Flowing Water, Flowing Costs: Assessing FERC's Authority to Decommission Dams

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This year, 2019, marks the 20th anniversary of the removal of the Edwards Dam, one of the first functioning hydroelectric dam to be decommissioned and removed in the United States. It was also the first to be removed under the Federal Energy Regulatory Commission's (FERC's) asserted power to compel such a removal without compensation, an assertion raising legal questions that have yet to be fully resolved. As our hydroelectric infrastructure continues to age, these questions may again come to the forefront.

Part I of this Comment considers the history of dam building in American culture and the development of the current federal statutory scheme that governs utility-operated, nonfederal hydroelectric infrastructure. Part II considers FERC's and its predecessors' role in that statutory scheme, their asserted power to decommission dams unilaterally, and two case studies. Part III analyzes the legal defensibility of FERC's 1994 Policy Statement asserting its authority to decommission dams, and the main arguments as to whether FERC can require utility operators to pay for a decommissioning that was ordered unilaterally or whether the government has to subsidize that removal.

I. Setting the Scene

A. *Hydroelectricity's Deep History in American Culture and Infrastructure*

Dams, both as physical structures and as ideas, are highly impactful pieces of infrastructure. Across the country, they are often directly responsible for urban development, and assisted in the rise of large cities across the country. Indeed, America grew along and because of its waterways. Not coincidentally, of the 150 largest American cities, 130 are located along dammed rivers.[1] In many cases, this population concentration and development was only possible because of dams on those rivers, which established human control over unpredictable waterways.

The raw statistics tell the story: that control has grown to be almost all-encompassing. There are an estimated 91,000 dams in the United States large enough to be consistently surveyed.[2] If the count is expanded to include dams less than six feet in height, the number grows exponentially into the millions.[3] To put that number of dams in context, Bruce Babbitt, Secretary of the Interior under President William Clinton, noted that "for most of this century, politicians have eagerly rushed in, amidst cheering crowds, to claim credit for the construction of 75,000 dams all across America . . . that means we have been building, on average, one large dam a day, every single day, since the Declaration of Independence."[4] These dams put approximately 600,000 miles of what was once free-flowing water behind concrete in the United States, drastically changing the hydrologic processes that shape the continent, bringing almost every river under some level of human control.[5] As of 2019, of all the rivers in the United States greater than 125 miles long, only the

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1. Tim Palmer, Lifelines: The Case for River Conservation 8 (1994).
2. *See* U.S. Army Corps of Engineers, National Inventory of Dams, https://nid.sec.usace.army.mil/ords/f?p=105:113:10547604472299::NO::: (last visited Aug. 24, 2019). The 91,000 number represents dams that "equal or exceed 25 feet in height and exceed 15 acre-feet in storage, [or] equal or exceed 50 acre-feet storage and exceed 6 feet in height," as well as dams that exceed certain hazard thresholds.
3. Dave Owen & Colin Apse, *Trading Dams*, 48 U. Cal. Davis L. Rev. 1043, 1052-53 (2015). "The actual number is significantly higher, for the inventory includes only dams that meet certain size or safety thresholds, and one recent study estimated that an additional two million smaller dams populate the American landscape."
4. Bruce Babbitt, Secretary, U.S. Department of the Interior, Remarks at the Ecological Society of America Annual Meeting: Dams Are Not Forever (Aug. 4, 1998), *available at* http://www.sci.sdsu.edu/salton/DamsAreNotForever.html.
5. Michael T. Pyle, *Beyond Fish Ladders: Dam Removal as a Strategy for Restoring America's Rivers*, 14 Stan. Envtl. L.J. 97, 102 (1995).

Yellowstone and Salmon Rivers are entirely free-flowing, undammed along their entire lengths.[6]

Looking beyond the United States, the best estimate of the number of measurable dams worldwide is 840,000, with about 40,000 of those classified as "large"—taller in height than a four-story building.[7] To put this level of hydrologic control in context, the storage capacity behind the dams large enough to be consistently included in surveys is enough to impound the contents of every one of the world's rivers five times over.[8] While these statistics attempt to measure all dams, the majority are static and serve only to impound water.[9] Dams with hydroelectric generation capability represent a relatively small subset of the total number of dams—approximately 2,300 in the United States, or 3%.[10]

Dams have long loomed large in the American imagination as symbols of engineering ingenuity and technological advance, which has substantially shaped the regulation of their construction and use. The narrator of a depression-era economic development propaganda film, *The River*, captured the American idea of dams representing progress when he noted that "there's no such thing as an ideal river in Nature."[11] That progress in the form of taking rivers out of nature to make them more "ideal" truly arrived with the passage of the Reclamation Act of 1902[12] and the subsequent rise of the "Age of Dams."[13]

According to Marc Reisner, an environmentalist and journalist covering western water policy, what the United States accomplished through dam building is unparalleled in human history as an engineering feat: a fundamental reorganization of a continent's water system to match our needs. Reisner states that, "simply put, the twentieth century has been the Hydraulic Century, the Age of Dams."[14] Even in the midst of the Great Depression, the federal government built the world's five largest structures simultaneously, all dams: Hoover, Bonneville, Grand Coulee, Shasta, and Fort Peck.[15] In the context of the rush to build these engineering marvels, few stopped to consider the ongoing impacts of such structures, let alone whether they could or should ever be removed. They created jobs, produced energy, seemed clean, and as such, did not engender substantial criticism until relatively recently.

Hydroelectric generation varies widely across regions. In the United States, hydroelectric power currently accounts for approximately 7% of energy produced; however, in Canada, it accounts for about 60% of the total energy generation.[16] The benefits of hydroelectric power production have led to the proliferation of plants across the United States and the world. A major factor in this proliferation is that hydroelectric generation involves far fewer emissions and pollution than most other sources of energy at a relatively low cost.[17] While the startup infrastructure costs of building a dam are substantial, hydropower generates electricity cheaply over the long term, with year-over-year costs averaging 2%-4% of original installation cost, less than fossil fuel generation.[18] Further, hydropower projects often provide flood control, recreation, and irrigation benefits to the surrounding area—all public benefits that are quite popular. These benefits lead most commentators to classify hydroelectric generation as a renewable and clean energy source.[19] In fact, it is officially America's largest source of renewable energy, per the U.S. Department of Energy (DOE).[20]

Producing less measurable pollution does not make an energy source clean, however. While water flow is itself a renewable resource, healthy rivers are not. Both industry and environmental groups have recently begun to assess the sweeping environmental consequences of obstructing rivers. Dams alter rivers in a variety of ways: reducing water levels and flow, preventing fish from migrating, altering water temperatures, decreasing oxygen levels, and holding back silt, debris, and nutrients.[21] These impacts are often destructive to fish populations and the communities that depend upon them, producing ecosystem collapse in river systems that have been dammed.[22]

Examining the state of dams today is crucial to understanding why hydroelectric regulation is rapidly becoming more contentious. According to a 2002 Heinz Center

6. Peter M. Lavigne, *Dam(n) How Times Have Changed*, 29 Wm. & Mary Envtl. L. & Pol'y Rev. 451, 457 (2005).
7. Christine A. Klein, *On Dams and Democracy*, 78 Or. L. Rev. 641 (1999) (citing Patrick McCully, Silenced Rivers: The Ecology and Politics of Large Dams 3-4 (1996) (citing estimates of the leading dam-industry association, the International Commission on Large Dams, and defining large dams as those 15 meters or more from foundation to crest)).
8. Klein, *supra* note 7 (citing Benjamin F. Chao, *Anthropological Impact on Global Geodynamics Due to Reservoir Water Impoundment*, 22 Geophysical Res. Letters (1995), noting that the world's reservoirs have an estimated storage capacity of 10,000 cubic kilometers).
9. Klein, *supra* note 7.
10. *Id.*
11. Peter M. Lavigne, *Cultural Myths, Concrete Results, and Whoops Again*, 44 Nat. Resources J. 667, 670 (2004), citing The River (Farm Security Administration 1938). Notably, the film was sponsored and funded by some of the most prolific dam builders of the time—the Works Progress Administration, U.S. Army Corps of Engineers, and the Tennessee Valley Authority.
12. Pub. L. No. 57-161, 32 Stat. 388. The Reclamation Act of 1902 appropriated federal funding for irrigation projects in the American West and created the Reclamation Service (later, Bureau of Reclamation), which would become the single largest dam builder in America.
13. Lavigne, *supra* note 6, citing Marc Reisner, *Western Water and the Limits to Consensus*, Chron. Community, Spring 1999, at 28.
14. *Id.*
15. Lavigne, *supra* note 6, at 458.
16. U.S. Energy Information Administration, *What Is U.S. Electricity Generation by Energy Source?*, https://www.eia.gov/tools/faqs/faq.php?id=427&t=3 (last updated Mar. 1, 2019).
17. Klein, *supra* note 7 (citing Peter J. Kirsch, *Maine Dam Decision Reverberates in the West*, Denver Post, Jan. 29, 1998, at B-07 ("Mainstream environmentalists and the hydroelectricity industry agree that dams are the most environmentally benign and economically viable source of electricity.").
18. International Renewable Energy Association, Working Paper, Volume 1: Power Sector, Renewable Energy Technologies: Cost Analysis Series (2012).
19. Hydroelectric makes up 7%, wind 6.5%, biomass 1.5%, and solar 1.6%. Nuclear generates 19.3%, but is not traditionally classified as a renewable source. U.S. Energy Information Administration, *supra* note 16.
20. *Id.*
21. *See, e.g.*, Katharine Costenbader, *Damning Dams: Bearing the Cost of Restoring America's Rivers*, 6 Geo. Mason L. Rev. 635, 636 (1998); Wilson V. Binger et al., Environmental Effects of Large Dams (American Society of Civil Engineers 1978).
22. Owen & Apse, *supra* note 3, at 1057.

report, the vast majority of dams were constructed for an economic and structural life expectancy of about 50 years; 85% percent of these dams will be 50 years or older by 2020.[23] Many small dams are over 100 years of age. A century's worth of dams are reaching the end of their designed life-spans in a new era of environmental awareness. The options for dealing with dams going forward fall into three buckets: inaction, repair, or removal. This Comment focuses on the removal option and, more specifically, on the potential costs and appropriate allocation of those costs between utilities and the government under our current legal regime.

The most immediate cost associated with dam removal is demolition of the structure and capturing the sediment that accumulates behind said structure. This is a complicated process that can produce an eye-popping initial cost estimate.[24] In many cases though, the long-term costs of dam removal are less than the costs of repair, especially where the other benefits of the dam (i.e., power generation and flood control) are marginal.[25] Even if the removal costs are comparable or higher, dam removal eliminates the need for continued monitoring and risk of further repairs in the future.

We have thus reached a point where dam removal can be considered a mainstream option in public discussions involving this significant aspect of America's aging infrastructure. The vast majority of American dams will reach the end of their scheduled life-span over the coming years, bringing difficult questions to the forefront of utility law. It will become crucial to understand how the removal option might be applied in the context of a statutory scheme that did not contemplate the removal of a dam as a possibility. While *The River* may have reflected the 20th century's Age of Dams, perhaps the 21st century will be reflected by another film: the 2014 film *DamNation*, which notes vividly that "dam owners, impacted communities, and politicians are now reevaluating the usefulness of certain dams and often advocating for decommissioning and removal. Some call it a movement, others call it a generational shift in values."[26]

B. The Federal Statutory Scheme for Hydroelectricity

1. The Federal Power Commission and FERC

Today, hydroelectric power and dam development by utilities is highly regulated by FERC, but the statutory scheme was not always so strict or well-developed. In the early 1900s, when hydroelectric power generation was conceptually demonstrated and construction of large-scale installations began, the U.S. Congress passed legislation to encourage the development of rivers not just as waterways, but as sources of energy. In furtherance of this goal, Congress established the Federal Power Commission (FPC) through the Federal Water Power Act (FWPA) in 1920.[27]

The FWPA established that the FPC would be responsible for the licensing of hydroelectric projects on navigable waterways and on land owned by the federal government, alongside responsibility for interstate electric utilities and the natural gas industry.[28] Prior to this time, despite federal responsibility for navigable waters, Congress had left the regulation of hydroelectric power to the individual states. Until 1903, these congressional permits were given away on a first-come-first-served basis and controlled by the individual states. This led to a contentious debate regarding the balancing of private and public interests that culminated in the FWPA's passage.

Through the first 50 years of dam licensing by the FPC, the process operated as a rubber stamp. In a review of the agency's history, it was described as "ineffective, marred by a lack of money, staff, and interest among the Commissioners."[29] Instead of acting like a watchdog, "the Commission heeded the wishes of the emerging electric utility industry."[30] This is particularly notable in light of the FPC's vigorous enforcement of its other duties, particularly regarding the natural gas industry.[31] During the FPC's time as the regulator of hydroelectric power and dams, tens of thousands of dams were constructed.[32] However, due to the minimal consideration required before a

23. *See* The Heinz Center, Dam Removal: Science and Decision Making 3-4 (2002).
24. Phillip M. Bender, *Restoring the Elwha, White Salmon, and Rogue Rivers: A Comparison of Dam Removal Proposals in the Pacific Northwest*, J. Land, Resources, & Envtl. L. 189, 246 (1997). *See* Slade Gorton, *Can We Build Up Salmon by Tearing Down Dams?*, Seattle Post-Intelligencer, July 22, 1994, at A13. These costs can be quite high in the case of large projects. For example, the final estimated cost of removing the Elwha dams, the subject of a high-profile removal campaign, was around $111 million. *See* Slade Gorton, *A More-Sensible Option for Elwha Dams*, Seattle Times, July 31, 1996, at B5. The costs are far from clear, however, and were the subject of much debate since the proposal was originally made. Earlier estimates had the cost of removal as high as $300 million, and later estimates as low as $20 million.
25. Christopher Scoones, *Let the River Run: Strategies to Remove Obsolete Dams and Defeat Resulting Fifth Amendment Taking Claims*, 2 Seattle J. Envtl. L. 1, 4-5 (2012) ("Removal of a small unsafe dam typically costs less than repairing it. Among ten cases examined by American Rivers, the cost of dam removal cost was only thirty-seven percent of the total estimated repair cost.").
26. DamNation (Patagonia 2014).
27. 16 U.S.C. §§791-821.
28. The law and doctrine of the earlier cases with respect to the protection of navigation, arising from the commerce power, is summarized in the U.S. Supreme Court's opinion in *Gilman v. Philadelphia*, 70 U.S. 713, 724-25 (1865):
    > Commerce includes navigation. The power to regulate commerce comprehends the control for that purpose, and to the extent necessary, of all the navigable waters of the United States which are accessible from a State other than those in which they lie. For this purpose *they are the public property of the nation*, and subject to all requisite legislation by Congress.

    (emphasis added).
29. Sam Kalen, *Historical Flow of Hydroelectric Regulation: A Brief History*, 53 Idaho L. Rev. 1, 25 (2017).
30. *Id.*
31. During the 1940s, the FPC enforced the Natural Gas Act robustly, much to the frustration of the oil industry. This eventually led to the chairman of the Commission being forced out after a Lyndon B. Johnson-led smear campaign. *See* Robert A. Caro, Master of the Senate: The Years of Lyndon Johnson chs. 10-12 (2002).
32. Owen & Apse, *supra* note 3.

permit was issued and the almost nonexistent requirements for environmental protection, most dams were approved and constructed with indifference toward their externalities.[33] By 1940, hydroelectric generation peaked at supplying roughly 40% of the nation's electricity, having more than tripled its total national capacity in just two decades.[34]

This lax attitude by the FPC toward its hydroelectric regulatory duties began to change when it was reorganized into FERC alongside the development of the modern environmentalist movement.[35] In response to the 1973 oil crisis, Congress consolidated various energy-adjacent agencies that had previously been spread across the government into the present-day DOE. Congress insisted, however, that a separate independent regulatory body continue to exist with responsibility for hydroelectric power.[36] As such, the FPC was renamed as FERC and remained associated with but independent of DOE. At that point, FERC adopted the FPC's existing criteria for evaluating dam construction projects, which still excluded significant consideration of environmental concerns.

2. The Electric Consumers Protection Act

Under the Federal Power Act (FPA),[37] an update to the previous FWPA, FERC licenses all nonfederal hydroelectric projects on navigable waterways, including projects operated by utilities. FERC's jurisdiction thus extends to approximately 1,600 hydropower projects, which involves regulation of more than 2,000 dams.[38] The term of a FERC license can be no less than 30 years and no greater than 50 years, and at the end of a license term, the operator must apply for relicensing.[39]

Relicensing is the regulatory process by which an operator of hydroelectric dams applies for and receives a new license before expiration of its old license. FERC has specific enumerated options to proceed under the FPA when an existing license is due to expire: (1) issue a new license to the existing licensee, (2) accept surrender of the license and thus the dam, (3) issue a non-power license ending hydroelectric generation at the site, or (4) authorize federal takeover of the project.[40] Before 1986, FPC/FERC utilized options 2-4 only once, approving every license renewal but one.[41] This earned the agency a reputation for facilitating development, not regulation.[42]

In reaction to this reputation and in an attempt to resolve the inconsistent application of statutes by FERC, Congress passed an overhaul of hydroelectric regulatory law: the Electric Consumers Protection Act of 1986 (ECPA).[43] The ECPA amended the FPA to introduce serious consideration of the environmental impacts of dam construction and operation into the relicensing process. The ECPA essentially expanded the FPA to require FERC to consider environmental impacts of construction and ongoing operation equally alongside power generation and economic benefits that the dam offers. With these changes came the implicit threat that FERC would begin to respond to dam license renewal applications with its full range of available statutory options.

Congress, in considering the law, noted that the ECPA "clarifies and improves the Commission's licensing process in assuring adequate environmental protections while retaining the basic requirement that all projects, whenever licensed, be best adapted to a comprehensive plan for developing a waterway or waterways."[44] Through this language, Congress charged FERC with offering not just token consideration of non-developmental values as before, but with ensuring that it afford equal consideration to those values alongside the developmental and power purposes of the ECPA.[45] Congress observed that as time passes, "relicensing is not to be the same as it is today."[46] Cultural attitudes toward the relative importance of energy development and environmental protection change, and those changes should be considered when contemplating issuing a new license to operate. Congress further noted that the scrutiny will likely be greater over time and that "licenses issued in past years must be re-examined and justified at relicensing in light of today's standards and concerns."[47]

For utility projects that are being considered, FERC must weigh a multitude of factors to determine the feasibility and impact of the project. When FERC is considering a licensing application, its many tasks include (1) reviewing

33. Sam Kalen & Robert Nordhaus, Energy Follies: Missteps, Fiascos, and Successes of America's Energy Policy 22 (2018). According to the authors: "after WWII, hydroelectric power became a symbol for how federal programs could energize our economy, and policy-makers correspondingly perceived hydroelectric resources as immune from both the challenges confronting the supply/demand balance for coal and the resource constraints of oil and gas." *See also* John D. Echeverria et al., Rivers at Risk: The Concerned Citizen's Guide to Hydropower 8 (1989) ("During the agency's first 60 years, it only once turned down a project to protect recreational and aesthetic values of a river.").
34. DOE Office of Energy Efficiency & Renewable Energy, *History of Hydropower*, http://energy.gov/eere/water/history-hydropower (last visited Aug. 14, 2019).
35. Department of Energy Organization Act of 1977, Pub. L. No. 95-91, 91 Stat. 565.
36. 42 U.S.C. §7171(a) ("There is established within the Department an independent regulatory commission to be known as the Federal Energy Regulatory Commission."). FERC is independent in that its commissioners must be from both parties and its decisions are reviewed by the judiciary, not the legislative or executive branches.
37. 16 U.S.C. §§791-821.
38. Klein, *supra* note 7, at 690.
39. *Id.*
40. 16 U.S.C. §808.
41. Echeverria et al., *supra* note 33 ("During the agency's first 60 years, it only once turned down a project to protect recreational and aesthetic values of a river.").
42. Kalen, *supra* note 29, at 25 ("In lieu of acting like a modern regulatory agency—the objective of Executive Secretary O.C. Merrill—the Commission instead heeded the wishes of the emerging electric utility industry"); *see also* Klein, *supra* note 7, at 691 ("Nevertheless, for more than sixty years, FERC emphasized the construction of hydropower dams and facilities, ignoring the broader public interest in matters such as environmental protection . . . from a broader public interest perspective, that approach may have been undesirable, providing an example of an agency that had been 'captured' by the very hydropower industry that Congress had intended for it to regulate.").
43. Pub. L. No. 99-495, 100 Stat. 1243.
44. Kalen, *supra* note 29, at 36.
45. Pub. L. No. 99-495, 100 Stat. 1243 (1986); *see also* H.R. Rep. No. 99-507 (1986).
46. Kalen, *supra* note 29, at 36 (citing H.R. Rep. No. 99-507, at 33 (1986)).
47. *Id.*

the environmental and economic aspects of the proposal; (2) preparing an environmental document that analyzes the project's effects and makes recommendations to mitigate for the adverse effects; (3) reviewing the comments and recommendations submitted by other government agencies, interested organizations, and the public; and (4) determining that the proposed project is best adapted to a comprehensive plan for improving or developing a waterway or waterways for beneficial public uses.[48] After reviewing the application and required reports, FERC has multiple paths forward. It can grant the license or specify that certain conditions must be met before it will grant a license for the construction project.[49] Alternatively, it can deny the license application until further studies are completed, perhaps even withholding approval indefinitely, due to concerns about one of the required considerations.[50]

This gives FERC substantial authority over the disposition of each license to operate a hydropower facility. With the environmental requirements and amendments to the FPA that were added in the ECPA, FERC seriously evaluates the impact of existing dams in the relicensing process.

II. How Dams Have Been Regulated

A. *FERC Asserts Decommissioning Authority*

The environmental requirements added in the ECPA present a substantial new obstacle for operators applying for relicensing today. As Congress noted, licenses are to be considered in the context of present-day attitudes and impacts when they come up for relicensing. This is a new attitude that reflects a much greater valuation of environmental protection, as well as a greater appreciation of potential negative externalities, than was present when the vast majority of dams were first licensed.[51]

This change in attitude was brought to the forefront in 1994 when FERC issued its Policy Statement on the decommissioning of dams in response to a sharp increase in the number of expiring licenses from dams built in the 20th century boom.[52] In its Policy Statement, FERC delivered four major findings regarding its obligations under relevant statutes. First, as a threshold issue, FERC asserted that it possesses authority to either approve or deny a relicensing application. This is not controversial, as the FPA by its text gives FERC jurisdiction to grant or deny any license.[53] Although the FPA authorizes and empowers FERC to issue hydropower licenses, this section does not actually require FERC to do so.[54] The command that FERC must or shall issue a license is not only missing from the statute, but in fact, the provision expressly provides FERC with discretionary authority.[55] This is a necessary authority to keep licenses from effectively becoming perpetual upon first issuance.

The second major finding was that in relicensing an installation, FERC could impose conditions, whether based on environmental protection or water management goals, that render a project economically unviable.[56] Third, the statement asserted that FERC has authority to order the complete removal of a dam as part of a denial of a license.[57] Fourth, and most controversially, FERC found it is the responsibility of hydropower operators to bear the majority, if not the entirety, of decommissioning costs if license renewal is denied or decommissioning is ordered.[58] Even more controversy was generated when FERC found that if a project is not relicensed, for whatever reason, it must be decommissioned.[59]

Having the opportunity to reevaluate a project as the broader social and legal context changes substantially expands FERC's power under the FPA. Asserting the ability to decommission a dam unilaterally was unprecedented in the history of hydroelectric regulation in the United States. FERC did offer some qualification of the Policy Statement. To calm the fears of operators, it noted that "where existing projects are involved, license denial would rarely occur."[60] Indeed, outright denial would be a rare outcome; however, this is small comfort, as at the same time, FERC also noted that decommissioning may also result from its imposition of conditions at relicensing that render "an already marginal project . . . uneconomic."[61]

48. Nancy K. Kubasek & Chaz A. Giles, *Dammed to Be Divided: Resolving the Controversy Over the Destruction of the Snake River Dams and Providing a Model for Future Decision-Making*, 25 Wm. & Mary Envtl. L. & Pol'y Rev. 675, 685 (2001).
49. *Id.*
50. *Id.*
51. Charles R. Sensiba, *Who's in Charge Here? The Shrinking Role of the Federal Energy Regulatory Commission in Hydropower Relicensing*, 70 U. Colo. L. Rev. 603, 640 (1999), citing Bruce Babbitt, FERC Distinguished Speaker Series, Washington, D.C., July 8, 1998:

> A nationwide debate is underway, asking: What should we consider when relicensing dams? What should be measured, along with kilowatt hours? Modern conservation science reveals more about the environmental costs of dams, how they exact a toll from rivers both upstream and down. Fifty years ago, no one foresaw how drastically dams might alter the natural cycle of rivers from the headwaters to the estuaries. Now we do. Few then ever saw dams as disrupting the spawning runs of anadromous fish up from the Pacific and Atlantic Oceans. Now we all do. No laws back then required protection of aquatic habitat for rare or declining species. Now they do. Moreover, now we increasingly see the issue not merely in terms of a single dam, but an entire river. We see that river as part of a whole watershed. And the fate of a watershed involves all the people who live in it, and from it, and who share responsibility in deciding the future of their river.

52. FERC, Policy Statement—Project Decommissioning at Relicensing, 60 Fed. Reg. 339 (Jan. 4, 1995) [hereinafter Policy Statement].
53. 16 U.S.C. §797(e); Carlos M. Marquez II, *Federal Power Act Limitations on FERC Dam Decommissioning Authority: Shielding Preexisting Licensees and Revisiting Trust Funds to Protect the Public Interest*, 27 Colo. Nat. Resources Energy & Envtl. L. Rev. 157, 170 (2016).
54. *Id.*
55. Policy Statement, *supra* note 52, at 340 ("In deciding whether to issue any license under this subchapter for any project . . .").
56. *Id.*
57. *Id.*
58. *Id.*
59. *Id.*
60. *Id.*
61. *Id.*

In the statement, FERC acknowledges that the FPA does not expressly address decommissioning. However, FERC based its assertion on the authority of agencies "to fill in gaps left by the statute"[62] when charged with producing and enforcing a comprehensive regulatory scheme. The hydroelectric industry argues that the Policy Statement's interpretation of the FPA creates a paradox, pointing to §15's requirement that new licenses be issued "upon reasonable terms"[63] as justification that FERC should be precluded from either forcing decommissioning or attaching conditions that make licenses uneconomic. FERC rejected this argument, holding that adopting the industry's reasoning "would mean that severe environmental damage would have to be accepted to protect even the most marginal of hydropower projects."[64] After the early burst of controversy, there was no action under the Policy Statement, leaving relevant stakeholders in a holding pattern. In the three years after issuing the Policy Statement, FERC took no implementation actions. That changed with Edwards Dam, the first time FERC exercised its claimed decommissioning authority.[65]

B. FERC First Orders a Dam Decommissioned

It took three years for the controversial Policy Statement to be tested. On November 25, 1997, FERC declined to issue a new license to the operators of the Edwards Dam project located on the Kennebec River in Augusta, Maine, ordering a subsequent decommissioning.[66] The Edwards project site had been dammed since 1837 and hydroelectric facilities had been in place since 1913.[67] The Kennebec River once supported populations of every fish species native to the northeastern United States, but the fishery was cut off when Edwards Dam was built without any fishways.[68] Fish passages were eventually installed but proved ineffective, resulting in an almost complete collapse of fish populations upstream of the dam.[69]

While the Kennebec River supports a large number of hydropower projects along its 132-mile length, Edwards is the first dam site encountered by fish entering the river from the Atlantic Ocean to move upstream. Because of its distant placement from the other hydroelectric facilities further upstream, removing the dam creates a 60-mile uninterrupted stretch of river extending to the Atlantic Ocean.[70] These environmental impacts are notable because they were not a substantial consideration when the dam was first licensed. In 1991, Edwards filed a relicensing application with FERC.[71] This would be its first licensing under the strengthened FPA/ECPA process that accounts for environmental impacts equally.

The process for determining if a license will be issued involves an environmental impact statement (EIS) and an economic analysis. Before FERC could issue any decision on project approval or denial, it needed to consider numerous factors, including energy needs and environmental protection.[72] In compliance with the National Environmental Policy Act (NEPA),[73] FERC commissioned an EIS to help inform its decision. The EIS analyzed three basic options and how they would impact the waterway's health and included (1) granting a new license as proposed by the licensees, (2) granting a new license with stricter conditions, and (3) denying the license and ordering dam decommissioning and removal.[74] The application proposed to make the site more viable by expanding capacity for electricity generation and to mitigate environmental damage by upgrading fish ladders and introducing more substantial support for recreation facilities on the waterway.

The EIS concluded that "the project's significant negative impacts on fishery resources could not be mitigated except by removal of the dam."[75] FERC also found that the electricity generated by the Edwards Dam could easily be replaced by other regional sources.[76] The EIS concluded that even investing in the best available environmental remediation technology would fail to restore the fishery to a great enough degree, and that the only option for restoring the river environment to compliance with environmental statutes[77] required removal of the dam.[78] FERC additionally found that dam removal would dramatically enhance sport and commercial fishing opportunities, resulting in substantial economic development for the region, as well as create stretches of rapids suitable for various types of recreational boating.[79] Thus, the final EIS recommended that FERC order the decommissioning of the dam.

62. *Id.*
63. *Id.* at 343. *See infra* note 110.
64. *Id.*
65. Beth C. Bryant, *FERC's Dam Decommissioning Authority Under the Federal Power Act*, 74 Wash. L. Rev. 95 (1999) (citing Edwards Mfg. Co., 81 F.E.R.C. 61255, at 62199 (1997) (stating that this was the first time FERC exercised decommissioning authority)).
66. Edwards Mfg. Co., 81 F.E.R.C. 61255 (1997).
67. *Id.* at 62199.
68. *Id.* at 62202 ("These include alewives, American shad, Atlantic salmon, striped bass, rainbow smelt, Atlantic sturgeon, and shortnose sturgeon.").
69. *Id.*
70. *Id.*
71. *Id.* at 62200.
72. *See, e.g.*, 16 U.S.C. §797(e):
> In deciding whether to issue any license under this subchapter for any project, the Commission, in addition to the power and development purposes for which licenses are issued, shall give equal consideration to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of, fish and wildlife (including related spawning grounds and habitat), the protection of recreational opportunities, and the preservation of other aspects of environmental quality.
73. 42 U.S.C. §§4321-4370h, ELR Stat. NEPA §§2-209.
74. *Edwards Mfg.*, 81 F.E.R.C. at 62205.
75. *Id.* at 62255.
76. *Id.* at 62201.
77. A wide variety of statutes apply to hydroelectric installations under the ECPA regime, including non-exhaustively NEPA (which requires all agencies to consider the environmental impacts of their actions); the Endangered Species Act (in situations where endangered species exist in watersheds); the Clean Water Act (which requires projects be certified as meeting clean water standards); the Rivers and Harbors Act (requiring Corps of Engineers approval); and the Wild and Scenic Rivers Act (all installations prohibited on designated waterways). *See generally* Hydropower Reform Coalition, *Laws Governing Hydropower Licensing*, https://www.hydroreform.org/resources/laws (last visited Aug. 14, 2019).
78. *Edwards Mfg.*, 81 F.E.R.C. at 62203.
79. *Id.* at 62204.

Along with the EIS, FERC undertook an economic analysis of the project, which found that the power generated by Edwards would cost more than alternate sources in the region, even under the optimistic case for infrastructure improvements at the site that was presented by the operator in the application for relicensing.[80] That analysis did not consider the conditions FERC would be obligated to put on the lease under assorted environmental protection and energy-efficiency statutes, conditions likely to make the facility even less economically viable for the operator while still not fully mitigating environmental damage to the region.[81] The analysis estimated the cost of removing the infrastructure at $2.7 million, not including environmental remediation, and the cost of imposing the recommended conditions at $10 million.[82] At best, the imposition of the necessary conditions would only mitigate some damages, while also making the dam's operation economically unviable, all to produce power that could be generated more affordably in the same region.[83]

Considering the EIS and economic analysis, FERC concluded that it would be impossible to find relicensing of the Edwards Dam to be in the public interest. As only one dam had previously been denied a new license, this was controversial enough on its own. Even more controversial was FERC ordering the utility operating Edwards to come up with a plan to fund its decommissioning. FERC had the following to say: "we deny the application for new license, and we direct . . . the licensees to file a plan to decommission the hydroelectric generating facilities and remove the project dam."[84] The Edwards Dam was thus the first hydroelectric dam to be decommissioned against the operator's will and at the operator's expense.[85]

Not surprisingly, this decision did not sit well with the operator.[86] However, before the dispute and the underlying Policy Statement were litigated, a settlement was reached and FERC transferred the license held by the operator to the state of Maine.[87] This transfer shifted responsibility for decommissioning to the state, effectively sidestepping a potential legal challenge to the authority to compel a utility to pay to decommission its facility.[88] Maine then used its new ownership of the site to entice a company seeking to build a harbor on the site of the dam to contribute a substantial portion of the decommissioning costs—$2.5 million—in exchange for the harbor.[89] The remaining $4.75 million required to decommission the site came from a consortium of dam operators further upstream in exchange for extensions on their own licenses.[90] In the summer and fall of 1999, the dam was removed to national fanfare. While this was largely a happy ending for all stakeholders, it had the unfortunate side effect of leaving the question of the Policy Statement's legal validity untested.

C. FERC Further Extends Its Decommissioning Power

The second dam to be decommissioned under the Policy Statement was the Cushman Dam project in the state of Washington, which was originally constructed in 1924.[91] The project consisted of two hydropower dams, both located on the North Fork of the Skokomish River.[92] Unlike the Edwards Dam that FERC ordered removed, the Cushman scenario demonstrates another power FERC asserts that it possesses: approving a new license but placing conditions on the dam's operation that would make the site economically unviable.[93] It did not directly order decommissioning of the installation as with Edwards. However, it would have been impossible to comply with environmental laws and operate the site, making it a functional decommissioning order by way of increasing the cost of operating the project.[94] Had Cushman accepted the conditions that FERC was going to place at relicensing, the installation would have generated an estimated "annual power value of $6.39 million . . . at an annual cost of about $8.87 million."[95] Thus, the dam would operate at a yearly loss of about $2.5 million. Cushman was steadfastly opposed to these conditions on its license, and it took more than a decade to resolve the dispute.[96]

Unlike the Edwards example, Cushman's operator—Tacoma Public Utilities—chose to litigate the issue, working its way up to the U.S. Court of Appeals for the District of Columbia (D.C.) Circuit.[97] In that litigation, the operator argued that FERC has no authority to decommission a project unilaterally at the time of relicensing, and that if FERC does not want to renew the license and cannot find another party to take over the project, then the federal government itself must take over the project.[98] The court noted that FERC did not decommission the project and, in fact, did issue a new license to operate the project, just on unfavorable terms.[99] Tacoma responded that FERC effectively decommissioned the project by offering an

80. *Id.* at 62207; FERC, FERC/FEIS No. 0097, Final Environmental Impact Statement (1997).
81. *Edwards Mfg.*, 81 F.E.R.C. at 62207.
82. *Id.*
83. *Id.* at 62199.
84. *Id.* at 62210.
85. *Id.*
86. Bryant, *supra* note 65, at 111 ("The licensee vowed to fight the decommissioning order in court should FERC decide not to stay the order.").
87. *See* Natural Resources Council of Maine, Agreement Reached to Remove Edwards Dam 2-3.
88. *See* Peter J. Carney, *Dam Removal: Evolving Federal Policy Opens a New Avenue of Fisheries and Ecosystem Management*, 5 Ocean & Coastal L.J. 309, 326 (2000).
89. Bryant, *supra* note 65, at 111.
90. *Id.*
91. FERC, FERC/EIS No. 0095f, Final Environmental Impact Statement for the Cushman Hydroelectric Project 1-1 (2010).
92. *Id.*
93. Policy Statement, *supra* note 52, at 340.
94. *See* City of Tacoma, 84 F.E.R.C. 61107, at 61570 (1998).
95. *Id.*
96. *See* City of Tacoma, 132 F.E.R.C. 61037, ¶¶ 1, 5, 304 (2010) (noting disagreement began in 1998 and involved several petitions for rehearing, delays, and successfully persuading FERC to stay issuance of the new license until after appeals were exhausted).
97. City of Tacoma v. Federal Energy Regulatory Comm'n, 460 F.3d 53, 36 ELR 20173 (D.C. Cir. 2006).
98. *Id.* at 71.
99. *Id.*

uneconomic license and saying, in effect, take it or leave it. They argued that "FERC may not do indirectly that which it has no authority to do directly; in other words, de facto decommissioning."[100]

The court found that FERC commissioners have stated that their ability to make long-term economic forecasts for hydroelectric installations is limited, and therefore an operator might have reasons to operate a site that is netting a yearly loss on generated power—meaning it is not truly a decommissioning if an operator views the prognosis differently. Either way, though, the court noted that "in some cases, a change in congressional priorities might cast doubt on a once-viable project and lead to closure of the project when its license expires . . . because FERC issues a new license that the licensee finds too costly or burdensome."[101] Put simply, sometimes changes in the law and public priorities will make a once-viable license unviable because meeting those new priorities is substantially more expensive.

In its Policy Statement, FERC argues that it cannot guarantee license renewal when Congress often greatly alters the regulatory landscape during the course of a license term.[102] Indeed, the very nature of a license implies that the licensor is not obligated to continue it indefinitely. Moreover, the very fact that a license is limited to 50 years[103] indicates Congress' intent that projects be reevaluated in light of changing circumstances and national priorities, with reevaluation necessarily implying the possibility that new licenses may not be issued. The court noted that the "question we must decide is whether 'reasonable terms' can, in some cases, be terms that may have the effect of shutting a project down or occasioning a change of ownership. We think the answer is yes."[104] The court continued on to note that the FPA is ambiguous and that FERC's interpretation of its statutory authority is reasonable, and thus entitled to judicial deference under *Chevron*.[105] It found for FERC, agreeing that Congress implicitly extended the power to shut down projects either directly, by denying a new license, or indirectly, by "incorporating reasonable and necessary conditions that make a new license highly unattractive to the licensee" to FERC.[106]

This ruling is the most direct judicial pronouncement to date on the validity of FERC's asserted authority to order the decommissioning of dams, but it is only binding in the D.C. Circuit. Further, the D.C. Circuit unfortunately sidestepped the crucial question of who should bear the costs of that decommissioning, noting that "we have no cause to decide in this case whether, and in what circumstances, FERC can impose decommissioning obligations or costs on a former licensee."[107] The parties eventually settled the dispute instead of litigating to its conclusion, agreeing to a package of renewal conditions under which Cushman was able to continue operation of the facility, including increasing Cushman's maximum electricity-generating capacity, implementing a series of environmental mitigation measures, and requiring that Cushman pay a Native American tribe $20,000 annually for use of their land.[108] This remains only the second usage of FERC's asserted decommissioning authority, leaving (1) the question of FERC's right to order decommissioning somewhat open, and (2) the assertion that operators should bear the costs completely open.

III. How Dam Removal Should Be Regulated

In the Policy Statement, FERC made it clear that it wants parties to make use of voluntary settlement agreements to resolve relicensing issues, but that it retains the power to force dam decommissioning if necessary.[109] FERC may have calculated that the Policy Statement could serve as an effective way to force the parties to the negotiating table, thereby encouraging a mutually beneficial settlement and allowing them to avoid the prospect of a long and costly litigation process with an uncertain outcome. In the Edwards and Cushman cases, this is precisely what occurred. Unfortunately, that avoidance of litigation has left the Policy Statement's validity and the cost-shifting debate unresolved.

The hydroelectric industry still disagrees with the Policy Statement, and it will eventually need to be resolved by statute or litigation before the U.S. Supreme Court, or else FERC's assertion of authority will remain in force. FERC asserts that it may deny a license and impose decommissioning costs or grant an unprofitable license when it finds that decommissioning is in the public interest. The hydroelectric industry counters that the FPA should be read narrowly to limit FERC's options upon license expiration to those expressly enumerated in the FPA.[110] Under the industry's reading, when a license expires, the licensee would be entitled to one-year licenses that are meant to be a temporary stopgap indefinitely, until a new license is issued, a new licensee is found, or there is a federal takeover.[111] Moreover, the industry takes the position that if a license is granted, its conditions must not be so onerous as to render the project economically unfeasible.[112]

100. *Id.* at 72. Ironically, they assert that FERC does not have the authority to order decommissioning in their argument, but, in fact, this would be the first case that affirmed FERC's authority to do just that.
101. *Id.* at 73.
102. Policy Statement, *supra* note 52, at 341-43.
103. 16 U.S.C. §808(e).
104. *City of Tacoma*, 460 F.3d at 74.
105. Chevron, U.S.A., Inc. v. Natural Res. Def. Council, Inc., 467 U.S. 837, 14 ELR 20507 (1984). In *Chevron*, the Supreme Court set forth a legal test for when the courts should defer to an agency's interpretation of a statute that it administers, holding that judicial deference to their conclusions is appropriate where the agency's answer was not unreasonable, so long as the Congress had not spoken directly to the precise issue at question.
106. *City of Tacoma*, 460 F.3d at 74.
107. *Id.*
108. *See* City of Tacoma, 132 F.E.R.C. 61037, ¶¶ 64, 66, 290 (2010). A substantial issue in the litigation was that the water diverted by the dam was drying up a stretch that was traditionally used by the tribe.
109. Policy Statement, *supra* note 52, at 346-47 ("The Commission encourages creative solutions in this regard.").
110. Michael A. Swiger et al., *Paying for the Change: Can the FERC Force Dam Decommissioning at Relicensing?*, 17 Energy L.J. 163, 164 (1996).
111. *Id.*
112. *Id.*

The FPA, legislative history of the Act, and judicial interpretations of the FPA are all unsupportive of the industry's view. Rather, they support the conclusion that FERC properly issued the Policy Statement to fill gaps in the FPA left by Congress' failure to directly address a role for decommissioning of projects in hydroelectric regulation.

A. *Courts Should Defer to the Policy Statement Under* Chevron

When utilizing *Chevron* analysis to determine if the courts should defer to an agency's interpretation of a statute that it administers, a court should defer to that interpretation as long as Congress has not spoken directly to the issue in question and the agency's interpretation is not unreasonable.[113] Here, Congress has not spoken directly, and the agency's interpretation is reasonable, militating toward *Chevron* deference for FERC's Policy Statement.

1. The FPA, and Thus Congress, Is Silent on Decommissioning

The first step in a *Chevron* analysis is to consider whether Congress has spoken on the issue. When analyzing the plain statutory language and the legislative history of the FPA, there is a compelling argument that the law is silent on the issue of decommissioning. At the time of passage, Congress never seriously contemplated the proposition that hydroelectric projects might need to be decommissioned.[114] National conditions and attitudes toward regulation of the environment and energy are quite different today than in 1920 when the FPA was passed. Back then, many feared that communities that grew up around the dam sites and were totally dependent on the hydropower would suffer if the project were to cease power production.[115] At that time, power transmission was limited to 250 miles from the dam site and obtaining power from a distant site was simply not an option.[116] For this reason, Congress put provisions in the FPA designed to ensure that projects would continue to operate even if, at license expiration, a licensee rejected the new license and threatened to abandon the project.

The section of the FPA that the hydroelectric industry points to as reflecting congressional intent to cover the topic of decommissioning is the §14 takeover provision, which allows the federal government to "take over, maintain and operate"[117] projects in order to retain federal control over public water resources and prevent a private monopolization of a public good.[118] However, when properly construed, §14 does not directly address the topic of decommissioning. The section presupposes that the continued existence and operation of a given hydroelectric project is in the public interest and that the federal government should control the project if private operators are unable to.[119] Federal takeover might make sense in specific scenarios, such as a project that would be operated specifically with the goal of a public benefit like flood control, or when the energy generated by the installation is crucial to the region and a utility operator cannot be allowed to control its future.[120]

The specific scenario of a dam removal, however, is not contemplated in the FPA. The FPA's remedies assume that the site is still in the public interest and that some modification is required to continue operations. When a dam removal is ordered, FERC has found it impossible to operate the project in the public interest. Interpreting the law as requiring a change in ownership in a removal scenario verges on absurd; it would require the public to pay for the removal of a private installation that is harming the public's interest. Congress provided for the temporary issuance of annual licenses as an interim measure if FERC failed to resolve an application by the underlying license's expiration date. The purpose was to protect communities that might be dependent on the installation, while the industry's argument attempts to twist that language into protection for operators—trying to create a back-door method to either turn a 50-year license into a perpetual one or obligate the government to take ownership to help the operator avoid economic consequences.

Similarly, §15, which establishes the 50-year limit on licenses, does not affirmatively speak to FERC denying a license and decommissioning a dam. The duration limit is the key piece underpinning the FPA's continued viability over time. President Theodore Roosevelt considered the limited term nonnegotiable in order to give future generations the opportunity to reconsider licenses, and Congress incorporated it into the FPA with little debate.[121] Further, §15 requires that new licenses be issued "upon such terms and conditions as may be authorized or required under the then-existing laws and regulations,"[122] which strongly

113. 16 U.S.C. §808(e).

114. Bryant, *supra* note 65 at 125, citing 59 Cong. Rec. 1474 (1920) (statement of Sen. Walsh). Debates suggest that the FPA is silent on decommissioning because nobody could contemplate a future in which one of these dams would no longer be in the public interest. One senator speculated that the only thing that might interrupt the issuance of annual licenses would be if the government decided to destroy the dam because it was an obstruction to navigation, but then went on to say that "of course, it is unthinkable that the Government would do anything of that kind, and constantly we must dismiss that."

115. Swiger et al., *supra* note 110, at 167.

116. *Id.*

117. 16 U.S.C. §807(a).

118. Bryant, *supra* note 65, at 116 ("Upon vetoing a 1909 water power bill that had no recapture provision, President Theodore Roosevelt stated, 'I esteem it my duty to use every endeavor to prevent the growing monopoly, the most threatening which has ever appeared, from being fastened upon the people of this nation.'").

119. *Id.*

120. *Id.*

121. *Id.* President Roosevelt noted:

> The public must retain the control of the great waterways. It is essential that any permit to obstruct them for reasons and on conditions that seem good at the moment should be subject to revision when changed conditions demand. . . . Provision should be made for the termination of the grant or privilege at a definite time, leaving to future generations the power or authority to renew or extend the concession in accordance with the conditions which may prevail at that time.

43 Cong. Rec. 3410 (1909).

122. 16 U.S.C. §808(a)(1).

suggests that Congress did not intend for annual licenses based on laws, regulations, and social interests from 50 years prior to extend into perpetuity.[123] Receiving a perpetual temporary license when failing to receive a standard license would fly in the face of the entire statutory scheme and would be an absurd outcome.[124] Because there is a judicial presumption against imputing to Congress an intent to produce an absurd and unintended result, §15 fails to support the hydroelectric industry's contention that the FPA speaks directly to decommissioning.

It follows that Congress did not consider the need for decommissioning, and the FPA is silent on this point. As written, the FPA contains a built-in assumption that the continued operation of the projects would always be necessary and in the public interest. Sections 14 and 15 were designed for scenarios where continued operation was required to maintain the public interest, not for scenarios where FERC has actively found that a project is counter to the public interest. Today, the concerns that gave rise to the assumption that hydropower dams would always be in the public interest are no longer valid. Power can now be transmitted efficiently across large areas and cheaper sources of power are often available from outside a local dam's service area. As the hydroelectricity industry faces deregulation, marginal dams may be rendered uneconomic and may be abandoned.[125] Current circumstances demonstrate the need for a comprehensive decommissioning policy that, while not explicitly accounted for in the statutory scheme, is well within a reasonable interpretation of its provisions.

2. The Policy Statement Is a Reasonable Action to Institute a Comprehensive Regulatory Scheme

The second step in a *Chevron* analysis is to consider whether the agency's interpretation is reasonable. The FPA contains several broad grants of authority that empower FERC to fill gaps in the statute that are necessary for the regulatory scheme to function.[126] The FPA states that FERC may issue "orders, rules and regulations as it may find necessary and appropriate,"[127] such as policy statements interpreting the law, to "conserve and utilize the navigation and water-power resources of the region."[128] In addition, the general grant of authority in §10 of the FPA enables FERC to make licensees subject to "such other conditions not inconsistent with the provisions of the FPA as the Commission may require."[129] Further, it is well established as a general proposition that an administrative agency with a broad statutory mandate has the authority to take discretionary actions to fulfill its statutory duties.[130] Federal courts interpret FERC's authority under the FPA broadly, summarized by the Supreme Court declaring that under the FPA, "the Commission is plainly made the guardian of the public domain."[131]

Stepping down from the Supreme Court to the circuit level, the D.C. Circuit has held that the FPA is not to be given a narrow reading wherein every action of FERC is justified only if referable to express statutory authorization.[132] The court held that the FPA entrusts a broad subject matter to administration by FERC in the light of new and evolving problems and doctrines, leaving room for adjustment to changing social norms.[133] Similarly, the U.S. Court of Appeals for the Seventh Circuit has acknowledged that the FPA "should receive a practical construction . . . enabling the Commission to perform facilely the duties required of it by Congress."[134] It noted that "if the Commission is to intelligently exercise its extensive regulatory and supervisory power, it must have been intended that it shall have power to do everything essential to the execution of its clearly granted powers and the achievement of the purposes of the legislation."[135]

The U.S. Court of Appeals for the Third Circuit, recognizing that, "to put it bluntly, there are hiatuses and inconsistencies in the Federal Power Act,"[136] has also noted the need for FERC to move beyond the text of the FPA to effectuate the purposes it was intended to serve. The U.S. Court of Appeals for the Second Circuit has held that FERC's role in protecting the public interest "does not permit it to act as an umpire blandly calling balls and strikes for adversaries appearing before it; the right of the public must receive active and affirmative protection at the hands of the Commission."[137] None of these decisions are controlling outside of their circuit, but the consistency in rulings and logic across circuits reflect a broad consensus nationwide that FERC reasonably has to look beyond the FPA's

123. *Id.*
124. Lac Courte Oreilles Band v. Federal Power Comm'n, 510 F.2d 198, 209-10 (D.C. Cir. 1975) ("If Congress decides against federal recapture, then continued operation of Section 15 would indeed serve no rational purpose if a new license cannot [be] issue[d].").
125. Bryant, *supra* note 65, at 118.
126. *Id.* The FPA contains a very broad grant of authority to the Commission. The Commission has power to "perform any and all acts" and to "prescribe, issue, make, amend, and rescind such orders, rules, and regulations as it may find necessary or appropriate to carry out the provisions" of the FPA. It may impose other conditions that are consistent with the FPA and further the public interest. In addition, these conditions may require licensees to conserve and utilize the navigation and waterpower resources of the region or protect life, health, and property. Finally, the FPA expressly incorporates the broad federal navigation power, making it unlawful to construct, maintain, or operate any hydroelectric dam project in the navigable waters of the United States without a valid license.
127. 16 U.S.C. §825(h).
128. *Id.* §797(g).
129. *Id.* §803(g).
130. Morton v. Ruiz, 415 U.S. 199, 231 (1974) ("The power of an administrative agency to administer a congressionally created and funded program necessarily requires the formulation of policy and the making of rules to fill any gaps left, implicitly or explicitly, by Congress.").
131. Federal Power Comm'n v. Idaho Power Co., 344 U.S. 17, 23 (1952).
132. Niagara Mohawk Power Corp. v. Federal Power Comm'n, 379 F.2d 153, 158 (D.C. Cir. 1967).
133. *Id.*
134. Northern States Power Co. v. Federal Power Comm'n, 118 F.2d 141, 144 (7th Cir. 1941).
135. *Id.* at 143.
136. Metropolitan Edison Co. v. Federal Power Comm'n, 169 F.2d 719, 723 (3d Cir. 1948).
137. Scenic Hudson Pres. Conference v. Federal Power Comm'n, 354 F.2d 608, 620 (2d Cir. 1965).

text to fill gaps in an imperfect statute to implement its regulatory goals.

3. Courts Should Defer to FERC's Interpretation

The fundamental mandate of the FPA and FERC is the utilization of the nation's waterways in a manner consistent with the public interest. Inherent in FERC's ability to issue licenses of limited duration is its ability to deny a license that would not be consistent with the public interest or to impose whatever conditions it views as necessary to meet the public interest. The FPA mandates that FERC follow set criteria in deciding whether a license meets the broad public interest standard.[138] The Supreme Court held that "the test is whether the project will be in the public interest . . . and that determination can be made only after an exploration of all issues relevant to the 'public interest,' including . . . the preservation of anadromous fish for commercial and recreational purposes."[139]

This requirement was strengthened by the ECPA, which explicitly requires FERC to accord equal weight to nonpower values like environmental protection. The purpose of the 50-year limit on licenses is to provide an opportunity to periodically reevaluate hydropower projects to determine whether they still serve the public interest. The scrutiny given to relicensing applications is the same as that given to original license applications—it is not a cursory review.[140] An appropriate interpretation of the FPA requires that FERC license those projects that meet statutory standards but, crucially, to also decline to relicense projects that fail to meet those same standards.

In *Chevron*, the Supreme Court held that when a statute is "silent or ambiguous with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute."[141] The court will defer to the agency's interpretation of the statute if it is reasonable. Accordingly, the question is whether the Policy Statement is a reasonable interpretation of the FPA. Faced with dozens of expiring licenses, FERC realized that decommissioning would certainly be a recurring problem in the future. The Policy Statement reasonably fills this gap in the statute by recognizing that when a dam no longer serves the public interest it is, by extension, impossible for FERC to issue a license that meets FPA standards, so decommissioning is a reasonable decision. It also affirms FERC's authority to grant a license including any conditions necessary to protect the public interest.

138. 16 U.S.C. §803(a).

139. Udall v. Federal Power Comm'n, 387 U.S. 428, 450 (1967).

140. Confederated Tribes & Bands of the Yakima Indian Nation v. Federal Energy Regulatory Comm'n, 746 F.2d 466, 470, 14 ELR 20593 (9th Cir. 1984) ("Congress intended the Commission to make the same inquiries on relicensing as on initial licensing.").

141. Chevron, U.S.A., Inc. v. Natural Res. Def. Council, Inc., 467 U.S. 837, 843, 14 ELR 20507 (1984).

B. Does FERC Have the Authority to Impose Costs of Decommissioning on Licensees?

Whether the Policy Statement is a reasonable interpretation is relatively clearly determined. Although industry groups continue to argue the point, as demonstrated above, it falls into mainstream conceptions of agency deference, and has been affirmed directly by multiple circuit courts and indirectly by the Supreme Court. While not fully settled nationally, I will assume, arguendo, that it is in order to move on to the substantially thornier question: whether FERC has the authority to impose the costs of decommissioning dams on utility operators. It remains an open question, undecided by the courts, with viable arguments on both sides. It is particularly crucial for nonfederal hydroelectric operators that this question be resolved because without nationally controlling litigation or a statutory change, the Policy Statement will control.

There are two key arguments regarding the ability to force operators to pay, both reflecting constitutional precepts: the Commerce Clause navigational servitude leans in FERC's favor, and the concept of a Fifth Amendment regulatory taking leans in the industry's favor.

1. The Navigational Servitude Supports the Authority to Compel Private Parties to Pay

Beth Bryant, an environmental law professor at the University of Washington, argues that in addition to possessing the statutory authority to deny a license, FERC may, through its broad discretionary powers to implement the FPA, impose the costs of decommissioning private hydroelectric facilities onto licensees in a reasonable manner.[142] She argues that the authority supporting the Policy Statement under the FPA is the navigation power held by Congress and, more specifically, the navigation servitude or "rule of no compensation"—a corollary to the navigation power.[143] The navigation servitude establishes that, in its exercise of the navigation power, Congress may take private property without compensation or violation of the Fifth Amendment.[144] The navigation power differs from all other federal regulatory powers in this regard.

Congress may, in exercising the navigation power, destroy private rights for which it would otherwise have to pay compensation d is tilted back under the Fifth Amend-

142. Bryant, *supra* note 65, at 123.

143. *Id.* For discussions of "navigation servitude," see Richard W. Bartke, *The Navigation Servitude and Just Compensation—Struggle for a Doctrine*, 48 Or. L. Rev. 1 (1968); Leighton L. Leighty, *The Source and Scope of Public and Private Rights in Navigable Waters*, 5 Land & Water L. Rev. 391 (1970); and Eva H. Morreale, *Federal Power in Western Waters: The Navigation Power and the Rule of No Compensation*, 3 Nat. Resources J. 1, 12 (1963).

144. The three main categories of activities invoking the servitude are (1) interference with the flow of the stream, (2) actions affecting the bed or banks of the stream up to the high-water mark, and (3) deprivation of access to navigable waters. Rivers and Harbors Act of 1899, ch. 425, §10, 30 Stat. 1121, 1151 (codified at 33 U.S.C. §403); *see also* Amy K. Kelley, *Constitutional Foundations of Federal Water Law*, *in* Water and Water Rights §35.02(b) (Robert E. Beck ed., Matthew Bender 1996).

ment if it destroyed the same rights under a different power.[145] The exercise of this power is not an invasion of any private property rights in the stream or the lands underlying it, for the damage sustained does not result from taking property from riparian owners within the meaning of the Fifth Amendment, but from the lawful exercise of a power to which the interests of owners have always been subject.[146] Thus, without being obligated to pay compensation, the federal government may impair or destroy a riparian owner's access to navigable waters, even though the market value of the riparian owner's land is substantially diminished.[147] It predates any license to operate in a river and is implicit in the ability to operate. The navigation servitude extends to all lands below the ordinary high-water mark of a navigable river.[148]

Section 23(b) of the FPA explicitly invokes the navigation power by making the construction or operation of any unlicensed dam in a navigable waterway illegal.[149] It follows, then, that if a license is denied, the licensee possesses an unlicensed, illegal obstruction in a navigable waterway. Section 23(b), by invoking the navigation power and, by implication, the navigation servitude, gives FERC the authority to order the dam removed at the licensee's expense. Bryant further argues that "one potential vehicle for administering this requirement is section 10(c) of the FPA, which requires each licensee to establish and maintain adequate depreciation reserves to ensure the immediate availability of funds to replace or repair project works to protect navigation, life, health, or property."[150] Because dam decommissioning is a means of protecting navigation, life, health, and property, FERC could expressly require licensees to accumulate sufficient funds for dam decommissioning based on its §10(c) authority over depreciation funding.[151]

2. The Concept of Regulatory Takings Supports That Private Parties Cannot Be Compelled to Pay

Michael Swiger et al., environmental attorneys who represent hydroelectric industry interests, argue that a forced decommissioning would amount to a regulatory taking in violation of the Fifth Amendment.[152] Because decommissioning could be interpreted as a government seizure of property for substantially less than fair market value, this is a colorable argument that stands in direct opposition to the navigational servitude proposal; both are constitutional rights and one does not obviously overcome the other.[153] While the navigational servitude seemingly undermines a regulatory takings analysis, they are both firm bright-line rules—a conflict only the Supreme Court or Congress can fully resolve.

FERC considered and dismissed the possibility of a regulatory taking out of hand in the Policy Statement, noting that several commentators had raised the issue but "that resulting comments were made without legal discussion or citation."[154] While traditionally the navigational servitude has overcome conceptions of taking, the Court has shown a recent willingness to back away from the navigational servitude, and could potentially carve out an exception for hydroelectric installations.[155]

It is generally established that a federal regulatory action that goes too far without adequate compensation amounts to a taking of private property.[156] Under the traditional takings analysis, the determination of whether a government action is a taking is made by balancing the government's interest in the action against the property owner's economic interest in the property at issue. The analysis hinges on whether the action has infringed on the owner's property rights to such an extent that compensation is required.[157] Courts will first determine whether a property interest existed at the time of the government activity. Once a property interest is established, courts will look at the following factors in determining whether a government action constitutes a taking requiring just compensation: (1) the character of the government action, (2) the economic impact of the government action on the party who suffers the taking, and (3) the extent to which the action interferes with reasonable investment-backed expectations.[158] Here, I assume, arguendo, that a property interest exists in a given dam project for the sake of a takings analysis.

Once a property interest has been defined for the purpose of bringing a takings claim, the courts proceed to the analysis itself. Courts have long struggled to develop standards for determining when a regulatory taking occurs

145. United States v. Rands, 389 U.S. 121, 123 (1967):

> The proper exercise of this power is not an invasion of any private property rights in the stream or the lands underlying it, for the damage sustained does not result from taking property from riparian owners within the meaning of the Fifth Amendment but from the lawful exercise of a power to which the interests of riparian owners have always been subject . . . Thus, without being constitutionally obligated to pay compensation, the United States may change the course of a navigable stream.

146. *Id.*
147. United States v. Dickinson, 331 U.S. 745 (1947).
148. United States v. Cherokee Nation, 480 U.S. 700, 704 (1987).
149. 16 U.S.C. §817(1).
150. *Id.* §803(c).
151. *Id.* Bryant, *supra* note 65 at 125.
152. Swiger et al., *supra* note 110, at 174.
153. Catherine R. Connors, Appalachian Electric *Revisited: The Recapture Provision of the Federal Power Act After* Nollan *and* Kaiser Aetna, 40 Drake L. Rev. 533 (1991).
154. Policy Statement, *supra* note 52, at 5.
155. James E. Holloway & D. Tevis Noelting, *Takings Clause and Integrated Sustainability Policy and Regulation: The Proportionality of the Burdens of Exercising Property Rights and Paying Just Compensation*, 29 Vill. Envtl. L.J. 1, 32 (2018):

> In *Kaiser Aetna v. United States* a landowner that connected its pond to navigable waters was required to give access to this pond to the public, even though the landowner had relied on the government's consent in connecting the pond to the navigable waters. The Court held that the navigable servitude imposed by the government was a taking of private property for public use and interfered with the right to exclude others was a physical invasion of the property under regulatory takings theory.

156. Pennsylvania Coal Co. v. Mahon, 260 U.S. 393, 415 (1922).
157. Swiger et al., *supra* note 110, at 174.
158. Penn Cent. Transp. Co. v. New York City, 438 U.S. 104, 124, 8 ELR 20528 (1978).

and what the most appropriate remedy is. Therefore, most courts do not apply strict rules in takings cases and instead emphasize a factual inquiry into the specific context on a case-by-case basis.[159] In some instances, the Supreme Court has established bright-line rules wherein certain actions always constitute a taking; these are so-called regulatory takings.[160] The Supreme Court has formulated two categorical rules that establish the existence of a regulatory taking. The first categorical rule involves situations where the governmental activity at issue results in a physical invasion of the property. The Supreme Court has ruled that a physical occupation of the property, no matter how small, effects a taking.[161] The second categorical rule is that when the government action denies the property owner "all economically beneficial or productive use" of the property interest, the activity is a taking per se and just compensation is required.[162]

In its Policy Statement, FERC claims authority to (1) deny a license at renewal and order decommissioning of the project and (2) issue a license with environmental conditions that render a project uneconomic.[163] In the first instance, FERC is denying the licensee "all economically beneficial or productive use" of the hydroelectric installation by either ordering removal or non-operation. The licensee is left with no economical or productive use of the property interests contained in the project, thus establishing grounds for a taking per se. In the second instance, FERC states that the environmental conditions imposed upon the new license may force the licensee out of business because the "costs of doing business have become too high."[164] In this instance, FERC is again leaving no economically beneficial or productive use of the property interest at issue, also establishing grounds for a taking per se. In both scenarios, the courts could reasonably find that ordering the decommissioning of a dam is a regulatory taking, and thus that the government is obligated to pay fair market value to the operators for their interest in the property.

IV. Conclusion

It seems clear that FERC has broad authority to interpret and apply the FPA, authority that has been supported at both the circuit and Supreme Court levels. This supports the proposition of the Policy Statement generally and the authority to order decommissioning more narrowly. However, the question of unilateral and uncompensated decommissioning is an area of the Policy Statement that remains highly controversial, particularly given the substantial costs of decommissioning any hydroelectric installation. If only 10% of the 2,300 hydroelectric dams in the United States require decommissioning under stricter environmental laws, the costs of the Edwards removal imply that utilities might face an aggregate removal cost liability rising into the billions.

To date, the Edwards and Cushman removal orders in 1997 and 1998 remain the only applications of the Policy Statement, so there has been no opportunity to litigate the question of uncompensated decommissioning to a more complete answer. While it is admirable that the parties were able to reach amicable settlements in both cases, that state of play is a functional loss for the hydroelectric industry writ large. Without litigation or statutory change, the Policy Statement remains the law of the land and utilities must govern their conduct accordingly.

Viable constitutional arguments can be advanced on both sides regarding who pays for a decommissioned dam. Whether the issue of forced decommissioning falls into the navigational servitude or is classified as a regulatory taking is a classic example of a split in reasoning that can only be answered by a statutory change or Supreme Court decision. Indeed, recent Supreme Court decisions suggest a willingness to establish carve-outs within the traditionally overarching navigational servitude, which itself generates uncertainty.

However, the questions at this point are merely academic because in the absence of action, the Policy Statement controls and FERC retains the right to order dams decommissioned. This creates obvious planning and economic insecurity for hydroelectric operators. This will only increase as the vast number of American dams near both the end of their license cycles and the end of their designed useful lives. While many of these installations will continue operating with no issues, the application of stricter environmental laws will inevitably result in a portion of the dams facing decommission, whether through license denial or costly requirements that render the facility uneconomic.

The obvious expedient solution is congressional action to clarify the mandate of FERC as it relates to dam removal and the responsibilities of the parties. There has recently been some motion in this direction with the near-unanimous passage of the America's Water Infrastructure Act of 2018.[165] The Act, unfortunately, did not address the question of decommissioning, but does demonstrate a bipartisan appetite for action on infrastructure regulation. Congress tends to only act in a crisis, so perhaps it will take a cluster of high-profile dam removal fights, with potential taxpayer liability, to force action. Until that action occurs, massive expenses hang in the balance without legal clarity as to who pays them: taxpayers or private operators.

159. Swiger et al., *supra* note 110, at 179.
160. *Id.*
161. Loretto v. Teleprompter Manhattan CATV Corp., 458 U.S. 419, 436 (1982).
162. Lucas v. South Carolina Coastal Council, 505 U.S. 1003, 22 ELR 21104 (1992).
163. Swiger et al., *supra* note 110, at 171.
164. Policy Statement, *supra* note 52, at 343.
165. S. 3021, Pub. L. No. 115-270 (passed 99-1 in the U.S. Senate and by voice vote in the U.S. House of Representatives).