident to transportation must report a release of a covered chemical or substance, even if it is not otherwise covered by Title III.

Under § 304, “release” is given its ordinary meaning: any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, or dumping of a substance into the environment is included.⁵ This generally means any discharge of a chemical that is not specifically permitted under state or federal law. Excluded from reporting under § 304 are federally permitted releases, “continuous” releases, releases from a facility that does not purchase or store hazardous chemicals, releases to an approved disposal facility, and releases that result in exposure solely within the facility site or are otherwise exempted under CERCLA.⁶

Primary among these exemptions are those for “federally permitted” or “continuous” releases. A federally permitted release is one that occurs in compliance with certain state or federal discharge permits.⁷ A continuous release is one that is stable in rate and quantity such that it is subject to annual reporting under CERCLA. Disposal at a facility is exempt, but a spill or release occurring in connection with such disposal is not. Less common exemptions include releases from facilities that do not use, produce, or store “hazardous chemicals” (commonly research labs),⁸ and those

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¹42 U.S.C.A. § 11004(a)(1); 40 C.F.R. § 355.40(b)(1).

²For an explanation of the CERCLA notification, see § 14:152. Compare CERCLA § 103(a), 42 U.S.C.A. § 9603(a), 40 C.F.R. § 302.6 with EPCRA § 304(b), 42 U.S.C.A. § 11004(b), 40 C.F.R. § 355.40; see also *In re All Regions Chem. Labs*, No. CERCLA-I-88-1089 (EPA initial decision Dec. 1, 1989), *aff’d* by the Chief Judicial Officer, July 2, 1990.

³52 Fed. Reg. 13378, 13386 to 13392 (Apr. 22, 1987). This made EHSs not previously on the CERCLA list reportable under CERCLA § 103; it did not affect reporting under Title III. On January 23, 1989, EPA proposed to designate 232 EHSs as CERCLA hazardous substances. 54 Fed. Reg. 3388 (Jan. 23, 1989).

⁴42 U.S.C.A. § 11047; 40 C.F.R. § 355.40(b)(4)(ii) (“transportation-related releases”).

⁵EPCRA § 329(8), 42 U.S.C.A. § 11049(8); 40 C.F.R. § 355.20.

⁶EPCRA § 304(a)(2), 42 U.S.C.A. § 11004(a)(2); 40 C.F.R. § 355.40(a)(2). EPA’s Environmental Appeals Board, interpreting EPCRA § 304(a)(4), held that actual exposure to harmful levels of a hazardous substance did not have to be shown to establish a reporting violation. *In re Genicom Corp.*, No. 92-2 (EPA final decision Dec. 15, 1992).

⁷See CERCLA § 101(10), 42 U.S.C.A. § 9601(10). EPA has attempted to clarify the exemption. See 55 Fed. Reg. 30166 (July 24, 1990) (amending 40 C.F.R. Parts 302 and 355); see *In re Borden Chem. and Plastics Co.*, No. EPCRA-003-1992 (EPA partial accelerated decision Feb. 18, 1993) (releases of vinyl chloride from a relief valve are not federally permitted releases and are, therefore, reportable).

⁸EPCRA § 311(e)(4), 42 U.S.C.A. § 11021(e)(4).

that are exempt under CERCLA § 101(22).⁹

Section 304 actually requires two related notifications: an initial notification at the time of the release and a written follow-up report. The initial report may be given orally (by telephone, in person, or by other similar means) to the LEPC's community emergency coordinator and to the SERC. The notification, which must be given "immediately," must include the identity and amount of the chemical released, the duration of the release, any information concerning the health hazards posed by the release, and other relevant information.¹⁰ Most (but not all) releases are reportable under CERCLA § 103, so essentially the same notification must be given to the National Response Center.¹¹ A written follow-up notification must be provided to the LEPC and SERC as soon as practicable after the initial notice. The follow-up report should essentially update the initial notification, but it must also describe the actions taken in response to the release and any known or reasonably anticipated health risks associated with the release. If appropriate, it should also provide advice regarding medical treatment for exposed individuals.¹² The fact that information concerning the release becomes publicly available does not alleviate the owner's or operator's responsibility to submit the required follow-up report.¹³

**§ 14:157 Routine and intermittent reporting by covered facilities:
Chemical disclosure and the public's right to know—Section 311
(MSDS) reporting**

Nowhere is Title III's relationship to the OSHA HCS more evident than in § 311. This section obligates facilities that are required to maintain and have available an MSDS for each hazardous chemical on site above a certain threshold quantity to file copies of the MSDS (or a list of MSDSs) with state and local authorities. An MSDS is a multi-page document that discloses the identity of a chemical, describes its physical and health hazards, identifies the manufacturer, and details safe handling and emergency practices. The definition of an MSDS, the chemicals for which MSDSs are required, and the facilities that are required to have them are all set by the HCS (with minor variations provided in § 311); consequently, the universe of covered facilities once again differs, as it does among very nearly all sections of Title

⁹Releases exempt from a § 103(a) report under CERCLA § 101(22) are also exempt under EPCRA § 304. These include (1) releases solely within a workplace; (2) exhaust emission releases (from motor vehicles, rolling stock, etc.); (3) releases covered by the Atomic Energy Act and Uranium Mill Tailings Radiation Control Act; and (4) releases from the normal application of fertilizer. In addition, petroleum releases are excluded because petroleum is not a hazardous substance under CERCLA.

¹⁰40 C.F.R. § 355.40 details the specific contents of an emergency notification. No specific time is provided for submission of a § 304 report, but a timely notification is one that will allow emergency personnel to respond adequately. A notice more than a few hours following the release will likely be viewed as insufficient, and will ordinarily draw a penalty. *See In re Genicom Corp.*, No. CERCLA III-006, EPCRA-III-057 (EPA initial decision July 16, 1992) (notification two hours after the occurrence of a release was not "immediate"). In *In re Mobil Oil Corp.*, No. EPCRA-91-0120 (EPA initial decision Dec. 27, 1993), an ALJ held that a notification ten days after a release was not "immediate," even though the respondent maintained that this amount of time was necessary to determine that a release in excess of the federally permitted amount had occurred, and therefore that a notification was required.

¹¹*See* § 14:115.

¹²EPCRA § 304(c), 42 U.S.C.A. § 11004(c).

¹³*Center for Biological Diversity, Inc. v. BP America Production Co.*, 704 F.3d 413, 76 Env't. Rep. Cas. (BNA) 1017, 2013 A.M.C. 221 (5th Cir. 2013) (holding that failure to submit written notification was a continuing violation of EPCRA).

III.¹

Chemicals requiring MSDSs are identified not by reference to a list, but by their hazardous characteristics.² Under the OSHA HCS, a hazardous chemical is any element, chemical compound, or mixture of compounds that is a physical or health hazard. A chemical is considered a physical or health hazard if it is a carcinogen, a reproductive toxin, a toxic or highly toxic agent, or a sensitizer; if it is corrosive; or if it damages the skin, eyes, or mucous membranes. Both the HCS and Title III punctuate this broad definition with a number of specific exemptions based primarily on the intended use of the substance.³

Any facility that manufactures or imports such a chemical is required to prepare an MSDS for it. In addition, the HCS requires that an employer maintain an MSDS for any chemical to which workers will be exposed in the workplace. A “facility” for § 311 MSDS reporting purposes is defined as any buildings, equipment, or other stationary structures located on a single contiguous site or on adjacent sites owned or operated by the same person. Note that trucks, other shipping vehicles (including pipelines), and subsurface operations are considered to be “facilities” under this definition.⁴ The initial round of § 311 MSDS reporting, in October 1987, applied only to facilities in the manufacturing sector (those within Standard Industrial Classification (SIC) Codes 20–39). The HCS has since been expanded to include the nonmanufacturing sector, and now encompasses nearly all facilities in which hazardous chemicals are likely to be present in quantity.⁵ The application of the HCS expansion to construction sites was delayed for a time by an industry lawsuit. The basis for the suit and temporary stay was that it would be difficult, if not impossible, to determine who was responsible for complying with the HCS requirements at construction sites, which commonly have a large number of contractors and subcontractors.⁶ The suit was subsequently dismissed.

So-called “downstream users” of hazardous chemicals are not required to prepare

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¹The universe of facilities is different for almost every section of Title III. Facilities covered by §§ 302 and 303 are those that have an EHS present above its TPQ; § 304 is broader, covering any facility that may release either an EHS or a CERCLA hazardous substance above a defined threshold amount. All facilities covered by §§ 302 and 303 are completely included within § 304’s ambit, but the converse is not true. The coverage of §§ 311 and 312 is broader still, applying to all manufacturing and nonmanufacturing facilities that must have MSDSs for chemicals present above certain threshold quantities. The universe of facilities covered by these sections does not completely overlap that covered by §§ 302 to 304 because chemicals for which MSDSs are required may or may not also be EHSs or CERCLA hazardous substances. The universe of § 313 facilities is a subset of those covered by §§ 311 and 312; § 313 applies only to certain chemicals made or used above certain thresholds by larger manufacturing sector facilities. Thus, it is entirely possible to be covered by all of the law’s sections, or only some, in almost any combination.

²“Hazardous chemicals” are defined according to standards set by the OSHA HCS, 29 C.F.R. § 1910.1200(c). There are some exceptions. *See* 40 C.F.R. § 370.2; *see also* note 3.

³The OSHA HCS does not require that MSDSs be prepared for substances regulated as wastes under RCRA; for tobacco or tobacco products; for wood or wood products; for “articles” as defined in 29 C.F.R. § 1910.1200; for foods, drugs, cosmetics, or alcoholic beverages for retail sale or used by employees on the worksite; for consumer products or hazardous substances, as defined under the Consumer Product Safety Act; or for drugs in final form regulated by the Federal Food, Drug, & Cosmetic Act for direct consumption by patients. Additional exemptions are contained in § 311(e) of Title III (exempting from MSDS reporting requirements all food, additives, and drugs regulated by the FDA; substances present as solids in manufactured items for which no exposure occurs under normal use; substances sold for personal use; substances used in research and by hospitals; and substances used as fertilizers).

⁴Note that this differs from the definition of “facility” for emergency notification under § 304, and for TRI reporting under § 313. *Compare* 40 C.F.R. §§ 355.20, 370.2 *with* 40 C.F.R. § 372.3.

⁵52 Fed. Reg. 31852 (Aug. 24, 1987).

⁶*Associated Builders & Contrs., Inc. v. Brock*, 862 F.2d 63 (3d Cir. 1988), cert. denied, 490 U.S.

MSDSs, but they are required to have them available for hazardous chemicals known to be present at the worksite; if the supplier does not provide an MSDS, the user must request one. Some “downstream users,” such as warehousing or retail sales establishments, are subject only to abbreviated HCS requirements, but are still bound to Title III reporting.⁷

If a facility is required to maintain an MSDS on site, and if certain poundage thresholds are exceeded, it must provide copies of the MSDS to its SERC, LEPC, and local fire department within three months after the time the HCS requires it to have the MSDS on site. Reporting thresholds and reporting dates are phased in over a three-year period. For the first two years that a facility is subject to Title III, MSDSs must be reported for all non-EHS hazardous chemicals present at the facility in amounts of 10,000 pounds or more. The threshold would have dropped to zero pounds in the third year, but this final threshold was delayed for a year and has since been finalized at the interim levels.⁸ The threshold for the first two years is lower for § 302 EHSs: 500 pounds or a substance’s TPQ, whichever is less.⁹ The final zero-pound threshold for EHSs was also extended for a year, but has also been finalized at the interim level of 500 pounds.¹⁰ The phase-in is also facility-specific; that is, it depends on when the facility became subject to MSDS requirements and when it acquired a hazardous chemical in an amount exceeding the chemical’s planning threshold. The phased-in approach will be eliminated eventually so that all facilities and chemicals will be similarly treated.

Section 311 also permits facilities to supply only a list of the MSDSs that they maintain on site in lieu of supplying the individual MSDSs. If the list option is selected, which may be desirable if the facility has many different chemicals on site, the chemicals must be grouped according to their health and physical hazards; EPA has consolidated the twenty-three OSHA hazard categories into just five for this purpose.¹¹ The chemicals must be listed according to their common names. The list must include any hazardous component, as provided on the MSDS (except in the case of mixtures).¹²

Although reporting by list is intended to be less burdensome alternative to full MSDS reporting, it does not completely excuse the facility from providing MSDSs to the public. An LEPC may request any MSDS maintained by a covered facility, which the facility must provide within thirty days.¹³ Anyone may obtain an MSDS from the LEPC.¹⁴

Mixtures present special reporting problems. An MSDS may be prepared for the mixture as a whole or individual MSDSs may be prepared for each of its hazardous

1064 (1989).

⁷29 C.F.R. §§ 1900.1200(g)(6)-(10), (h). Sections 311 and 312 apply to anyone who is required to prepare or “have available” an MSDS.

⁸The reporting threshold was to have dropped to zero pounds on October 17, 1989; however, on October 12, 1989, EPA extended for one year the interim thresholds that apply to manufacturing facilities, *see* 54 Fed. Reg. 41904, 41906 (Oct. 12, 1989) (interim final rule revising 40 C.F.R. § 370.20, effective October 17, 1989), and finalized on July 26, 1990. 55 Fed. Reg. 30632 (July 26, 1990) (final thresholds at 10,000 pounds for MSDS reporting, and TPQs 500 pounds for EHSs). This requirement is now codified at 40 C.F.R. § 370.10.

⁹40 C.F.R. § 370.10(a)(1). Five hundred pounds is the approximate weight of one 55-gallon drum.

¹⁰55 Fed. Reg. 30632 (July 24, 1990); 54 Fed. Reg. 41904 (Oct. 12, 1989) (interim levels).

¹¹Two of these are health hazard categories— immediate or acute hazards and delayed or chronic hazards. Three are physical health hazard categories—fire hazards, sudden release of pressure hazards, and reactivity hazards. 52 Fed. Reg. 38344, 38354 (Oct. 15, 1987).

¹²29 C.F.R. § 1910.1200(g).

¹³40 C.F.R. § 370.30(b).

¹⁴EPCRA § 324, 42 U.S.C.A. § 11044(a).

components.¹⁵ If the MSDS is prepared for the mixture as a whole, its contents will vary according to what is known about the mixture. If the mixture has been tested as a whole for its hazardous characteristics, the MSDS need only list those components that actually contribute to its hazardous nature. If the mixture has not been tested as a whole, the MSDS must list each hazardous component present in the mixture.¹⁶ Thus, a facility has a number of options when reporting mixtures. It can supply a single MSDS for each mixture, which may or may not include all of the mixture's ingredients, or it may supply an MSDS for each individual component of the mixture, which will not indicate to others that the components are present in a mixture. These options can help companies protect trade secrets.¹⁷

**§ 14:158 Routine and intermittent reporting by covered facilities:
Chemical disclosure and the public's right to know—Section 312
chemical inventory reporting**

Section 312 chemical inventory reporting supplements the § 311-generated chemical hazard information, and is triggered by the same OSHA HCS requirements. Facilities required to file MSDSs under § 311 are also required to file with their SERC, LEPC, and fire department annual reports detailing the amounts and locations of chemicals present at the facilities. These inventory reports must be filed by March 1 of each year using either of the two federally prescribed forms ("Tier I" and "Tier II") or a state-approved reporting form that contains the same information.¹ On July 13, 2012, EPA revised these forms to add new data elements and revise some existing data elements for use starting in the 2013 reporting year; for example, the forms require the reporting facilities to specify the latitude and longitude of the facility, whether the facility is manned or unmanned, an estimate of the number of occupants, range codes for quantities of hazardous chemicals, and whether the facility is subject to the EPCRA § 302 notification for EHSs.²

Section 312 reporting tracks § 311 reporting closely: the requirements on thresholds and phased-in reporting apply to both. In addition, a chemical should ordinarily be reported under § 312 in the same manner as under § 311. The options for reporting mixtures under § 311 are also available under § 312; mixtures should be reported consistently under both sections, where practicable.³

Section 312 establishes a two-tier reporting structure. The minimum reporting requirement is satisfied by a "Tier I" report, which is simply an estimate of the amount of hazardous chemicals present at the facility during the preceding year, the average daily amount of each chemical present, and their general location within the facility.⁴ Single chemicals and mixtures are not reported individually, but aggregated and reported according to the five hazard categories defined by EPA under § 311.

Tier II reporting is chemical-specific. A Tier II report must include the chemical name or common name as provided on the MSDS, an estimate of the maximum amount of the chemical present on site at any one time, an estimate of the average daily amount present, a brief description of the manner of storage, and a description

¹⁵40 C.F.R. § 370.14.

¹⁶29 C.F.R. § 1910.1200(g)(2)(c).

¹⁷See § 14:160.

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¹EPCRA § 312(a)(2), 42 U.S.C.A. § 11022(a)(2); 40 C.F.R. §§ 370.40 to 370.42.

²77 Fed. Reg. 41300 (July 13, 2012).

³40 C.F.R. § 370.14.

⁴EPCRA § 312(d), 42 U.S.C.A. § 11022(d); 40 C.F.R. § 370.40.

of the location of the chemical at the facility. Tier II reports must be provided upon request by a SERC, an LEPC, any other state official, or a member of the public.⁵ If a facility has opted to file only Tier I reports, it must prepare a Tier II report in response to the request; however, if it has already filed the Tier II report, the SERC or LEPC must provide it to the requestor.

Although Tier I reporting is intended to facilitate and ease the reporting burden, little is actually gained by submitting Tier I forms instead of Tier II forms. Tier II reports must be prepared promptly upon demand, and Tier II forms on individual chemicals are used as “worksheets” for calculating the overall amounts and hazards reported on Tier I forms.

Congress has established some special considerations regarding the provision of information to the public under § 312. Members of the public must submit requests for Tier II information in writing to the SERC or LEPC and must specify the facility for which they are requesting information.⁶ If the request for Tier II information is made for a chemical present at a facility in an amount less than 10,000 pounds, it must be accompanied by a statement of need for the information. The SERC or LEPC is not required to request this information from the facility, but if it does, the facility must give the information to the requesting party.⁷ The SERC or LEPC has forty-five days to respond to a request for Tier II data; this time limit seems intended to allow the SERC or LEPC an opportunity to acquire the information from the facility, if it does not have it on file.⁸ Finally, the specific location information provided with Tier II reports may be claimed confidential and is not available to the public.⁹

Section 312 gives fire departments limited authority to inspect facilities that have filed reports. However, the section somewhat curiously omits a right of access to determine whether a facility has complied with the reporting requirement in the first instance.¹⁰

Together, §§ 311 and 312 generate much detailed information on the chemicals present and in use at manufacturing and nonmanufacturing facilities. Although they serve primarily Title III’s right-to-know ends, they are also important for fleshing out emergency response plans. Information on the amounts, locations, and physical and health hazards of all hazardous chemicals, not just EHSs, is necessary and integral to a fully comprehensive response plan. By and large, however, for most planning purposes the hazard information provided by § 311 reports is adequately captured by § 312 Tier II forms.

Title III emergency planning would be much improved if the sheer volume of paper regularly provided to emergency responders were cut back. There are persistent reports of fire departments being overwhelmed by vast numbers of multi-page MSDS reports, and unconfirmed anecdotes that they have been accordingly assigned to the trash bin. Congress could easily reduce the volume of paper without sacrificing access to important information by dropping the relatively useless and little-used Tier I reporting option and by eliminating mandatory § 311 reporting. MSDSs should remain available because they do provide useful chemical-specific

⁵EPCRA § 312(e)(1), 42 U.S.C.A. § 11022(e)(1); 40 C.F.R. § 370.30(b).

⁶EPCRA § 312(e)(3), 42 U.S.C.A. § 11022(e)(3).

⁷EPCRA § 312(e)(3), 42 U.S.C.A. § 11022(e)(3).

⁸EPCRA § 312(e)(3)(D), 42 U.S.C.A. § 11022(e)(3)(D). A citizen may sue the SERC (or governor) for failing to provide § 312(e)(3)-requested information. EPCRA § 326(a)(1)(D), 42 U.S.C.A. § 11046(a)(1)(D). A SERC may sue a facility for failing to provide a Tier II form upon a request under § 312(e)(1). EPCRA § 326(a)(2)(B), 42 U.S.C.A. § 11046(a)(2)(B). No suit is authorized against an LEPC for failing to provide the requested information.

⁹EPCRA § 312(e)(2)(F), 42 U.S.C.A. § 11022(d)(2)(F).

¹⁰EPCRA § 312(f), 42 U.S.C.A. § 11022(f).

information. However, they should be available upon request by emergency planners, responders, and the public.

**§ 14:159 Routine and intermittent reporting by covered facilities:
Chemical disclosure and the public's right to know—Section 313
reporting of annual toxic emissions**

If the provisions of Title III discussed in the preceding sections focus upon current concerns with chemical usage in the United States, the TRI program looks to the future. The testimony of the data gathered by the § 313 TRI program will likely predict the coming course of chemical regulation in this country. How well these inventory data are understood by EPA, industry, and the public will determine the extent to which toxic chemicals remain an ubiquitous and persistent health and environmental threat.

The TRI inventory fills a gap left by the original TSCA inventory.¹ The TSCA inventory was intended to be a complete compilation of all chemicals manufactured in this country and their intended uses.² However, this rudimentary information does not provide a full picture of actual toxic chemical usage and disposal practices. TRI fills this gap by collecting significantly more accurate and complete data than has previously been available. Despite the shortcomings of the TRI data,³ EPA for the first time has available information specifying precisely which facilities manufacture, process, and use certain listed toxic chemicals, in what amounts, and by which pathways these chemicals exit the facilities. This information should enable EPA to regulate more wisely, and by involving the public, § 313 is expected to act as a catalyst for changes in this country's response to toxic pollution.

The history of environmental regulation in the 1970s had been primarily a bilateral contract between the regulators and the regulated. The right-to-know provisions of Title III, particularly § 313, were part of a trend in the 1980s toward making this a more evenly balanced three-way deal. The TRI program's contribution was to publicly broadcast raw chemical release information by several means, including a computer database network accessible by anyone with a computer and a modem.⁴ This let the public at large—always the driving, if somewhat sporadic, force behind significant environmental reforms—in on the information guiding environmental regulatory choices.

The TRI is essentially a survey of chemical usage by this country's manufacturing

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¹The similarity to TSCA has not gone unnoticed. Stever, *Law of Chemical Regulation and Hazardous Waste*. EPA has also acknowledged the functional similarity of the TRI and TSCA programs: While most of Title III—the emergency planning and response portions—is administered by the Office of Solid Waste and Emergency Response, the TRI program is administered by the Office of Toxic Substances.

²TSCA § 8(b), 15 U.S.C.A. § 2607(b); *see* § 16:29.

³TRI discharge data may or may not represent actual amounts. Discharge data may be estimates only; Title III does not require that facilities monitor actual discharges, only that they use “reasonably available” data. EPCRA § 313(g)(2), 42 U.S.C.A. § 11023(g)(2). Estimates may be calculated using a variety of methods, including “mass balance” calculations. *See generally* EPA Office of Pesticides and Toxic Substances, *Estimating Releases and Waste Treatment Efficiencies for the Toxic Chemical Release Inventory Form* (1987); *see also* this section notes 41-42 and accompanying text (accuracy of mass balance calculations).

⁴EPCRA § 313(j), 42 U.S.C.A. § 11023(j). There have been some difficulties with the initial accessibility of the TRI database. For example, while the data can be accessed directly, they are difficult to manipulate, have been criticized as not user-friendly, and are not available for downloading to home systems. Despite these problems, to which EPA is sensitive and which it is seeking to address, the ability to acquire this information directly is a tremendous improvement over traditional methods of accessing EPA data (*e.g.*, through the Freedom of Information Act).

sector. Each covered facility must report its name and location, its principal economic activities, the identity, uses, and maximum amount of the toxic chemicals present at any time during the year, the waste treatment and disposal methods it employs (along with an estimate of their efficiency), and the amounts of the chemicals it discharges to each environmental medium, as well as the amounts and destinations of off-site shipments (such as to landfills and incinerators). The report in which this information is submitted is known as “Form R.”

The Pollution Prevention Act of 1990 (PPA)⁵ has added to the inventory of chemical information to be supplied by facilities subject to the TRI reporting requirements.⁶ Pursuant to the PPA, each owner or operator of a TRI-covered facility must submit new data covering source reduction and recycling data for each toxic chemical reported.⁷ The PPA reporting requirements cover the quantity of the toxic chemical entering the wastestream (or otherwise released into the environment), the quantity entering recycling processes both at the facility and off-site, and the quantity treated on-site and off-site during the calendar year.⁸ In addition, the PPA requires data that is designed to track a facility’s waste reduction achievements: The percentage change from the previous year—and for the following two years—of the amounts entering any wastestream and being recycled must be reported for each covered chemical.⁹ The percent change from the previous year must also be reported for the amount of the chemical that is treated.¹⁰ For the first year of pollution prevention data reporting, however, a comparison with the previous year is required only if the information is available.¹¹

Further, the PPA requirements include reporting of the source reduction practices used with regard to the chemical, the techniques used to identify source reduction opportunities, and a ratio of production in the reporting year to production in the previous year.¹² Reporting is also required of the amount released into the environment as a result of a catastrophic event, remedial action, or other one-time event not associated with production processes.¹³

The owner or operator of a manufacturing facility is obligated to file an individual “Form R”¹⁴ report on each of over 300 listed toxic chemicals that the facility manufactures, processes, or otherwise uses above a designated threshold quantity. In addition to these specifically listed chemicals, there are currently twenty whole categories of chemical compounds to which these reporting requirements apply. There are special rules for mixtures, which must be reported by their individual constituents and not as wholes, as is commonly attempted. Form R reports must be filed by July 1 of each year, and must cover chemical usages during the prior calendar year. Duplicate original copies of each Form R report must be filed with

⁵Omnibus Budget Reconciliation Act of 1990, Pub. L. No. 101-508, § 6607, 104 Stat. 1388–421 (1990) (codified at 42 U.S.C.A. §§ 13101 to 13150).

⁶Pollution Prevention Act § 6607(a), 42 U.S.C.A. § 13106(a).

⁷Pollution Prevention Act § 6607(a), 42 U.S.C.A. § 13106(a). The Pollution Prevention Act added to the reporting requirements of Form R. EPA was permitted (but not required) to modify Form R to include the mandated pollution prevention data, which it elected to do. Pollution Prevention Act § 6607(c), 42 U.S.C.A. § 13106(c). The pollution prevention data were required beginning with calendar year 1991.

⁸See Pollution Prevention Act § 6607(b)(1)-(2), (8), 42 U.S.C.A. § 13106(b)(1)-(2), (8).

⁹Pollution Prevention Act § 6607(b)(1)-(2), (4), 42 U.S.C.A. § 13106(b)(1)-(2), (4).

¹⁰Pollution Prevention Act § 6607(b)(8), 42 U.S.C.A. § 13106(b)(8).

¹¹Pollution Prevention Act § 6607(b)(8), 42 U.S.C.A. § 13106(b)(8).

¹²Pollution Prevention Act § 6607(b)(3), (5)-(6), 42 U.S.C.A. § 13106(b)(3), (5)-(6).

¹³Pollution Prevention Act § 6607(b)(7), 42 U.S.C.A. § 13106(b)(7).

¹⁴In 1994, EPA introduced a streamlined form, “Form A,” and has been expanding its use to reduce the reporting burden on covered facilities.

both state and federal authorities. The state recipient is not necessarily the same as that for § 311 and § 312 reports; the federal recipient is EPA headquarters.¹⁵ Since April 19, 2012, EPA has required facilities located in “Indian country” to report to EPA and the appropriate tribal government instead of to the state.¹⁶

On November 30, 1994, EPA announced the addition of approximately 300 chemicals and chemical categories to the list of toxic chemicals required to be reported under § 313.¹⁷ The addition of these chemicals and chemical categories is based on any or all of their acute human health effects, carcinogenicity or other chronic human health effects, or their environmental effects. The expansion almost doubled the number of chemicals that are required to be reported under § 313, from 337 to 648.

All manufacturing facilities (facilities in SIC Codes 20–39) with more than ten full-time employees, or the equivalent,¹⁸ are potentially required to file TRI reports.¹⁹ In 2006, EPA began transitioning from using exclusively SIC codes to also using corresponding North American Industry Classification System (NAICS) codes for purposes of TRI reporting.²⁰ EPA has since required facilities to use NAICS codes for TRI reporting.²¹ Several different codes may apply to the various economic activities at a facility, but only the facility’s “primary” activity is critical to determining coverage.²² A facility ordinarily determines its codes for itself, although in cases of dispute EPA must determine, in its discretion, the facility’s appropriate classification.²³ In the first year of TRI reporting, the vast majority of reported releases of toxic chemicals into the environment came from facilities in major SIC

¹⁵The state recipient is usually the SERC or the state’s department of environmental protection. EPA offers guidelines and instructions for reporting on its TRI Program website at <http://www.epa.gov/tri/report/index.htm>.

¹⁶77 Fed. Reg. 23409 (Apr. 19, 2012) (adding 40 C.F.R. § 372.20 and revising §§ 372.3, 372.27, and 372.30). The definition of “state” no longer includes “Indian country,” which is separately defined in 40 C.F.R. § 372.3.

¹⁷59 Fed. Reg. 61432 (Nov. 30, 1994).

¹⁸“Equivalent” employees refers to the number of part-time workers. In addition, on August 3, 1993, President Clinton signed Executive Order No. 12856, entitled “Federal Compliance with Right-To-Know Laws and Pollution Prevention Requirements.” The Executive Order requires federal facilities to comply with all provisions of EPCRA and the Pollution Prevention Act, regardless of SIC Code.

¹⁹The ten-employee requirement is functionally a small-business exemption. However, a facility satisfies this requirement even if, for example, it has only eight full-time employees and four who work part-time. The determination is based on the total hours worked by all employees—the standard is the “full time equivalent” of ten employees. A facility calculates this figure by totaling the hours worked by all employees and dividing by 2,000 hours, the “full time equivalent” for a “full time employee.” 40 C.F.R. § 372.3.

²⁰71 Fed. Reg. 32464 (June 6, 2006). The SIC codes and corresponding NAICS codes are listed in 40 C.F.R. § 372.23.

²¹Facilities have been required to report NAICS codes since the 2006 reporting year (for forms due since July 1, 2007). 71 Fed. Reg. 32464 (June 6, 2006). EPA has continued to update the regulations to reflect revisions by the White House Office of Management and Budget (OMB) to the NAICS codes, which typically occur every five years. *See, e.g.*, 78 Fed. Reg. 42875 (July 18, 2013).

²²The “primary” code is that which describes the activity that predominates in terms of the economic value of the products manufactured or shipped from the facility. *See generally* Office of Management and Budget, Standard Industrial Classification Manual (1987). A “multi-establishment” facility, which is a single manufacturing facility with several different “establishments” or discrete economic units, must determine the primary code that applies to each establishment, then calculate which establishment contributes most in overall value to the facility as a whole; this yields the primary code for the entire facility. 40 C.F.R. § 372.22(b)(2)–(3).

²³OMB has issued a policy directive to this effect, requiring each federal agency to determine for itself whether the application of a particular SIC code meets its regulatory objectives, and granting the agency the authority to modify SIC code descriptions accordingly. *See also* EPCRA § 313(b)(1)(B), 42 U.S.C.A. § 11023(b)(1)(B); H.R. Conf. Rep. No. 962, 99th Cong., 2d Sess. 292–93 (1986) (EPA has

Code 28 (chemical products), followed by major SIC Codes 26 (paper products) and 33 (primary metals).²⁴

Section 313 defines “facility” slightly differently than other sections of Title III: it includes all buildings, equipment, structures, and other *stationary* items on a single site, or on contiguous and adjacent sites under common control or ownership.²⁵ The chief difference is that under §§ 302 to 304 and 311 to 312, the definition of “stationary” includes rolling stock, motor vehicles, and aircraft present at the site, whereas the § 313 definition does not consider stationary those items that are movable to other sites.²⁶

A single facility may be comprised of multiple “establishments,” or discrete economic units that are part of the whole operation. These different establishments are not considered individual facilities, although separate reports can be submitted for each establishment.²⁷

Industrial parks, warehousing operations, and other similar operations present some difficulties for determining who must report and what must be reported. The owner of an industrial park, in which space is leased and the owner has only a real estate interest, is not considered to be the operator of the site and is therefore not primarily obligated to report. The lessee, as the facility operator controlling the activities at the leased portion of the site, is responsible for reporting so long as it satisfies all the other § 313 reporting requirements.²⁸ However, note that because both the owner and the operator are subject to § 313, if no report is received from a covered facility, both could be held liable for nonreporting penalties.

The determination of who is primarily responsible for reporting ordinarily depends on who controls the facility grounds. For example, if a manufacturer sells a product such as crude oil stored in tanks, and also leases the storage area to the purchaser, the manufacturer/lessor is still the facility operator and must report any releases from the tanks because they are releases from its facility, even though the facility owner no longer owns the oil and has leased the property on which the oil is stored. Similarly, however, a company that has contracted with a warehouse for transshipment, in which products are not repackaged or otherwise processed but are only stored for reloading for later transit, does not need to report because it neither owns the warehouse nor controls the warehousing operations. And because a warehousing operation is not a manufacturing process, the warehouse owner and operator is also not required to report. However, the owner of a building leased by another company

authority to address SIC code coverage issues for “borderline” facilities). SIC Codes were developed for statistical purposes, in order to describe the economic activities of the United States, and not for regulatory purposes. As a result, OMB, which was responsible for developing SIC code descriptions, has directed agencies using SIC codes for regulatory purposes to evaluate for themselves the appropriate SIC code in any given case; OMB clearly does not intend to become the arbiter of EPA-facility code disputes. In 1997, OMB adopted NAICS codes to replace SIC codes, and EPA has since adjusted accordingly by using them for TRI reporting purposes. *See* 61 Fed. Reg. 4524 (Feb. 6, 1996) (OMB proposal to use NAICS codes).

²⁴The chemical products manufacturing industry, as might be expected, was far and away the largest emitter of toxic chemicals, discharging over 12 million pounds into all environmental media. The second largest emitter was the paper products manufacturing industry, far behind with over 2.8 million pounds discharged. EPA, *The Toxics-Release Inventory: A National Perspective* 14–15 (1989).

²⁵40 C.F.R. § 372.3.

²⁶*Compare* 40 C.F.R. § 372.3 (facility definition for § 313) *with* 40 C.F.R. § 355.61 (facility definition for §§ 302 to 304) *and* 40 C.F.R. § 370.66 (facility definition for §§ 311 and 312).

²⁷40 C.F.R. § 372.38(c). If one part of the facility reports separately, however, all establishments must file separately, and then only for the chemicals for which they are responsible (*e.g.*, one establishment cannot report the waste shipped offsite by the entire facility, but only the waste shipped off-site by that one establishment).

²⁸40 C.F.R. § 372.45(e)-(f).

for food preparation would be required to report the chemicals used for refrigeration (ordinarily ammonia), if the building owner provides refrigeration services to the lessee.

The obligation to report is keyed to specific amount thresholds, which vary according to the activities associated with the chemical at the facility; these thresholds are discussed in detail below. TRI reporting is not, as is often mistakenly asserted, keyed to the amount *released* from the facility.²⁹ Another potential source of reporting error is that the list of reportable chemicals is not static, and a chemical that a facility did not have to report one year may have to be reported the next.³⁰ The periodic additions and deletions mean that a potentially covered facility must keep track of what chemicals are covered well before the July 1 deadline to avoid having to hastily pull together the needed information from the previous year's records.

One of the most troublesome reporting terms is the requirement that facilities report twenty whole categories of chemicals and compounds. Listed categories cover any chemical that has one of the listed compounds present as part of its infrastructure. Category reporting therefore has the potential to balloon significantly the number of chemicals that must be reported. For example, a chemical containing nickel chloride must be reported as a nickel compound, even though nickel chloride is not a specifically listed TRI chemical. All nickel compounds must be aggregated and reported using a single Form R, rather than each being reported separately. A further complication is the overlap of specific listed chemicals and categories; for example, both nickel and nickel compounds are subject to reporting. When a specific listed chemical is also covered by a compound category, the chemical and compound must be considered and reported separately (*i.e.*, pure nickel is not included with any nickel compounds when determining whether and how to report). If a mixture contains both a listed chemical and a listed compound, separate determinations for reporting both the chemical and the compound are required.

Whether a report needs to be filed for any listed toxic chemical present at a covered facility depends both on the amount used and the activity associated with the chemical. The reporting obligation is triggered at a higher threshold for a chemical that is "manufactured" than for one that is simply "used" at the facility.

As noted previously, a covered facility must file a Form R report for each listed chemical that it "manufactures," "processes," or "otherwise uses." A chemical is "manufactured" if it is produced, imported, or incidentally produced (*e.g.*, as a byproduct or an impurity).³¹ A chemical is "processed" if it is prepared in some way, following its initial manufacture, for later distribution in commerce. Processing covers primarily the incorporation of the chemical into an article or a mixture, and does not include changes in the form or chemical state of the raw chemical.³² A chemical is "otherwise used" by a facility for all other activities that are not manufacturing or processing; this is a catch-all category, that is defined by exclusion. The object is to capture for reporting the varied uses of a chemical, either alone or in trade name products or mixtures. Common uses covered by this category are as a catalyst, a lubricant, a degreaser, and a refrigerant, as well as any other use that

²⁹Several non-EPA guidance documents advise that reporting is keyed to the amount released. *See, e.g.*, ALI-ABA Course of Study: Environmental Law, at 41 (Washington, D.C. Feb. 16–18, 1989). This serious misperception has even crept into the so-far sparse decisional law on § 313. *See In re Riverside Furniture Corp.*, No. EPCRA-88-H-VI-4065, slip op. at 10 (final order Sept. 28, 1989).

³⁰Chemicals can be added or deleted from the list based on their toxicity, health, and environmental effects. EPCRA § 313(d), 42 U.S.C.A. § 11023(d). Because a change to the list is a change to the rule itself, list additions and deletions are published in the *Federal Register*. *See, e.g.*, 54 Fed. Reg. 25850 (June 20, 1989).

³¹40 C.F.R. § 372.3; 53 Fed. Reg. 4504 (Feb. 16, 1988).

³²53 Fed. Reg. 4504, 4504 to 4505 (Feb. 16, 1988).

supports the facility's activities without intentionally making the chemical part of the final product.³³ Not every incidental use of a chemical at a facility is covered, however; simple redistribution or relabeling is not covered, and there are other exceptions for uses that do not directly support the facility's manufacturing activities.³⁴

A quantity threshold is assigned to each of these activities; whether reporting of a particular chemical is required depends on whether the facility manufactures or uses the chemical in an amount greater than the applicable threshold. The manufacturing threshold drops in each of the first three years of the program, thereby phasing in smaller facilities. The permanent threshold, starting with reports covering the 1989 calendar year (due July 1, 1990), is 25,000 pounds of a listed chemical that is either manufactured or processed by the facility; the use threshold is 10,000 pounds.³⁵

A facility that both manufactures and uses a listed chemical must calculate the amounts separately. However, if any threshold is crossed, all activities associated with the chemical must be reported. In other words, only the amount manufactured should be considered when determining whether the manufacturing threshold is exceeded; the amount used should not be added to this, but calculated separately to determine whether the use threshold is crossed. However, if either the manufacturing or use threshold is exceeded, the total amount of the chemical must be factored into the release quantities and all other reporting elements for the chemical.³⁶

Mixtures present special reporting problems, as most users of mixtures and trade name products are not ordinarily aware of their constituents; indeed, manufacturers consider the makeup of many trade name products a confidential trade secret, and the MSDSs for the products include no information on the constituents. When a mixture's constituents are known, however, it is a relatively straightforward process to determine whether it must be factored into the facility's overall TRI reporting calculations.

In general, only the toxic chemical component of the mixture should be considered when calculating amounts for § 313 reporting; the total amount of the mixture (both § 313 and non-§ 313 chemicals) should not be used. The MSDS should provide both the identity of the chemical constituents and their proportional amount in the solution or mixture. If a facility knows the total amount of the mixture used and the percentage of the mixture that is a listed TRI chemical, it can determine the total amount of the chemical used. However, it need not consider *de minimis* concentrations of a chemical in making this determination.³⁷ Sometimes the MSDS provides only a percentage range of a constituent, instead of a precise figure. In such cases, the highest figure or upper bound percentage should be used as a "worst case"

³³40 C.F.R. § 372.3; 53 Fed. Reg. 4504, 4506 (Feb. 16, 1988).

³⁴These include use of the chemical as a "structural component" of the facility, use for janitorial and routine facility and grounds maintenance, personal use by employees (including use in a cafeteria, store, or infirmary located in the facility), use for maintenance of motor vehicles, use when present in process and non-contact cooling water, and use when present in air either as a result of combustion or in compressed air. 40 C.F.R. § 372.38(c).

³⁵40 C.F.R. § 372.25(a)-(b). For reports covering the 1987 calendar year, the manufacturing/importing threshold was 75,000 pounds. For 1988, the amount dropped to 50,000 pounds. For 1989 the amount dropped to 25,000 pounds.

³⁶40 C.F.R. § 372.25(c). When calculating whether the threshold is crossed for a chemical compound, all forms of the compound must be aggregated. 40 C.F.R. § 372.25(d).

³⁷If the amount of the listed chemical present in a mixture is less than 1 percent, or 0.1 percent if an OSHA HCS-defined carcinogen, the reporting facility does not have to consider the chemical in determining its threshold and release quantities. 40 C.F.R. § 372.38.

assumption.³⁸ Section 313 requires only that “reasonable estimates” be used when calculating amounts,³⁹ so the lack of a precise figure is not necessarily an impediment to proper reporting.

The difficulties presented by trade name products and secret mixtures are offset somewhat by the rule’s “supplier notification” requirement, which did not apply until the second year of reporting.⁴⁰ Suppliers of mixtures and trade name products to facilities covered by § 313 are required to identify the specific § 313 listed components, their CAS numbers, and their percentage by weight. If the mixture’s components are considered a trade secret,⁴¹ the notice must identify the mixture or trade name product as containing a chemical that is subject to § 313 and provide a generic name that is structurally descriptive of the trade secret chemical constituent, along with the maximum concentration of the chemical in the mixture. The chemical is reported on the TRI Form R using this generic name, and the threshold and release calculations are based on this concentration level. The supplier must provide this notice with the first shipment of the product in each calendar year and must attach the notice to the MSDS if one is required.

The information reported to EPA and to states is made publicly available by a variety of means, the most visible of which is the modem-accessible computer database.⁴² Administered by the National Library of Medicine, the database contains the raw information reported by facilities, in much the same way that legal research databases contain the text of cases. The data are not interpreted, and no effort is made to aggregate or group release data (for example, by state or by industry).⁴³ An unfortunate consequence of EPA’s attempts to accommodate demand for data from the database before it had been fully tested, quality checked, and made ready for general access is the misperception that the database contains errors that make it unreliable. This problem has been compounded by an unusually large number of sometimes extensive revisions to prior filings, which have resulted where reporting facilities have not clearly identified the later reports as revisions. To be sure, there are the usual start-up problems and unavoidable keystroke errors; however, these can be expected to diminish over time, and the story told by the overall figures has not changed as the data on releases by individual facilities are made more accurate.

The scale and specificity of the information gathered under § 313 are unprecedented in federal environmental law, yet one of the recurring criticisms of the TRI program is that it does not gather enough data, and that the information describing annual aggregate releases of chemicals into the environment is insufficient to measure the risk posed by these releases. TRI release data do not indicate whether the releases were steady over the course of the year or were released in short-term

³⁸40 C.F.R. § 372.30(b).

³⁹EPCRA § 313(g)(2), 42 U.S.C.A. § 11023(g)(2). As a corollary to this provision, the regulation requires that the facility maintain for three years the records it uses to arrive at the various calculations and estimates reported on a TRI Form R, and that it provide those records to EPA upon request. 40 C.F.R. § 372.10. This recordkeeping requirement partially fills the gap left by the lack of any authority for compliance inspections under Title III.

⁴⁰40 C.F.R. § 372.45.

⁴¹The trade secret standards that apply in this case are not those used under Title III, but those used under the OSHA HCS. 40 C.F.R. § 372.45(e).

⁴²The provisions of SARA Title III that require EPA to make TRI data publicly available also apply to the pollution prevention data collected under the Pollution Prevention Act of 1990. *See* Pollution Prevention Act § 6607(e), 42 U.S.C.A. § 13106(e); EPCRA § 313(h), (j), 42 U.S.C.A. § 11023(h), (j).

⁴³Several citizen organizations, including the National Wildlife Federation and the Natural Resources Defense Council, have analyzed and interpreted TRI data and EPA has published reports summarizing the data. *See* EPA, *Toxics in the Community: The National and Local Perspectives* (1990); EPA, *The Toxics-Release Inventory: A National Perspective* (1989); NWF, *The Toxic 500* (1989); NRDC, *A Who’s Who of American Toxic Air Polluters* (June 1989).

“bursts” or “peaks.” Largely for technical reasons, EPA put off determining whether these peaks should be reported when it published the final § 313 rule.⁴⁴

On August 27, 2013, EPA required that facilities submitting non-trade-secret TRI forms must use EPA’s online software, called “TRI-MEweb,” effective January 21, 2014.⁴⁵ Trade secret information must still be submitted in paper form.

**§ 14:160 Routine and intermittent reporting by covered facilities:
Chemical disclosure and the public’s right to know—Trade
secrets**

SARA imposes new and demanding constraints on the regulated community’s ability to keep confidential information secret. Consonant with its public disclosure mission, Title III makes the withholding of information as confidential more difficult than has traditionally been the case under other federal environmental laws. While limited protection is available in certain circumstances, there are situations in which a company may not withhold information that would otherwise qualify for trade secret protection.¹ As a result, it is extremely difficult for businesses to justifiably withhold any information required to be reported under Title III.

Under most environmental laws, an exceedingly broad category of information, generally referred to as confidential business information (CBI), is protected from public disclosure.² CBI is any information that a company considers sensitive; bid terms, production figures or processes, and similar information is usually protected from public disclosure.³ Often, for example, when a manufacturer submits to EPA its notice of intent to produce a new chemical, the notice’s public version does not disclose the name of the company, the name of the chemical to be produced, its intended or expected uses, or the amount proposed to be produced.⁴

Title III protection for private business information is wholly different. Only trade secrets are protected. Although somewhat incapable of any precise definition, a trade secret is usually understood to be information that is continuously used in a business, and that gives the business an advantage over competitors that do not know of or use the information.⁵ This definition is narrower than that of CBI: while a trade secret clearly qualifies as CBI, not all CBI is a trade secret. The chief differences between trade secret information and CBI are that trade secret information must be used *continuously* in a business (as opposed to temporal or ephemeral information, such as the terms of a bid); that it must provide an advantage over *competitors* (as opposed to protection from all business entities, such as from a supplier that may increase the price of critical goods); and above all, that it must be truly *secret* and unknown by others in the industry. Secret formulas and novel processing or manufacturing methods are common trade secrets.

To gain protection, a claimant must be able to prove that the information is a trade secret *at the time the claim is filed with EPA*. The criteria used by the Agency

⁴⁴53 Fed. Reg. 4500, 4514 (Feb. 16, 1988).

⁴⁵78 Fed. Reg. 52860 (Aug. 27, 2013) (codified at 40 C.F.R. § 372.85(c)).

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¹Confidentiality protection is not available for the identity of a chemical that is the subject of an emergency release and is reported under § 304, and limited disclosure to “health professionals” in “medical emergencies” is mandated. *See* § 14:156 (§ 304 emergency release notifications); § 14:160 (disclosure to health professionals).

²*See generally* 40 C.F.R. Part 2 (EPA’s confidential business information regulations).

³*See* Restatement First, Torts § 759 (1939).

⁴*See, e.g.*, 54 Fed. Reg. 29778, 29778 to 29779 (July 14, 1989) (TSCA PMNs).

⁵*See* Restatement of Torts § 757, comment b (1939); R. Milgrim, Trade Secrets § 2.02 (1986).

to ensure the validity of a claim are derived from the common law definition: that the information has not been disclosed to anyone not already bound by a confidentiality agreement and that reasonable measures to protect its confidentiality have been taken; that the information has not been and is not required to be disclosed under some other state or federal law; that public disclosure is likely to cause substantial competitive harm; and that the specific chemical identity is not readily discoverable through reverse engineering.⁶ However, the functional definition of a trade secret under Title III is more restrictive than that developed under the common law.⁷ This is a result of the most significant barrier to protection for information submitted under Title III: the provision that of all the information a company must disclose, only the chemical identity—the specific chemical name and CAS Registry number (if any)—may be withheld from a report. The trade secrecy provisions of Title III are applied to data gathered under the Pollution Prevention Act as well, so that all data required to be reported must be disclosed on the report.⁸

EPA's experience with trade secret claims in the first several rounds of reporting indicates that the regulated community has so far had a difficult time grasping the concept of a Title III trade secret as well as determining when it is appropriate to file a claim. The complex requirements for filing and initially justifying a claim have also caused some difficulty. For example, in the first year of reporting, nearly 200 trade secret claims were filed for § 313 TRI reports. Most of these proved to be unnecessary, however, and following an effort by the Agency to weed out claims that were inappropriately filed, the number dropped to just 45.⁹ An increased awareness of the reporting requirements was evidenced during the second and third years of reporting when the number of claims dropped to approximately 100 per year. EPA again weeded out a large majority of these claims (80–90 per year) that were inappropriately filed. Most of the remaining claims that were reviewed for substantive validity were found to be legally insufficient.¹⁰ In light of the stiff \$25,000 penalty for filing a “frivolous” trade secret claim (there is no discretion to adjust the penalty

⁶EPCRA § 322(b), 42 U.S.C.A. § 11042(b).

⁷The generally accepted definition of a trade secret is that of Restatement of Torts § 757, comment b (1939), and it has been adopted for use under Title III. See 40 C.F.R. Part 350, app. A. The statute's additional restrictions, however—particularly the limitation on what can be claimed as a trade secret (only the chemical identity)—so cuts back on what may be withheld for business confidentiality reasons that relatively few trade secret claims have been successful. See this section notes 9-10 and accompanying text. One other significant restriction of the Title III standard is that the harm caused by disclosure must be *substantial*, as opposed to merely being of “value” to the trade secret owner. In addition, the statute gives special emphasis to the potential for discovery of the trade secret chemical information by “reverse engineering,” beyond the Restatement's general consideration of the “ease or difficulty” of determining the trade secret from available information. EPCRA § 322(c), 42 U.S.C.A. § 11042(c); H.R. Conf. Rep. No. 962, 99th Cong., 2d Sess. 304 (1986). These provisions result in Title III trade secrets being something of a subset of all trade secrets.

⁸Pollution Prevention Act § 6607(c), 42 U.S.C.A. § 13106(c).

⁹Because the final trade secrecy rule was published nearly a month after the July 1, 1988, deadline for § 313 TRI reports, every submitter of a trade secret claim in connection with a TRI report was provided with a copy of the final rule and given the opportunity to conform its claim to the final rule's requirements. See 53 Fed. Reg. 28788 (July 29, 1988). It was after the completion of this effort, in December 1988, that EPA's Office of Toxic Substances began the first reviews of the substantive validity of Title III trade secrecy claims.

¹⁰Of the more than fifty claims reviewed only one was found to have satisfied all the trade secrecy criteria. See *In re Americal Corp.*, No. TS-313-87-5 (final approval granted May 16, 1989). Many of the trade secrecy claims for chemicals reported under § 313 were denied because the chemicals had been released to air or water media. Under the Clean Air and Clean Water Acts, data concerning discharges to air and water are not eligible for confidential treatment as a matter of law because they are considered “emission” or “effluent” data. Because such data is by statute designated as public information, no legally sustainable trade secrecy claim can be made when it is reported under SARA Title III. See EPCRA § 322(b)(3), 42 U.S.C.A. § 11022(b)(3) (information may not be withheld as a trade secret if

amount), companies must file trade secret claims with care.

It is not always necessary to file a trade secret claim with EPA in order to preserve a trade secret, and there are good business reasons to avoid filing a claim if at all possible. A “trade secret” designation acts as a kind of red flag for competitors to examine the chemical report more closely in an attempt to determine the secret matter. In addition, EPA’s policy of reviewing claims regularly jeopardizes a trade secret claim’s continuing viability.¹¹ And because of the cumbersome and time-consuming requirements for fully justifying a trade secret, protection should be claimed only for the “crown jewels” of a company; marginal claims should be avoided.¹²

True secrecy is best maintained if no claim needs to be filed. Therefore, it is prudent to structure reporting of trade secret-related information so as to avoid the need to file a claim; in other words, one should only be filed as a last resort.

The ability to effectively hide a trade secret in plain sight will most often be presented in the context of a chemical mixture in which the critical information is the particular combination of chemicals in the mixture (*i.e.*, the proportions, not necessarily the identity, of the mixture’s constituents). Instead of reporting the mixture as a whole on a single MSDS, which could trigger the need to file a protective claim, a company can report each of the mixture’s ingredients individually (one MSDS per chemical constituent). This method provides no indication that the individual chemicals are components of a secret mixture, much less an indication of the proportions of the ingredients in the mixture. This manner of reporting can also work for § 312 Tier II reports and § 313 TRI reports.¹³ It works especially well when a facility reports multiple chemicals, only some of which are present in the secret mixture; the MSDSs for the secret mixture’s constituents are effectively buried among all the MSDSs reported by the facility. It also works well when a chemical has multiple uses at a facility, both secret and non-secret. If the chemical is reported using a single filing (as opposed to multiple MSDSs or Tier II reports for each mixture in which it is present), there is no indication that it is present in any particular mixture or in any particular proportion.

Section 311/312 reports regarding mixtures may also avoid the need for trade secret claims as the result of a loophole created by the various OSHA HCS and Title III reporting requirements. Under OSHA requirements a mixture’s trade secret components need not be listed on the MSDS;¹⁴ the mixture may be reported as a whole, by common or trade name only. EPA has therefore taken the position that no trade secret substantiation needs to be filed for the mixture’s trade secret

it is “required to be disclosed . . . to the public under any . . . Federal or State law”). Accordingly, pursuant 40 C.F.R. § 2.207, EPA’s Office of General Counsel issued a “class determination” that all air or water release data reported under § 313 constituted emission or effluent data under the Clean Air Act or Clean Water Act, respectively, and therefore could not be claimed trade secret when reported under SARA Title III. *See* Class Determination 7-89: Disclosure of Effluent and Emission Data Obtained Under Title III of SARA, the Emergency Planning and Community Right-to-Know Act. EPA indicated its intention to develop this “class determination” in the preamble of the final rule on trade secrecy. *See* 53 Fed. Reg. 28772, 28776 (July 29, 1988). The class determination has since been challenged in administrative appeals of six cases in which it was used to deny trade secrecy claims. *See* *In re* Dixie Chem. Co., Nos. TS-313-87-22, TS-313-88-09, TS-313-88-10; *In re* Kaneka Tx Corp., No. TS-313-87-25; *In re* BASF Corp., No. TS-313-87-26, TS-313-88-16. EPA has also issued a proposed rule that would amend 40 C.F.R. Part 2 and clarify that Form R air and water data constitutes emission and effluent data, and cannot be accorded confidential treatment. *See* 54 Fed. Reg. 38156 (Sept. 14, 1989).

¹¹*See* 53 Fed. Reg. 28772, 28775 (July 29, 1988).

¹²Industry, EPA Speak on Trade Secret Compliance, Community Right-to-Know News, July 8, 1987, at 9.

¹³Indeed, this manner of reporting is required under § 313. Chemicals must be reported individually; it is a violation of reporting requirements to report on a mixture as a whole. *See* § 14:159.

¹⁴29 C.F.R. § 1910.1200(i).

components withheld from the MSDS. A significant percentage of first-year trade secret claims for MSDS reports were subsequently withdrawn as unnecessarily filed as a result of this loophole.¹⁵

Nevertheless, there will be instances in which chemical reports, however structured, will disclose trade secret information (for example, where the secret relates to a mixture's *use* rather than its composition). In such cases, it is necessary to file a trade secret claim with EPA.

Trade secret claims are permitted for reports filed under §§ 303, 311, 312 (Tier II only), and 313. Claims are not permitted for any chemical that is the subject of a § 304 emergency release notification, and claims are not necessary for § 312 Tier I filings because those reports do not disclose chemical identities.

In every case, the claim must be justified or explained "up front," that is, when the chemical report is filed. Failure to justify a claim when it is filed may result in a penalty or even denial of the claim for failure to document entitlement to trade secret protection. This "up front" showing is not unlike an offer of proof: essentially, a claimant must briefly make out a *prima facie* case of trade secrecy.

EPA has devised a summary reporting form, generally referred to as the "substantiation form,"¹⁶ for this purpose. It contains several questions that a claimant must answer, and it is designed to provide sufficient information for EPA to make a threshold determination of whether the claim qualifies as a *bona fide* trade secret under the statutory and regulatory criteria.¹⁷ The substantiation form is intended to be sufficiently straightforward that a facility manager will be able to complete it adequately along with the underlying chemical report, although in some of the more complex cases legal counsel will be needed.¹⁸

Ordinarily, both "sanitized" (public) and "unsanitized" (confidential) versions of both the underlying chemical report and the substantiation form must be prepared. A "sanitized" filing is one in which the chemical identity is deleted and replaced with a generic name.¹⁹ An "unsanitized" filing is the version that contains the chemical identity claimed to be a trade secret. Both the sanitized and unsanitized versions are sent to EPA; sanitized versions *only* are sent to the state or local authorities that receive the underlying chemical reports.

Since January 21, 2014, reporting that does not involve trade secrets must be done electronically using EPA's TRI-MEweb.²⁰ EPA has posted instructions online related to reporting,²¹ along with instructions specific to submitting trade secret information.²² The following discussion briefly details when and how to file a complete trade secrecy claim under each of the five reporting sections. Original cop-

¹⁵See Horn, How the Environmental Protection Agency Handles Trade Secrecy Claims Under the Community Right-to-Know Law, BNA Chemical Regulation Reporter, Mar. 3, 1989, at 1747, 1748.

¹⁶The form was published at 53 Fed. Reg. 28889 (Aug. 1, 1988).

¹⁷See EPCRA § 322(b)(1)-(4), (c), 42 U.S.C.A. § 11042(b)(1)-(4), (c).

¹⁸In general, the information on the substantiation form must explain and describe the trade secret, what measures have been taken to protect it from disclosure, how disclosure of the chemical name on the underlying chemical report would disclose the trade secret, and how disclosure would cause competitive harm to the claimant. See 40 C.F.R. §§ 350.7, 350.13.

¹⁹A substantiation form may contain additional confidential information needed to fully explain the claim, which may be deleted from the form's sanitized version. EPCRA § 322(f), 42 U.S.C.A. § 11042(f); 40 C.F.R. § 350.7(d); 53 Fed. Reg. at 28772, 28787 to 28788 (July 29, 1988).

²⁰78 Fed. Reg. 52860 (Aug. 27, 2013) (codified at 40 C.F.R. § 372.85(c)).

²¹See, e.g., EPA, TRI Reporting Forms and Instructions, <http://www2.epa.gov/toxics-release-inventory-tri-program/tri-reporting-forms-and-instructions>.

²²See, e.g., EPA, Instructions for Completing the EPCRA Trade Secret Substantiation Form, EPA 550-B-14-001 (Jan. 2014), http://www2.epa.gov/sites/production/files/2014-01/documents/trade_secret_instructions.pdf; EPA, Trade Secret Submission Forms and Instructions, <http://www2.epa.gov/toxics-rel>

ies of each reporting form—both versions of the chemical report and the substantiation form—must bear an original signature. In light of the heavy fine for a frivolously filed claim, EPA views this requirement as protecting the reporting company by ensuring that the senior management official responsible for the report and the claim has actual knowledge of their contents. The requirement also has obvious advantages for EPA in an enforcement context.

**§ 14:161 Routine and intermittent reporting by covered facilities:
Chemical disclosure and the public's right to know—Trade
secrets—Section 303 reports**

Both § 303 reports are covered by the trade secrecy provisions: the § 303(d)(2) report to the LEPC of any changes occurring at the facility that are relevant for emergency planning purposes, and the § 303(d)(3) response to the LEPC's request for particular information about the facility. No particular format is prescribed for § 303 reports, and the information is usually provided in a letter to the LEPC.¹

Trade secrecy claims are expected to be rare for § 303 reports, as it is usually possible to provide the pertinent information without specifically identifying a chemical. In the unlikely event that the information provided to the LEPC does include trade secret information, a trade secrecy claim must be filed with EPA.

For a claim accompanying a § 303 report, the facility should prepare the letter report to the LEPC in the normal fashion,² but substituting a generic name for the specific chemical identity. No unsanitized or confidential version of the § 303 letter needs to be prepared. Both sanitized and unsanitized substantiation forms must be prepared, however. The letter and sanitized substantiation form must be sent to the appropriate LEPC; all three documents must be sent to EPA.

**§ 14:162 Routine and intermittent reporting by covered facilities:
Chemical disclosure and the public's right to know—Trade
secrets—Section 311 MSDS or list reports**

There are several options for reporting under § 311; the option selected dictates the form of the trade secrecy claim. When reporting by list, it is usually not necessary to file a claim because a mere list of chemicals present at a facility does not ordinarily disclose trade secret mixture or process information. The common exception to this rule of thumb is where a trade secret is disclosed by the linkage of the chemical and the reporting facility. Even so, because § 311 allows reporting by common name, no claim is usually required.

When disclosure of chemical information on a § 311 list does jeopardize a facility's trade secret, substantiation forms need to be filed for each chemical that is claimed trade secret. Sanitized versions of the list and substantiation forms must be prepared (again substituting generic names for chemical identities), and both versions of the list and all substantiations must be sent to EPA headquarters. Sanitized versions of the list and substantiations must be provided to the SERC, LEPC, and local fire department.

When reporting by MSDS, there is no need to create an unsanitized version because if prepared according to OSHA specifications, an MSDS for a trade secret chemical or mixture will not contain any trade secret information. A copy of the MSDS and both sanitized and unsanitized substantiations must be sent to EPA

[ease-inventory-tri-program/trade-secret-submission-forms-and-instructions](https://www.epa.gov/epaosopr/ttri-program/trade-secret-submission-forms-and-instructions).

[Section 14:161]

¹See § 14:155.

²See § 14:155.

headquarters, and the MSDS and sanitized substantiation sent to the SERC, LEPC, and fire department.

**§ 14:163 Routine and intermittent reporting by covered facilities:
Chemical disclosure and the public's right to know—Trade
secrets—Section 312 Tier II reports**

Section 312 Tier II reports are handled very much like § 311 reports. Both sanitized and unsanitized versions of these chemical reports and substantiation forms must be prepared and sent to the same federal, state, and local authorities as under § 311. The unsanitized version must disclose both the chemical name and CAS number, while the sanitized version must use a generic name in its place. A claim is indicated on the face of the Tier II form by a check in the designated box; both sanitized and unsanitized versions of a trade secret submission should be checked "trade secret" to avoid confusion.

No claim needs to be filed with EPA regarding the *location* of chemicals at a facility. Confidential location information should not even be sent to EPA, but only to the state or local entity that requested it.

**§ 14:164 Routine and intermittent reporting by covered facilities:
Chemical disclosure and the public's right to know—Trade
secrets—Section 313 TRI reports**

Trade secret claims for § 313 TRI reports are handled somewhat differently than claims for other Title III chemical reports. Sanitized and unsanitized versions of both the Form R report and the substantiation form must be prepared. All four documents must be sent to EPA, and sanitized versions must be sent to the designated § 313 recipient in the state in which the facility is located; this may or may not be the SERC. EPA's Form R reporting package lists the current state Form R recipients.¹

A trade secrecy claim is indicated on a Form R report in two different ways, depending on the version of the Form R being used. The first year's Form R contained places in which to indicate a claim on both the first and third pages (the latter page being where the chemical identity was reported). This caused some difficulties, and Form R was modified in its second year so that a trade secrecy claim is indicated only on the first page. It is best to use the most current version of the reporting form because it will decrease the likelihood of inadvertent reporting errors that a facility would need to later correct.

A facility completing a Form R for a chemical claimed to be a trade secret should check the box on page one indicating a claim on both the sanitized and unsanitized versions,² and should check, as appropriate, the box indicating a sanitized or unsanitized version. On the first year's form, the box on page three indicating a trade secret chemical should be checked on both the sanitized and unsanitized versions; on the revised form, this box does not exist. The unsanitized version of either the original or revised Form R should include the chemical name, CAS number (unless a category chemical), and generic name; the sanitized version should provide only the generic name.

Special consideration must be given to claims accompanying § 313 filings report-

[Section 14:164]

¹See, e.g., EPA Office of Toxic Substances, Toxic Chemical Release Inventory Reporting Form R and Instructions (rev'd Jan. 1989).

²Many sanitized versions have been erroneously, but understandably, checked "no" because they technically do not contain trade secret information.

ing discharges to air and water media. EPA has issued a “class determination” identifying fugitive and point discharges to air that are reported on Form R as “emission” data under the Clean Air Act, and identifying point and non-point discharges to water that are reported on Form R as “effluent” data under the Clean Water Act.³ These Acts prohibit confidential treatment of emission and effluent data,⁴ which means that no trade secrecy claim can be maintained for a chemical discharged to those media.⁵ In the past, EPA has also proposed to amend the regulatory definitions of “effluent” and “emission” data to make this change.⁶

**§ 14:165 Routine and intermittent reporting by covered facilities:
Chemical disclosure and the public’s right to know—Trade
secrets—Substantiation review**

Either EPA or a member of the public may initiate the review of a claim to determine its substantive validity. Anyone may petition EPA to review a particular claim simply by requesting in writing that the claim be reviewed.¹

EPA must complete its threshold determination of whether the claim is valid or invalid within thirty days following receipt of a petition to disclose the trade secret chemical. Following notification that the claim is initially valid, the trade secret claimant has thirty days to provide affirmative evidence proving the truth of the assertions made in the substantiation form. If the claim is denied at any point in the process (either following the initial review or upon evaluation of the supporting information), the decision is appealed first to EPA’s Office of General Counsel and then to federal district court. Petitioners also have limited rights of appeal.² The whole review process must be completed within nine months.³

Full and complete substantiation of a claim, and its review by EPA, should not be taken lightly. The trade secret provisions of Title III reach beyond the program’s strict statutory and regulatory boundaries: The restrictive confidentiality provisions may work as a “can opener” for other information reported to EPA as confidential under other laws, resulting in public disclosure of information previously protected. For example, information on the production quantity of a chemical may be classified as CBI under TSCA,⁴ but may not qualify as trade secret information under Title III. The resulting disclosure of this information could then be used to defeat continued protection of that CBI under TSCA.⁵

³Class Determination 4-89, “Disclosure of Effluent and Emission Data Obtained Under Title III of SARA, The Emergency Planning and Community Right-to-Know Act” (July 8, 1989).

⁴Clean Water Act § 308(b), 33 U.S.C.A. § 1318(b); Clean Air Act § 114(c), 42 U.S.C.A. § 7414(c).

⁵The second statutory criterion for trade secrecy, that the information claimed as a trade secret is not required to be disclosed to the public under another federal or state law, is not satisfied for this class of data. EPCRA § 322(b)(2), 42 U.S.C.A. § 11042(b)(2).

⁶54 Fed. Reg. 38156 (Sept. 14, 1989) (proposed revisions to 40 C.F.R. §§ 2.301, 2.302).

[Section 14:165]

¹40 C.F.R. § 350.15. Although the regulations only require that the request include a copy of the Title III report that is the subject of a trade secret claim (to aid EPA in identifying the precise claim to be reviewed), public petitioners are not limited to this and may submit any information they may deem relevant regarding why the claim is invalid.

²EPCRA § 322(d), 42 U.S.C.A. § 11042(d); 40 C.F.R. § 350.17.

³EPCRA § 326(a)(1)(B)(vi), 42 U.S.C.A. § 11046(a)(1)(B)(vi).

⁴TSCA § 14(c), 15 U.S.C.A. § 2613(c); *see* § 16:4.

⁵Disclosure would, of course, not be automatic. Either a Freedom of Information Act request for the information would have to be filed with the Agency, or EPA would have to initiate a confidentiality determination on its own, under the Agency’s general CBI regulations at 40 C.F.R. Part 2.

**§ 14:166 Routine and intermittent reporting by covered facilities:
Chemical disclosure and the public's right to know—Disclosure
to governors, congress, and health professionals**

Trade secret information may be shared among states under Title III. Governors may request the unsanitized versions of trade secret submissions received by EPA from facilities in the requesting governor's own state or any other.¹ The intent behind access to trade secret data from other states is unexplained, but it seems designed to permit states to compare data on related or similar facilities that have made trade secrecy claims.² The law does not explicitly limit the persons to whom the governor may disclose the requested trade secret information, but the Conference Report indicates that disclosure should be limited to state employees, a position mirrored in the trade secret rule.³

Congress has also reserved for itself the right to unrestricted access to trade secret information; this provision is common, and does not present any unique issues.⁴

"Health professionals" are permitted conditional access to trade secret data for treatment of exposed individuals. There are three broad categories of conditions under which access is allowed; the requirements for access vary slightly according to the specific situation. In none of these cases, however, may the facility interpose the existence of a trade secrecy claim under § 322 as a barrier to disclosure.

First, in the event of a medical emergency, a facility owner or operator must give a requesting doctor or nurse the identity of the chemical to which an individual is exposed.⁵ The definition of "health professional" is unfortunately and unnecessarily restrictive; it should include ambulance paramedics and other rescue personnel who are among the first responders to chemical emergencies. The definition of "medical emergency," on the other hand, is more flexible, and leaves the determination of whether an emergency exists to the discretion of the requesting health professional. The identity must be provided immediately upon request, and no confidentiality agreement may be required as a precondition to disclosure, although one can be executed later. Note, however, that if the exposure is the result of a § 304 emergency release, no trade secrecy claim may be lodged, and no post hoc confidentiality agreement is necessary.

Second, a health professional may gain limited access to trade secret information if it is needed for nonemergency diagnosis or treatment of an exposed individual.⁶ Access under these conditions requires a prior written request to the owner or operator specifying that the health professional has a reasonable basis to suspect that the information is needed for diagnosis or treatment, as well as a written confidentiality agreement executed prior to disclosure.

[Section 14:166]

¹EPCRA § 322(g), 42 U.S.C.A. § 11042(g).

²See H.R. Conf. Rep. No. 962, 99th Cong., 2d Sess. 306 (1986).

³The Conference Report notes that EPCRA § 325(d)(2), 42 U.S.C.A. § 11045(d)(2), which imposes criminal penalties for willful disclosure of trade secret information, applies to state employees, but does not mention whether it applies to members of SERCs. H.R. Conf. Rep. No. 962, 99th Cong., 2d Sess. 306 (1986). The statute does not make this distinction, however, and while § 325(d)(2) applies to any person, which would clearly include state employees, § 322(g) (permitting access by states to trade secret information) does not impose any restrictions on access, thus seeming to permit a governor to allow the SERC direct access. It is only the trade secrecy rule that restricts access by non-state employees. 40 C.F.R. § 350.19.

⁴Compare EPCRA § 322(i), 42 U.S.C.A. § 11042(i) with TSCA § 14(e), 15 U.S.C.A. § 2613(e); Clean Water Act § 308(d), 33 U.S.C.A. § 1318(e); CERCLA § 104(e)(7)(D), 42 U.S.C.A. § 9604(e)(7)(D).

⁵EPCRA § 323(b), 42 U.S.C.A. § 11043(b).

⁶EPCRA § 323(a), 42 U.S.C.A. § 11043(a).

Third, a health professional may have access to trade secret information for the purpose of conducting longer-range studies and analyses, as specified in the statute.⁷ There are greater restrictions on disclosure under these circumstances. For example, the health professional must conduct the study under the auspices of the state, and the statement of need must describe the reasons for which access is required with greater particularity. However, once the criteria are satisfied, there is no discretion to deny access.

§ 14:167 Federal, state, and citizen enforcement of Title III

Federal, state, and local officials, as well as citizens, all share enforcement authority for Title III. Generally, each has the authority to enforce those provisions that matter most to it. For example, SERCs and LEPCs, but not citizens, may sue a facility for its failure to supply the LEPC with an emergency planning notification under § 302(c) or with information requested under § 303(d), since this is key information for emergency planning purposes. Initially, there was only a paucity of citizen enforcement; only one action was filed through mid-1990.¹ Citizen enforcement of EPCRA has increased dramatically in the past several years, however. Federal enforcement has typically been more vigorous, particularly under § 313.²

Federal enforcement is authorized for most, but not all, Title III reporting requirements. Overall, however, the enforcement scheme of Title III, especially the stiff penalties provided for noncompliance, is clear evidence of Congress' intent to "ensure that citizens' rights to information [are] backed by the legal tools needed to obtain the cooperation of facility owners and operators."³ Accordingly, EPA's penalty policies are geared toward rewarding the timely reporting of information. It is always better to report late than not at all, however—the later a report is filed, the greater the penalty amount, and so-called "self-confessors" will generally receive lesser penalties than will those noncompliers that EPA has identified.⁴

§ 14:168 Federal, state, and citizen enforcement of Title III—Sections 302 and 303

A violation of the § 302(c) emergency planning notification requirement is addressed initially by an administrative compliance order issued by EPA to the facility. The order may be enforced in federal district court.¹ However, this administrative order authority only extends to facilities that have an EHS above the TPQ, not to facilities that a governor or SERC has designated for participation in emergency

⁷EPCRA § 323(c), 42 U.S.C.A. § 11043(c). These include studies to assess the exposure of persons living in an area, periodic medical surveillance of various population groups, and studies for other similar purposes.

[Section 14:167]

¹*Atlantic States Legal Found. v. Com-Cir-Tek, Inc.*, No. 90772 (W.D.N.Y., complaint filed July 25, 1990) (complaint alleging § 311, 312, and 313 violations); *see also* *Inside EPA*, vol. 11, no. 33, at 12 (Aug. 17, 1990).

²In the first two quarters of fiscal year 1990, for example, seventy-two § 313 enforcement cases were filed by EPA, several seeking nonreporting penalties of nearly a quarter-million dollars each. Overall, in terms of average penalties collected, Title III penalties ranked in the same range as TSCA penalties. EPA, National Penalty Report (1990). By fiscal year 1993, the number of EPA administrative actions initiated under EPCRA had risen to 219. By 2011, this number had risen to over 3,300.

³Heimerman, *Emergency Planning and Community Right-to-Know: A Cooperative Effort*, Nat'l Envtl. Enforcement J., June 1988, at 5.

⁴The Enforcement Response Policy for EPCRA Section 313 authorizes such beneficial treatment. *See* § 14:171.

[Section 14:168]

¹EPCRA § 325(a), 42 U.S.C.A. § 11045(a).

planning.²

Federal enforcement of § 303(d) mirrors that of § 302. If a facility fails to participate in emergency planning by not naming a facility planning coordinator or by not providing required information to the LEPC, EPA is authorized to issue a judicially enforceable order demanding compliance. There is no administrative penalty authority for violations of §§ 302 and 303, although a court may impose a civil penalty of up to \$25,000 per day for failure to obey the court's compliance order.³

State and local entities are empowered to bring judicial actions directly against facilities to enforce §§ 302 and 303, and are not required to first issue administrative orders to comply. Different entities are responsible for enforcement. Only a state or local government may bring an action for a violation of § 302(c), while only the SERC or LEPC may bring an action for a violation of § 303(d).⁴ If EPA has issued a compliance order, however, no state or local action may be commenced against the facility.⁵

Title III does not authorize citizen suits to enforce §§ 302 and 303.

§ 14:169 Federal, state, and citizen enforcement of Title III—Section 304

EPA has administrative penalty authority to enforce the § 304 emergency release notification requirement.¹ EPA has a choice of assessing either a “Class I” penalty under § 325(b)(1), which may not exceed \$25,000 per violation, or a “Class II” penalty under § 325(b)(2), which may not exceed \$25,000 *per day* for each violation, or not more than \$75,000 per day for a subsequent violation.²

The principal distinction between Class I and Class II penalties, besides the lesser amount that may be assessed using the Class I procedures, is the formality of the proceedings used to assess each. Class I hearings can be conducted by a “presiding officer,” who may be an EPA attorney who has not had any *ex parte* communications with the EPA staff responsible for developing the case. Class II procedures require more formal hearings before administrative law judges. Class II procedures are used when requested by a violator, and for assessments for second or subsequent

²An action may be brought against a facility that has been specially designated for participation in emergency planning only by the state or local government under § 326(a)(2), 42 U.S.C.A. § 11046(a)(2); *see* § 14:169. As to designation of facilities that do not have an EHS above its TPQ, *see* § 14:154.

³EPCRA § 325(a), 42 U.S.C.A. § 11045(a). EPA's Civil Monetary Penalty Inflation Adjustment Rules increased that amount to \$37,500 to reflect inflation, effective December 6, 2013. 40 C.F.R. § 19.4 (penalty adjustment and table).

⁴EPCRA § 326(a)(2)(A)-(B), 42 U.S.C.A. § 11046(a)(2)(A)-(B).

⁵EPCRA § 326(e), 42 U.S.C.A. § 11046(e).

[Section 14:169]

¹EPCRA § 325(b)(1)-(2), 42 U.S.C.A. § 11045(b)(1)-(2). *See, e.g.*, In re Murry's, Inc., No. EPCRA-III-001 (EPA administrative complaint filed Dec. 1, 1988) (complaint filed for violation of §§ 304, 311, and 312); In re All Regions Chemical Labs., Inc., CERCLA-I-88-1089 (EPA administrative complaint filed Sept. 30, 1988) (complaint filed for violations of CERCLA § 103 and EPCRA § 304). In In re All Regions Chemical Labs., EPA obtained an administrative judgment of \$20,000 for the CERCLA count and \$69,840 for the Title III count, which was affirmed on appeal by an EPA Judicial officer.

²The treble penalties provision is intended as a deterrent for *repeated* releases by a facility, and not as a punishment simply for *multiple* violations. For example, a treble penalty is not appropriate where a facility acquires knowledge of a second release at the same time as the first release, and there is no basis for imputing any greater fault to the facility with respect to the second release than the first. Genicom Corp., EPCRA-III-057 (Initial Decision July 16, 1992). EPA's Civil Monetary Penalty Inflation Adjustment Rules authorize the maximum penalty for a Class I administrative penalty of not more than \$37,500 to reflect inflation, effective December 6, 2013. The maximum Class II administrative penalty is not more than \$37,500 per day for the first violation and not more than \$117,500 per day for a second or subsequent violation. 40 C.F.R. § 19.4 (penalty adjustment and table).

violations.³ If a civil penalty is assessed administratively, of course, review is available in federal district court.⁴ EPA also has the option of proceeding directly to district court to enforce civil violations of § 304, in lieu of taking administrative action.⁵

Criminal sanctions are authorized if the facility owner or operator “knowingly and willfully” fails to notify emergency response authorities of an uncontrolled escape of an EHS. A first offense may be punished by a fine of up to \$25,000 and imprisonment for not more than two years; for second and subsequent violations the criminal penalties escalate to \$50,000 and five years imprisonment.⁶

There is no explicit authority for state and local governments, or SERCs or LEPCs, to enforce the emergency notification requirement. However, the citizen suit provisions of Title III authorize any “person” to bring an action against a facility for failing to supply a follow-up report to either the SERC or the LEPC coordinator under § 304(c).⁷ Because the statute defines a “person” to include a state as well as any of its political subdivisions, municipalities, or commissions, it would appear that SERCs and LEPCs are permitted to maintain an enforcement action in the same manner as any individual who is authorized to bring a citizen suit under this provision.⁸

Before filing a citizen suit, the plaintiff must give EPA, the state, and the alleged violator at least sixty days notice of the intent to bring the action.⁹ EPA has promulgated notice regulations to supplement the bare statutory requirement.¹⁰ The action to enforce § 304(c) can be preempted by an EPA-initiated enforcement action. In addition to requiring compliance, a court may assess the same penalties in a citizen suit as EPA may assess, and additionally may award litigation costs to the “substantially” prevailing party.¹¹

Three key and often-litigated issues with respect to the adequacy of § 304 reporting are: (1) the sufficiency of the report; (2) the timeliness of the report; and (3) when the release is known to have occurred. This is perhaps to be expected. Because the timing and adequacy of an emergency notification are case-specific, fact-driven assessments, there are no hard and fast rules governing these elements of § 304 notices. However, a rule of reasonableness under the circumstances seems to be expected by ALJs reviewing EPA decisions in this area. For example, no particular method is required for an emergency notification: the SERC or LEPC can be notified by telephone, radio, or in person.¹² Further underscoring the functional, practical purpose served by the emergency notification—to alert emergency responders to the hazard so that they may address the situation in a safe, timely manner—it is not required as a matter of law that the notice include any particular information, other than that there has been a release of a hazardous substance for which an emer-

³The regulations do not distinguish between Class I and Class II violations, but instead refer to EPCRA § 325(c) for reporting violations. 40 C.F.R. § 372.18.

⁴EPCRA § 325(f)(1), 42 U.S.C.A. § 11045(f)(1).

⁵EPCRA § 325(b)(3), 42 U.S.C.A. § 11045(b)(3).

⁶EPCRA § 325(b)(4), 42 U.S.C.A. § 11045(b)(4).

⁷EPCRA § 326(a)(1)(A)(i), 42 U.S.C.A. § 11046(a)(1)(A)(i).

⁸EPCRA § 329(7), 42 U.S.C.A. § 11049(7).

⁹EPCRA § 326(d)(1), 42 U.S.C.A. § 11046(d)(1).

¹⁰40 C.F.R. Part 374; *see* 57 Fed. Reg. 55040 (Nov. 23, 1992).

¹¹EPCRA § 326(c), (f), 42 U.S.C.A. § 11046(c), (f).

¹²Thoro Products Co., EPCRA-VIII-90-04 (Initial Decision May 19, 1992) (discussion with LEPC members present on site of release sufficient for “in person notification”).

gency response is required.¹³ For the same reasons, the administrative courts have been stricter with regard to the requirement for “immediate” notification under § 304. A functional approach has been adopted in this context as well, since the purpose of the emergency notification would be vitiated if the notice is tardy. Consequently, notice given eight hours¹⁴ or even two hours¹⁵ afterwards is not “immediate.” Mitigating the apparent harshness of the “immediacy” requirement is the general principle adopted by EPA and reviewing courts that the obligation to report a release arises at the time that the release in excess of a reportable quantity is known or should have been known by a person subject to EPCRA, and not necessarily from the time of the release event.¹⁶

Constructive knowledge of a release is also relevant in enforcement of the § 304 requirement. Exact knowledge of the amount is not required, and facility personnel are, in fact, expected to use their judgment (erring on the side of safety) in determining whether a reportable release has occurred.¹⁷ In other words, facility operators are expected to know and understand their operations and when routine or non-routine operations are likely to result in reportable releases. Furthermore, notification under other statutes does not relieve a facility of its EPCRA notice obligations; emergency discharges regulated under other statutes and with independent notification requirements do not substitute for an emergency release report under EPCRA.¹⁸

§ 14:170 Federal, state, and citizen enforcement of Title III—Sections 311 and 312

EPA may enforce §§ 311 and 312 both administratively and judicially. A violation of § 311 carries a maximum civil penalty of \$10,000, while a violation of § 312 carries a maximum \$25,000 penalty.¹ While the contents of a § 312 Tier I or Tier II report are set by EPA, the MSDS requirements under § 311 are not. Consequently, EPA does not and probably could not consider the substantive sufficiency of a § 311 report in determining compliance with § 311; EPA may only consider whether the MSDS has been provided in a timely fashion to the appropriate state and local recipients. However, the substantive validity of a § 312 report may be an issue in an enforcement action. For example, some penalty might be assessed even though a § 312 Tier I or Tier II report has been provided to the correct recipients if the report’s contents are so poor as to render it unusable. As a practical matter, most EPA enforcement efforts will be focused against nonreporters.²

State and local governments, and individuals, may also enforce certain violations

¹³All Regions Chem. Labs, Inc., CERCLA-I-88-1089 (Initial Decision and Final Order Dec. 1, 1989). As noted previously, the EPCRA § 304 notification parallels substantially the CERCLA § 103 emergency notification. *See* § 14:156. Single acts that violate both CERCLA and EPCRA are considered separate violations. Genicom Corp., EPCRA Appeal No. 92-2 (Final Decision Dec. 15, 1994).

¹⁴Great Lakes Div. of Nat’l Steel Corp., EPCRA Appeal No. 93-3 (Final Order June 29, 1994).

¹⁵Genicom Corp., EPCRA-III-057 (Initial Decision July 16, 1992).

¹⁶Mobil Oil Co., II-EPCRA-91-0120 (Dec. 27, 1993).

¹⁷Mobil Oil Co., EPCRA Appeal No. 94-2 (Final Decision Sept. 29, 1994) (exact quantity of release not required to constitute “knowledge” of a release in excess of a reportable quantity; rough estimates that indicate that a release is close to, or in excess of, permit limitation sufficient to trigger legal duty to notify).

¹⁸Borden Chem. & Plastics Co., [CERCLA] EPCRA-003-1992 (Order Granting Partial Decision Concerning Liability Feb. 18, 1993) (emergency releases from release valves not in compliance with NESHAP standards under Clean Air Act subject to CERCLA § 103 and EPCRA § 304 reporting, even though Clean Air Act regulations at 40 C.F.R. § 5461.65(a) allow ten days to report emergency releases).

[Section 14:170]

¹EPCRA § 325(c), 42 U.S.C.A. § 11045(c).

²*See, e.g.,* In re Murry’s, Inc., No. EPCRA-III-001 (complaint filed Dec. 1, 1988) (\$12,000 penalty

of §§ 311 and 312. Sections 326(a)(2)(A) and (B) authorize any state or local government to initiate a civil judicial action against a facility owner or operator for failure to submit an MSDS or list under § 311, or a Tier I or Tier II inventory form under § 312. The same penalties are available in a state, local, or citizen's action as in an EPA action, and each day the violation continues is a separate violation. However, individuals are limited to enforcing violations of Tier I reporting only;³ the SERC or LEPC must bring any action for failure to provide a Tier II report.⁴ Citizen enforcement of §§ 311 and 312 requires prior notice, just as for violations of the emergency planning reporting requirements.⁵

§ 14:171 Federal, state, and citizen enforcement of Title III—Section 313

Section 325(c) allows EPA to assess an administrative or judicial civil penalty of up to \$25,000 per day, per report, for each violation of the reporting requirements of § 313. The Enforcement Response Policy (ERP) for § 313 was revised in August 1992, replacing the initial 1988 ERP. The purpose of the ERP is to ensure that the enforcement actions for violations of § 313 and the Pollution Prevention Act are arrived at in a fair, uniform, and consistent manner; that the enforcement response is appropriate for the violation committed; and that persons will be deterred from committing future violations.

Federal § 313 enforcement actions have focused on facilities that fail to submit their Form R reports on or before July 1 of the year the report is due. If a facility fails to submit the required information to the Agency and the states, the public database will not be complete. Therefore, targeting nonreporters has been an Agency priority since the program's onset. EPA is, however, beginning to focus on other violations of § 313 TRI reporting: data quality errors and failure to comply with the recordkeeping or supplier notification requirements. In accordance with the ERP, penalty amounts are graduated according to several factors: the size of the business, the amount of the chemical at the facility, and the number of days the report is late. The larger the company, the greater the amount of chemical involved, and the later the report, the greater the penalty. Certain reductions in penalties are allowed to take into account special circumstances, such as voluntary disclosure. Other adjustments may also be made for the facility's history of prior violations, attitude, and other factors "as justice may require."

In response to several adverse ALJ decisions,¹ the August 1992 ERP does not assess the highest level penalty to all facilities identified by EPA as non-filers of Form R reports. Rather, the ERP established two categories for failure to report in a timely manner. Category I violations are assessed at the highest penalty level and are for those Form R reports that are submitted one year or more after the July 1 due date. Category II violations are for Form R reports that are submitted after the July 1 due date but before July 1 of the following year. The August 1992 ERP uses a per-day formula for calculating Category II violations. Facilities that submit their Form R reports after July 1, but before being contacted by EPA, will be eligible for a penalty reduction under the "voluntary disclosure" section of the ERP, provided that the facility meets certain listed criteria. Facilities that report only after an EPA compliance contact will not be eligible for a reduction on this basis. One rationale

for failure to file both §§ 311 and 312 reports).

³EPCRA § 326(a)(1)(A)(ii)-(iii), 42 U.S.C.A. § 11046(a)(1)(A)(ii)-(iii).

⁴EPCRA § 326(a)(2)(B), 42 U.S.C.A. § 11046(a)(2)(B).

⁵EPCRA § 326(d), 42 U.S.C.A. § 11046(d); *see* 54 Fed. Reg. 3921 (Jan. 26, 1989) (proposed prior notice rules).

[Section 14:171]

¹In re Pease & Curren, No. I-90-1008 (1990); In re CBI Servs., No. EPCRA-05-1990 (1990).

for basing the penalty on the number of days late is that because the Form R information is to be distributed publicly by EPA in a timely manner, at some point a late report effectively denies the public timely access to data to which they are entitled under the Act.²

There are violations other than the lateness with which a report is filed in which a penalty may be assessed. The § 313 ERP specifies an entire range of penalty levels that may be assessed for Form R reports that contain errors; use of a range reflects the range in the relative seriousness of reporting errors. Among the most significant of these reporting errors are those that concern the amount of chemical emissions reported by a facility—such as omitting an entire source of emissions, or emission estimates that are grossly inaccurate. In addition to these data quality violations, the ERP also includes penalty levels for failure to maintain records, failure to supply notification, incomplete or inaccurate supplier notification, failure to maintain complete records, failure to maintain records at the facility, repeat Notice of Noncompliance (NON) violations, and failure to respond to a NON.

The ERP bases penalty amounts for § 313 violations on the following factors affecting the gravity of a violation: the “circumstance” of the violation and the “extent” of the violation. The circumstance level is determined by the seriousness of the violation as it relates to the accuracy and availability of the information to the community, states, and the federal government. The extent level is based on the quantity of each § 313 chemical manufactured, processed, or otherwise used by the facility; the size of the facility (based on the number of employees); and the gross sales of the violating facility’s total corporate entity. Use of the circumstance and extent levels is intended to reflect basic fairness—smaller companies with fewer revenues should be assessed a lesser amount than that assessed larger companies—and consideration of the varying levels of deterrence required for large and small companies. Under this formula, a facility with greater than fifty employees and over \$10 million in gross annual corporate annual sales, and which manufactures or uses the § 313 chemical at issue in an amount greater than ten times the applicable threshold, will fall into the highest penalty category. Facilities using a lesser amount of the chemical, and that have fewer employees and less than \$10 million in sales are eligible for categories specifying a lesser penalty.

Once the gravity-based penalty has been determined, upward or downward adjustments to the proposed penalty amount may be made in consideration of the following factors: voluntary disclosure, past violations for currently “delisted” chemicals, attitude, other factors as justice may require, supplemental environmental projects undertaken by a violator to mitigate a penalty, and ability to pay. Consideration of these adjustments allows the penalty to be “fine tuned” to fit the violation and the violator. Generally, when considering a violator’s “attitude,” EPA will take into account the speed with which the facility came into compliance once it became aware of the violation, its promptness in providing information that is requested by the Agency, and its good faith efforts to settle an enforcement action promptly.³

Less serious errors are usually handled first by contact from EPA. During the

²The original § 313 Penalty Policy considered as an aggravating circumstance whether a facility has reported after it has been notified and/or inspected for compliance with Title III requirements, on the premise that EPA has had to expend its limited resources targeting the facility. *But see* *In re Riverside Furniture Corp.*, No. EPCRA-88-H-VI-406S, slip op. at 12 (final order issued Sept. 28, 1989). The August 1992 ERP treats this form of noncompliance differently. *See In re Pease & Curren*, No. I-90-1008 (1990); *In re CBI Servs.*, No. EPCRA-05-1990 (1990). This approach has been a consistent feature of many EPA penalty policies.

³Penalty reductions have been permitted for a violating company’s pollution reduction measures. For example, a § 313 penalty against the Buckstaff Co. of Oshkosh, Wisconsin, for failing to file a report on xylene was reduced from \$17,000 to \$4,250 for the company’s agreement to switch to lower solvent raw materials.

Reporting Year 1993 processing cycle, three types of mailouts were sent to submitters to inform them that their Form R reports contain errors that prevent the forms from being added to the Toxic Release Inventory System (TRIS). The first of these mailouts was the Notice of Data Change (NDC), which identifies “minor” errors that are corrected at the EPCRA Reporting Center. Such errors occur when, for example, a submitter lists copper as the chemical name on Form R, but provides a close—but incorrect—CAS number. In this circumstance, EPA will correct the CAS number on the submitted Form R. The submitter will then be sent an NDC that documents the change, and a copy of the NDC will be retained in the Form R folder at the EPCRA Reporting Center. The submitter is given twenty-one days to respond to the Agency if there is any problem or concern with the change that has been made.

Notices of Significant Error (NOSEs) are sent concurrently with NDCs, and are issued to obtain voluntary corrections to Form R submissions that allow these submissions to be processed by the EPCRA Reporting Center. There is no compliance language in a NOSE; it is instead a mechanism to speed the correction of faulty data. NOSEs are issued when a submitter uses an invalid Form R report, submits an incomplete form, provides a mismatched chemical name and a CAS number that cannot be corrected by an NDC, or reports multiple chemicals in a single Form R. A submitter is required to send the corrected form(s) to both EPA and the state within twenty-one days of receiving the NOSE. If the submitter does not respond to the NOSE within this time frame, the Agency will issue the facility a Notice of Noncompliance (NON).

The errors prompting a NON are the same as those that cause a NOSE; however, the NON contains compliance language and represents the initial stage of a § 313 enforcement action. Unlike a NOSE, a NON is an original, signed document issued by the Toxics and Pesticides Enforcement Division of the Office of Regulatory Enforcement in EPA headquarters’ Office of Enforcement and Compliance Assurance. If a facility does not respond to a NON, it may be subject to further enforcement action.

Finally—and particularly in light of the “reasonable estimates” requirement for calculating TRI usage and releases—a facility has considerable leeway in determining both whether it is subject to any particular reporting requirement and the amounts manufactured, used, released, etc. Reliance on “loose” estimates can be perilous, however, especially if EPA determines that the estimated figures are not reasonable based on the data that were available to the facility when the report was submitted. In other words, a facility might find itself subject to an enforcement action if it files its Form Rs by the deadline using data it knows, or should know, are not reasonably accurate, simply as a strategy to “buy time” to pull together the necessary information and later submit corrected or revised reports.⁴

Limited state, local, and citizen enforcement is available for a variety of § 313-related provisions. State and local governments have no explicit authority to enforce any § 313 requirement, although “persons,” which include state and local government entities, are authorized to maintain actions to require a facility to submit a TRI Form R,⁵ and to require EPA to respond to a petition to add or delist a TRI chemical⁶ or to create the TRI database.⁷ However, more and more states are passing their own EPCRA-like legislation, which includes enforcement authorities. Citi-

⁴Such reporting could be construed as falsifying information submitted to the government, which is a criminal offense, 18 U.S.C.A. § 1001. Revisions also run the risk of not being identified as such, which would result in greater release figures being attributed to the facility because of multiple filings.

⁵EPCRA § 326(a)(1)(A)(iv), 42 U.S.C.A. § 11046(a)(1)(A)(iv).

⁶EPCRA § 326(a)(1)(B)(ii), 42 U.S.C.A. § 11046(a)(1)(B)(ii).

⁷EPCRA § 326(a)(1)(B)(iv), 42 U.S.C.A. § 11046(a)(1)(B)(iv); see § 14:159.

zen suits are becoming increasingly popular with environmental groups as they have found it possible to win settlements with facilities not in compliance with § 313.⁸

Over the years, EPA's most vigorous EPCRA enforcement has focused on § 313 TRI reporting. Building upon a substantial body of enforcement to assure the integrity of the TRI program and associated database, in July 1996 the Agency conducted an enforcement initiative against forty-seven facilities for non-reporting, data quality, and recordkeeping violations. Total proposed penalties for this initiative was nearly \$3 million, ranging from a low of \$5,000 to a high of \$700,000 per facility. The Agency's purpose in this initiative was to alert the regulated community once again of the requirements of § 313 and § 6607 of the Pollution Prevention Act for both non-reporters and those already in the system. The initiative was also prompted by the expansion of the TRI universe. First, the number of reportable chemicals nearly doubled in November 1994,⁹ and in June 1996 EPA proposed to increase the types of facilities subject to reporting. As a result, the various definitions, exemptions, and other jurisdictional elements have taken on added importance in the enforcement and administration of this law.

Exemptions and Exceptions. The "article" exemption to § 313 reporting¹⁰ is tied to the law's purpose of having facilities that manufacture, process, or use chemicals above a certain threshold report the amounts of those chemicals released into the environment. Therefore, not unexpectedly, for a product to be considered an "article" and exempt from reporting there must be no release of chemicals from the article under ordinary operating conditions.¹¹ However, the exemption does not apply where a facility purchases and processes a listed chemical in amounts greater than the threshold to produce articles,¹² nor where a listed chemical is brought to the facility and incorporated into an article.¹³

The "de minimis" exception¹⁴ applies only where a listed chemical's presence in a mixture is less than 1 percent (or less than 0.1 percent of an OSHA HCS-defined carcinogen). Therefore, the exception does not apply where a facility processes or uses a listed chemical and dilutes it in a mixture to less than 1 percent.¹⁵

The "laboratory" exception to reporting under § 313, an important but exceedingly narrow exception, applies only to those quantities of a listed chemical processed *within* the laboratory, and does not extend to those quantities processed *outside* the

⁸Courts are divided as to whether citizen suits are permissible to recover for retroactive damages in a case where an entity has remedied its reporting deficiencies and the citizen suit does not allege any ongoing reporting violations. See *Atlantic States Legal Found., Inc. v. United Musical Instruments, U.S.A., Inc.*, 61 F.3d 473 (6th Cir. 1995) (holding that citizen suits are precluded where the offending entity had cured its reporting defects after receipt of notice of intent to file the citizen suit). But see *Atlantic States Legal Found., Inc. v. Whiting Roll-Up Door Mfg. Corp.*, 772 F. Supp. 745 (W.D.N.Y. 1991) (holding that even though citizen group alleged no ongoing reporting violations at the time the suit commenced, the citizen suit for civil penalties for failing to comply with reporting requirements in the past was still permissible).

⁹59 Fed. Reg. 61432 (Nov. 30, 1994); see also § 14:159.

¹⁰40 C.F.R. § 372.38(b).

¹¹CBI Services, Inc., EPCRA-05-1990 (Partial Order for Accelerated Decision Feb. 28, 1991).

¹²R.C.A. Rubber Co., EPCRA-031-1990 (Partial Order for Accelerated Decision Aug. 9, 1991).

¹³Tillamook County Creamery Ass'n, EPCRA-1094-03-01-325 (Order for Accelerated Decision Sept. 8, 1995).

¹⁴40 C.F.R. § 372.38(a); see also § 14:159.

¹⁵R.C.A. Rubber Co., EPCRA-031-1990 (Partial Order for Accelerated Decision Aug. 9, 1991) (purchase and process of listed chemical to produce mixture where listed chemical constitutes less than 1 percent of mixture); Tillamook County Creamery Ass'n, EPCRA-1094-03-01-325 (Order for Accelerated Decision Sept. 8, 1995) (listed chemical brought to facility in pure form and diluted to less than 1 percent for use).

laboratory.¹⁶

Trade Name Products Exception. As noted previously, trade name products and secret mixtures present special reporting difficulties. Proof of violations of § 313 reporting requirements where listed chemicals are present in mixtures tends to hinge on whether the facility/user of the trade name mixture has actual knowledge of the mixture's contents. Knowledge is not presumed or imputed in these circumstances, and EPA has the burden of showing that a facility/user of a trade-name product has actual knowledge of the listed chemical's concentration. In addition, a facility is not required to file a TRI Form R report for a listed chemical if the facility discovers or learns of the concentration after the reporting deadline,¹⁷ although the facility would be required to report in the year in which it is aware of the concentration (assuming the reporting thresholds are met).

Listing and Delisting of Chemicals. The TRI list is not static, and changes from year to year—sometimes dramatically, as in the case of the November 1994 expansion, which nearly doubled the list of reportable chemicals.¹⁸ A common question from members of the regulated community is the effect of a proposed or final listing or delisting on their obligation to report in a given year. A proposed listing or delisting does not in any way affect a facility's reporting requirements; only an actual listing or delisting is relevant.¹⁹ If a chemical is removed from the § 313 list, it only alters the obligation to report that chemical prospectively; it does not relieve a facility of the obligation to report its manufacture, use, or processing of that chemical during the year in which reports were required.²⁰ Similarly, the addition of a chemical to a list has only a prospective effect.

“Process” vs. “Otherwise Used.” The distinction between whether a chemical is “processed” or “otherwise used” is important because of the different triggering thresholds for reporting each use. A chemical is “processed” if it is prepared in some way following initial manufacture, usually by incorporation into a final product.²¹ “Otherwise used” is a catch-all term, covering all other activities that are not “processing” or “manufacturing” (defined as the production—as a product, by-product, or impurity—of a chemical, or its importation). Despite these common-sense definitions, there are some difficult judgments to be made at the margins, especially where chemicals are only partially incorporated into an article. In two separate cases, decisions by ALJs have highlighted the difficulty of drawing a clear line of distinction between the two definitions. While individually they appear to be reasonable constructions, together they create an unfortunate, perhaps contradictory, result: where the amount incorporated into an article is “insignificant,” the chemical is “otherwise used”;²² on the other hand, a chemical is “processed” if it is made part of a final product, regardless of the amount that might escape during

¹⁶40 C.F.R. § 372.38(d); Tillamook County Creamery Ass'n, EPCRA-1094-03-01-325 (Order for Accelerated Decision Sept. 9, 1995).

¹⁷San Antonio Shoe, Inc., EPCRA-VI-501-5 (Interlocutory Order Mar. 18, 1993).

¹⁸See also 78 Fed. Reg. 66848 (Nov. 7, 2013) (adding chemical to the list); 79 Fed. Reg. 58686 (Sept. 30, 2014) (same).

¹⁹Agri-Fine Corp., EPCRA-V-019-92 (Order on Discovery Sept. 1, 1995) (assessing effect of proposed delisting on penalty amount).

²⁰Honig Chem. & Processing Corp., EPCRA-II-89-0104 (Order for Accelerated Decision Oct. 11, 1991) (suggesting that EPA could give retroactive effect to delistings).

²¹40 C.F.R. § 372.3; see Am. Desk Mfg. Co., EPCRA-VI-449S (Ruling on Motion for Accelerated Decision Dec. 31, 1991) (key distinction between “process” and “otherwise use” is whether chemical is incorporated into article); Pease & Curren, Inc., EPCRA-I-91-1008 (Initial Decision Mar. 13, 1991) (same).

²²American Desk Mfg. Co., EPCRA-VI-449S (Ruling on Motion for Accelerated Decision Dec. 31, 1991).

processing.²³

§ 14:172 Federal, state, and citizen enforcement of Title III—Sections 322 and 323

Federal enforcement of § 322 violations is limited to two circumstances. EPA may assess a civil or administrative penalty of up to \$10,000 for failure to submit a substantiation form justifying a trade secret claim, and a flat \$25,000 penalty for a claim that is determined to have been filed “frivolously.”¹ No state or local enforcement actions are authorized for trade secrecy violations.

Instead of seeking penalties for unsubstantiated claims, EPA has thus far opted to review the claims and find them insufficiently justified because they lack substantiations.² Because many claims have been filed inadvertently, this is a more expedient method of correcting this reporting error. In addition, NONs are intended to be used to correct such errors prior to seeking penalties.

A “frivolous” claim is undefined by either the statute or the regulation: the normal meaning of the term, however, indicates that a frivolous claim is one that is without merit and should not have been filed. A frivolous-claim penalty cannot be assessed, however, until after the claim has been finally denied and all appeals exhausted; a company should be able to avoid this penalty by withdrawing the claim before the denial becomes final.³

Only EPA and health professionals are authorized to bring an enforcement action for a § 323 violation. No state or local government organizations or citizens are empowered to enforce the section or to seek penalties for a facility’s refusal to provide trade secret information properly requested by a health professional. EPA may assess a penalty of up to \$10,000 in an administrative or judicial action to enforce only § 323(b)—the requirement to provide information in a medical emergency; EPA does not have the authority to enforce other violations of this section.⁴ The health professional who has requested the information may always bring an action to enforce the request, however.⁵

VIII. COMPREHENSIVE GROUNDWATER PROTECTION PLANS

§ 14:173 In general

Portions of the Clean Water Act, Safe Drinking Water Act, RCRA, and Superfund all provide for groundwater protection, as preceding sections in this chapter have explained. Beginning in the 1970s, EPA made several efforts to unite these separate programs into a single groundwater protection effort to be administered by the states. Successive drafts of the Agency’s “groundwater policy” drew sharp criticism from the western states, and failed to secure much support.¹

²³CBI Servs., Inc., EPCRA-05-1990 (Order on Partial Accelerated Decision Feb. 28, 1991).

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¹EPCRA § 325(c)(2), (d), 42 U.S.C.A. § 11045(c)(2), (d).

²See 40 C.F.R. Part 350; see § 14:160.

³EPCRA § 325(d)(1), 42 U.S.C.A. § 11045(d)(1). This occurred in conjunction with the review of a claim of the Kal Kan Company. See *In re Kal Kan Foods, Inc.*, No. TS-313-87-6 (claim withdrawn Mar. 13, 1989).

⁴EPCRA § 325(c)(2), (4), 42 U.S.C.A. § 11045(c)(2), (4).

⁵EPCRA § 325(e), 42 U.S.C.A. § 11045(e).

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¹See generally Comm. on Gov’t Operations, Groundwater Protection: The Quest for a National Policy, H.R. Rep. No. 1136, 98th Cong., 2d Sess. (1984).

In 1986, Congress gave some renewed life to the effort by attaching a “well-head protection” program to the Safe Drinking Water Act reauthorization passed in that year.² The statute authorized financial assistance to the states to help them prepare integrated management plans that would unite and reconcile the federal groundwater protection programs, at least insofar as they affected well fields which served as the sources of public drinking water supply.³ The statute is brief and its history unclear. EPA must approve state plans before providing financial assistance.⁴

The Safe Drinking Water Act Amendments of 1996⁵ also required states to implement source water assessment programs to assess potential threats to drinking water quality.⁶ EPA has issued guidance on the substantive requirements imposed by the wellhead protection and source water assessment programs.⁷

²Safe Drinking Water Act Amendments of 1986, Pub. L. No. 99-339 § 205, 100 Stat. 642, 660–63 (adding SDWA § 1428, 42 U.S.C.A. § 300h-7).

³Safe Drinking Water Act Amendments of 1986, Pub. L. No. 99-339 § 205, 100 Stat. 642, 660–63 (adding SDWA § 1428, 42 U.S.C.A. § 300h-7).

⁴Safe Drinking Water Act Amendments of 1986, Pub. L. No. 99-339 § 205(a), (d), 100 Stat. 600–61 (adding SDWA § 1428(a), (d), 42 U.S.C.A. § 300h-7(a), (d)).

⁵Safe Drinking Water Act Amendments of 1996, Pub. L. No. 104-182, 110 Stat. 1613.

⁶Safe Drinking Water Act Amendments of 1996, Pub. L. No. 104-182 § 132, 110 Stat. 1613, 1673-1675 (adding SDWA § 1453, 42 U.S.C.A. § 300j-13).

⁷EPA, Water: Source Water Protection, <http://water.epa.gov/infrastructure/drinkingwater/sourcewater/protection/epastateandtribalprograms.cfm>.