

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF INDIANA
HAMMOND DIVISION**

UNITED STATES OF AMERICA and THE)
STATE OF INDIANA,)

Plaintiffs,)

and)

Case No. 2:12 CV 207

THE NATURAL RESOURCES DEFENSE)
COUNCIL, HOOSIER ENVIRONMENTAL)
COUNCIL, SIERRA CLUB, SAVE THE)
DUNES, SUSAN ELEUTERIO, and TOM)
TSOURLIS,)

Judge Phillip P. Simon

Plaintiff-Intervenors,)

v.)

BP PRODUCTS NORTH AMERICA INC.,)

Defendant.)

THIRD AMENDMENT TO CONSENT DECREE

WHEREAS the United States of America (“United States”) and the State of Indiana (collectively “Plaintiffs”); the Sierra Club, Save the Dunes, the Natural Resources Defense Council, the Hoosier Environmental Council, the Environmental Integrity Project, the Environmental Law and Policy Center, Susan Eleuterio, and Tom Tsourlis (collectively “Plaintiff-Intervenors”); and BP Products North America Inc. (“BPP”) are parties to a Consent Decree entered by this Court on November 6, 2012 [DE 10];

WHEREAS the First Amendment to the Consent Decree was filed with the Court on April 3, 2015 [DE 13] and the Second Amendment to the Consent Decree was filed with the Court on June 8, 2020 [DE 59];

WHEREAS Paragraph 213 of the Consent Decree provides in pertinent part that “[m]aterial modifications to this Consent Decree will be in writing, signed by the Parties, and will be effective upon approval by the Court”;

WHEREAS Paragraph 198(d) of the Consent Decree provides in pertinent part that Plaintiff-Intervenors “may seek to enforce the obligations of BPP under this [Consent] Decree ... by filing with the Court a motion for the appropriate relief”;

WHEREAS BPP operates two fluidized catalytic cracking units—FCU 500 and FCU 600—at the Whiting Refinery;

WHEREAS Paragraph 17 of the Consent Decree provides in pertinent part: “[b]y no later than the Date of Entry, FCU 500 and FCU 600 at the Whiting Refinery shall each be an ‘affected facility’ as that term is used in 40 C.F.R. Part 60, Subparts A and Ja, and shall be subject to and comply with the requirements of 40 C.F.R. Part 60, Subparts A and Ja, for PM applicable to FCCUs”;

WHEREAS Paragraph 17 of the Consent Decree and 40 C.F.R. § 60.102a(b)(1) compel compliance with an FCCU emissions limit of 1.0 pounds of non-sulfate PM per 1,000 pounds of coke burned;

WHEREAS Paragraph 18 of the Consent Decree compels compliance with an FCCU emissions limit of 1.2 pounds of PM_{TOTAL} per 1,000 pounds of coke burned applicable to both FCU 500 and FCU 600;

WHEREAS Paragraph 18 of the Consent Decree compels compliance with an FCCU emissions limit of 0.9 pounds of PM₁₀ per 1,000 pounds of coke burned applicable to FCU 500, and 0.7 pounds of PM₁₀ per 1,000 pounds of coke burned applicable to FCU 600;

WHEREAS Paragraph 17 of the Consent Decree and 40 C.F.R. § 60.102a(a) compel compliance with various emissions limitations, including control device parameter operating limits on the total power and secondary current to the electrostatic precipitators (“ESPs”);

WHEREAS Section VIII (Reporting and Recordkeeping) of the Consent Decree and 40 C.F.R. § 60.108a obligate BPP to report excess emissions;

WHEREAS on February 4, 2019, Plaintiff-Intervenors Sierra Club, Natural Resources Defense Council, Environmental Integrity Project, and Environmental Law and Policy Center filed the Motion to Enforce Judgment and Consent Decree [DE 21] alleging that various performance tests exceeded the non-sulfate PM levels and PM₁₀ levels set forth in Subpart Ja and the Consent Decree;

WHEREAS on December 17, 2019, Plaintiff-Intervenors filed an Amended Motion to Enforce Judgment and Consent Decree [DE 40] alleging that various performance tests exceeded the non-sulfate PM levels and PM₁₀ levels and alleging reporting violations;

WHEREAS on October 15, 2020, the United States informed the Court through a joint status report [DE 71] that it had joined the negotiations following a performance test conducted on June 5, 2020 that demonstrated that FCU 500 exceeded the PM₁₀ and PM_{TOTAL} emissions limits set forth in Paragraph 18 of the Consent Decree;

WHEREAS upon approval of this material modification the United States will issue a stipulated penalty demand for \$512,450 and BPP agrees to timely pay the stipulated penalties in accordance with Paragraph 158 of the Consent Decree;

WHEREAS all the Parties intend for this material modification, styled as the Third Amendment to Consent Decree, to resolve this pending litigation;

WHEREAS the Plaintiff-Intervenors are therefore withdrawing their Motion to Enforce Judgment and Consent Decree and their Amended Motion to Enforce Judgment and Consent Decree;

WHEREAS BPP has agreed to compensate Plaintiff-Intervenors for certain costs and attorney's fees pursuant to the terms of a separate agreement among BPP and Plaintiff-Intervenors;

WHEREAS the Parties recognize and the Court, by approving this material modification, finds that this Third Amendment to the Consent Decree has been negotiated by the Parties in good faith, that implementation of the Amendment without further litigation is the most appropriate means of resolving this matter between the Parties, and that this Amendment is fair, reasonable, and in the public interest.

NOW, THEREFORE, it is hereby Ordered, Adjudged, and Decreed:

1. While subparagraphs 17(a) and 17(b) of the Consent Decree remain unchanged, Paragraph 17 is revised as follows:

17. NSPS Applicability to FCCUs. By no later than the Date of Entry, FCU 500 and FCU 600 at the Whiting Refinery shall each be an "affected facility" as that term is used in 40 C.F.R. Part 60, Subparts A and Ja, for PM applicable to FCCUs. This includes the following provisions: 40 C.F.R. §§ 60.11(a); 60.8(f)(1); 60.102a(c)(1)(i); 60.104a(d)(4)(i); 60.105a(b)(1)(i); 60.105a(i)(1); 60.102a(b)(1); 60.108a(a); and 40 C.F.R. § 60.7(c), (c)(1), (c)(2), (c)(4), (d)(1). Entry of this Consent Decree and compliance with the relevant monitoring requirements of this Consent Decree for the

FCCUs shall satisfy the notice requirements of 40 C.F.R. § 60.7(a) and the initial performance test requirement of 40 C.F.R. § 60.8(a).

2. Subparagraph 17(c) is added to the Consent Decree and shall read as follows:

c. Where deviations of primary power, secondary current, or coke burn limits exceed 1% of operating time in any six-month period, BPP shall comply with the reporting requirements of 40 C.F.R. § 60.7(c). Where total deviations account for less than 1% of operating time, BPP shall comply with the reporting requirements of 40 C.F.R. § 60.7(d) and shall include such information in its semi-annual reports, beginning with the first semi-annual report due after entry of this Third Amendment.

i. When excess emissions reports are required, those reports shall include each category of information in 40 C.F.R. § 60.7(c) and 40 C.F.R. § 60.108a(d) including the magnitude of excess emissions.

ii. For deviations from the ESP primary power and secondary current emissions limitations, the ESP values shall be provided in the excess emissions reports.

iii. BPP's excess emission reports shall identify all deviations from the ESP primary power and secondary current emissions limitations when coke burn is 1,000 pounds per hour or greater.

3. Subparagraph 21(a)(i) is revised to read as follows:

i. Testing Frequency: No later than entry of this Third Amendment, BPP shall resume conducting performance tests to measure emissions of PM₁₀ and PM_{TOTAL} from FCU 500

and FCU 600 on a semi-annual basis, with each semi-annual performance test being no sooner than four (4) calendar months from the date of completion of the previous semi-annual test. This shall not preclude BPP from conducting additional performance tests on a more frequent basis.

4. Subparagraph 21(a)(iii) is revised to read as follows:

iii. Test Run Duration: Each performance test shall be comprised of at least three (3) valid test runs. Each performance test run shall last between 110 and 130 minutes in duration and this requirement shall be an emission limitation and standard for purposes of Paragraph 83 of the Consent Decree. BPP shall discard any invalid test runs, such as those that are compromised because of sample contamination. If a test run is discarded, BPP shall replace it with an additional valid test run. BPP shall report the results of the discarded test runs and shall provide all information necessary to document why the test run was not valid.

5. Subparagraph 21(a)(iv) is revised to read as follows:

iv. Valid Performance Tests: A PM_{10} and PM_{TOTAL} test shall not be considered a valid test, and BPP shall not have met the requirement of this Paragraph to test, unless each of the following conditions is met for this test:

- (1) The average coke burn rate for all runs used in determining compliance with PM_{10} and PM_{TOTAL} emission limits must not be less than the actual average coke burn rate over the time period since the previous performance test.

- (2) The ammonia slip concentration for all runs used in determining compliance with PM_{10} and PM_{TOTAL} emission limits must be equal to or greater than the actual average ammonia slip concentration over the time period since the previous performance test. This requirement shall be applicable as of the second performance test after the installation of the ammonia slip process analyzers.
- (3) No later than entry of this Third Amendment, performance tests shall be performed at an SO_2 concentration that is not lower than 2 ppm below the average SO_2 concentration over the time period since the previous test.
 - a. BPP shall not start the test if, prior to testing, the SO_2 concentration is lower than 2 ppm below the average SO_2 concentration over the time period since the previous test. If this occurs, BPP shall reschedule the test as set forth below.
 - b. BPP shall continue the test and report the results if, during the test, the SO_2 concentration drops more than 2 ppm below the average SO_2 concentration over the time period since the previous test. If the difference between the average SO_2 concentration during the performance test and the average SO_2 concentration since the prior test is more than 2 ppm below the average SO_2 concentration since the prior test, BPP shall repeat the test as set forth below.
 - c. If a test must be cancelled or rescheduled as set forth in Subparagraph 21(a)(iv)(3), BPP shall reschedule or repeat the test the following day unless the stack test contractor is not available, in which case the test

must occur within 30 days or within the annual/semi-annual required testing date, whichever is later. BPP shall follow the same test protocol and notify IDEM in advance of performing the rescheduled test. In the event that the same test protocol cannot be followed, BPP shall provide the revised test protocol to IDEM in writing prior to initiating the test.

- (4) Throughout the performance test, BPP shall target the average ESP total primary power since the last stack test. The average ESP total primary power for all runs used in determining compliance with the PM_{10} and PM_{TOTAL} emission limits must not be greater than 120% of the average ESP total primary power since the last stack test.

6. Paragraph 21 shall be amended to add Subparagraph 21(a)(vi):

vi. Ion Analysis: All performance tests conducted pursuant to this Paragraph shall include an ion analysis of all collected condensable PM samples to determine the composition of condensable PM. This requirement shall be an emission limitation and standard for purposes of Paragraph 83 of the Consent Decree. A copy of the ion analysis shall be included in the first semi-annual report submitted after BPP receives the ion analysis results.

7. Paragraph 22 is replaced as follows:

22a. Installation of Ammonia Slip, NO_x, and CO Process Analyzers.

a. Ammonia slip process analyzers shall be installed on both FCU 500 and FCU 600 as follows:

i. FCU 500: An ammonia slip analyzer shall be installed no later than December 31, 2022, and shall be operational within 90 days thereafter.

ii. FCU 600: An ammonia slip analyzer shall be installed no later than March 31, 2023, and shall be operational within 90 days thereafter.

b. NO_x process analyzers shall be installed on both FCU 500 and FCU 600 as follows:

i. FCU 500: A NO_x analyzer at the inlet to the ESP shall be installed no later than December 31, 2022, and shall be operational within 90 days thereafter.

ii. FCU 600: A NO_x analyzer at the inlet to the ESP shall be installed no later than March 31, 2023, and shall be operational within 90 days thereafter.

(1) The existing NO_x analyzer at the SCR inlet shall be operational upon entry of this Third Amendment.

c. TDL CO process analyzers shall be installed on both FCU 500 and FCU 600 as follows:

i. FCU 500: A TDL CO process analyzer shall be installed no later than December 31, 2022, and shall be operational within 90 days thereafter.

ii. FCU 600: A TDL CO process analyzer shall be installed no later than December 31, 2025, and shall be operational within 90 days thereafter.

d. The CO, NO_x, and ammonia slip analyzers shall be installed at the locations depicted on the diagram that is attached as Appendix 1 to this Third Amendment.

22b. ESP Operation

- a. BPP shall operate the ESPs except when doing so presents an unsafe condition.
- b. BPP may shut down an ESP when the 2-second average CO concentration exceeds 5000 ppmv CO under actual flue gas conditions (at actual O₂ and actual wet basis) (“CO Trip Level”).
- c. BPP shall take all reasonable actions to resolve and avoid the conditions that cause CO to exceed 5000 ppmv.
- d. If the TDL CO process analyzers measure a CO level that exceeds the CO Trip Level and causes any ESP to shut down, BPP shall bring the ESP back online within 60 minutes after it is below the CO Trip Level for 15 minutes, unless it cannot determine the underlying cause of the CO trip level and that determination is necessary to avoid an unsafe condition.
- e. If BPP shuts down any ESP due to an unsafe condition and/or a CO trip level, it must report it in the next semi-annual report and include a detailed explanation and justification for the ESP shutdown, an explanation of the unsafe conditions, and an estimate of the total and excess emissions that occurred while the ESP was shut down.
- f. Nothing in this Paragraph shall affect the applicability or enforceability of the FCCU particulate matter standards or limits set forth in this Section.

22c. Operation of CEMS, COMS, and Process Analyzers.

- a. Operation of CEMS. The FCCU NO_x, SO₂, and CO CEMS required by this Consent Decree shall remain in operation at all times that FCU 500 and FCU 600 are operating in any mode of operation (i.e., air is supplied to the regenerator for combustion, heating, or cooling; torch oil or coke is being combusted; or coke feed is supplied to the reactor), including during periods of startup and shutdown, except as otherwise explicitly provided in this Consent Decree, 40 CFR § 60.13, or 40 CFR § 63.8. This requirement shall be an emission limitation and standard for purposes of Paragraph 83.b. and c. of the Consent Decree.
- b. Operation of COMS. The FCCU COMS shall remain in operation at all times that FCU 500 and FCU 600 are operating in any mode of operation (i.e., air is supplied to the regenerator for combustion, heating, or cooling; torch oil or coke is being combusted; or coke feed is supplied to the reactor), including during periods of startup and shutdown, except for COMS downtime allowed by 326 IAC 3-5-8(c) and provided that during such COMS downtime the requirements of Title V permit conditions C.11, D.21.13(a) and (b), and D.22.13(a) and (b) are met. This requirement shall be an emission limitation and standard for purposes of Paragraph 83.b. and c. of the Consent Decree. BPP shall report FCCU COMS downtime in the semi-annual report.
- c. Operation of Process Analyzers. The NO_x, CO, and ammonia slip process analyzers that BPP is required to install pursuant to this Third Amendment shall remain in operation at all times that FCU 500 and FCU 600 are operating in any mode of operation (i.e., air is supplied to the regenerator for combustion, heating,

or cooling; torch oil or coke is being combusted; or coke feed is supplied to the reactor), including during periods of startup and shutdown, except as otherwise provided in the Consent Decree or this Third Amendment. These analyzers may have downtime resulting from required maintenance, malfunctions, maintenance following malfunctions, quality assurance, and/or quality control activities. This requirement shall be an emission limitation and standard for purposes of Paragraph 83.b. and c. of the Consent Decree. BPP shall report process analyzer downtime in the semi-annual report. This reporting shall begin with the first semi-annual report due after this Third Amendment has been entered and the process analyzer becomes operational.

22d. Hazards Review and Report.

- a. BPP shall complete a FCU/ESP Operation and Stack Testing Hazards Review (“Review”) by no later than December 31, 2021. BPP shall prepare a report addressing the Review (“Report”) and submit that Report to EPA, IDEM, and the Plaintiff-Intervenors by no later than March 31, 2022. Plaintiff-Intervenors may submit comments on the Report to EPA, IDEM, and BPP within 60 days from the date the Report is submitted.
- b. The Review and corresponding Report shall identify the FCU startup and shutdown regimes (“Regime” or “Regimes”) consistent with Appendix 2 to this Third Amendment, or subsets thereof, and identify when the ESPs can be operated safely. The Report shall also identify the FCU startup and shutdown

Regimes, or subsets thereof, when the ESPs cannot be operated safely and address whether stack testing can be conducted safely during those periods.

- c. If BPP determines that stack testing can be safely performed within a given FCU startup or shutdown Regime, or subset thereof, when the ESPs are off, it shall include in the Report a proposal and timeline for the stack testing to be completed during the next turnaround. Such testing shall include 3 runs with each run having a duration of 110-130 minutes during each startup and shutdown Regime, or subset thereof, when the ESP is not operating and BPP determines that stack testing can be safely conducted unless the testing time window of the Regime(s), or subset thereof, precludes it.
 - d. If BPP determines that it cannot conduct stack testing safely during any FCU Regime, or subset thereof, it shall include a comprehensive justification and the underlying data, including any relevant parametric data, supporting that conclusion in the Report.
 - e. Any findings contained in the Report shall not be binding on EPA, and nothing in this Paragraph or in the Report shall be construed as a waiver of EPA's rights under the Clean Air Act and its implementing regulations.
8. Subparagraph 83(b)(iii) is revised to read as follows:
- iii. Paragraphs 17, 18, 19, 20, 21, and 22 in Part V, Section C (FCCU PM Limits);
9. Paragraph 98 is revised to read as follows:
98. On or before February 15 and August 15 of each year, BPP shall submit to EPA, IDEM, and Plaintiff-Intervenors a semi-annual report as provided in this Part. BPP may

only redact each semi-annual report sent to the Plaintiff-Intervenors in accordance with the conditions set forth in Paragraph 101(c). Each semi-annual report shall contain the following information for the previous six-month period (*i.e.*, January to June to be addressed in the report to be submitted by August 15, and July to December to be addressed in the report submitted by February 15):

10. Subparagraph 101(a) is revised to read as follows:

101. FCCU Reporting and Record Keeping Requirements.

a. BPP shall include in each semi-annual report required by this Part VIII the results of all testing of FCU 500 and FCU 600 required by Paragraph 21 (“FCCU Performance Testing”). The performance test reports shall include all relevant testing data and information, including, but not limited to the following: PM, PM₁₀, PM_{TOTAL}, SO₂ concentration, NO_x concentration, catalyst additive rates, ammonia addition prior to ESP, ammonia addition at the SCR, ammonia slip as measured by the stack testing contractor or an ammonia slip analyzer, the average total power and secondary current to the entire ESP system, the coke burn-off rate, regenerator overhead temperature, the FCCU feed rate, and ion analysis.

11. Paragraph 154 is replaced as follows:

154. For failure to submit reports as required by Paragraph 17.c., 22b.e., 22c., and 22d., per report, per day:

Period of Delay or Non-Compliance	Penalty per Day
1st through 30th day after deadline	\$300

31st through 60th day after deadline	\$1000
Beyond 60th day after deadline	\$2000

12. Paragraph 155 is replaced as follows:

155. For failure to install the ammonia slip, NOx, and CO process analyzers by the dates set forth in Paragraph 22a., per analyzer, per day:

1st through 30th day after deadline	\$1000
31st through 60th day after deadline	\$2500
Beyond 60th day after deadline	\$10,000

13. Paragraph 156 is replaced as follows:

156a. For failure to maintain and operate the ammonia slip, NOx, and CO process analyzers as required by Paragraph 22c, per analyzer, per day:

1st through 30th day	\$500
31st through 60th day	\$1000
Beyond 60th day	\$2000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater.

156b. For failure to maintain and operate the FCCU COMS as required by Paragraph 22b, per COMS, per day:

1st through 30th day	\$500
31st through 60th day	\$1000

Beyond 60th day \$2000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater.

14. Within 30 days after the entry of this Third Amendment, the United States shall issue a written demand to BPP for stipulated penalties pursuant to Paragraph 158 of the Consent Decree in the amount of \$512,450. The stipulated penalties shall be apportioned pursuant to Paragraph 139.
15. BPP shall pay the \$512,450 in stipulated penalties within 60 days of receiving the United States' written demand. BPP shall pay the stipulated penalties pursuant to the provisions of Paragraph 159 of the Consent Decree.
16. Entry of this Third Amendment shall resolve all claims and allegations of non-compliance alleged by Plaintiff-Intervenors in the Motion to Enforce Judgment and Consent Decree filed on February 4, 2019, and the Amended Motion to Enforce Judgment and Consent Decree filed on December 17, 2019, and any and all claims arising from the June 5, 2020 FCU 500 PM₁₀ and PM_{Total} stack test.

SIGNATORIES

17. Each of the undersigned representative certifies that she or he is fully authorized to enter into this Third Amendment to Consent Decree on behalf of the applicable party, and to execute and bind such party to this Amendment.


Dated and entered this _____ day of _____, 2022.

UNITED STATES DISTRICT JUDGE

FOR PLAINTIFF THE UNITED STATES OF
AMERICA:

TODD KIM
Assistant Attorney General
Environment and Natural Resources Division
United States Department of Justice

Date: November 29, 2021



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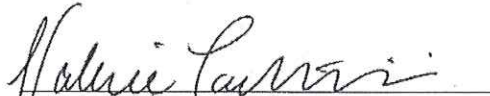
FOR THE STATE OF INDIANA:

Date: November 24, 2021




PATRICIA ORLOFF ERDMAN
Chief Counsel of Litigation
Office of the Attorney General
Indiana Government Center South, 5th floor
402 West Washington Street
Indianapolis, Indiana 46204

Date: 3 November 2021



WALERIE TACHTIRIS
Deputy Assistant Commissioner
Office of Legal Counsel and Criminal
Investigations


Date: November 3, 2021



BRUNO L. PIGOTT
Commissioner
Indiana Department of Environmental
Management

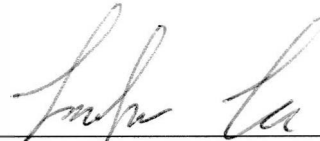
FOR PLAINTIFF-INTERVENOR THE
ENVIRONMENTAL INTEGRITY
PROJECT:

Date: 10/28/2021



ERIC SCHAEFFER
Executive Director
Environmental Integrity Project

Date: 10/28/2021



SANGHYUN LEE
Attorney
Environmental Integrity Project

FOR PLAINTIFF-INTERVENOR THE
ENVIRONMENTAL LAW AND POLICY
CENTER:

Howard Learner

Date: October 26, 2021

HOWARD A. LEARNER
President and Executive Director
Environmental Law and Policy Center

FOR PLAINTIFF-INTERVENOR THE
NATURAL RESOURCES DEFENSE
COUNCIL:



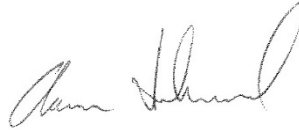
October 20, 2021

Date: _____

ANN ALEXANDER
Senior Attorney
Natural Resources Defense Council

FOR PLAINTIFF-INTERVENOR THE
SIERRA CLUB:

Date: 11/5/21



AARON ISHERWOOD
Phillip S. Berry Managing Attorney
Sierra Club

FOR PLAINTIFF-INTERVENOR SAVE
THE DUNES CONSERVATION FUND,
INC., D/B/A SAVE THE DUNES:

Date: 11/08/2021

A handwritten signature in black ink, appearing to read "Natalie Johnson", written over a horizontal line.

NATALIE JOHNSON
Executive Director
Save the Dunes

FOR PLAINTIFF-INTERVENOR THE
HOOSIER ENVIRONMENTAL
COUNCIL:



Date: November 2, 2021

JESSE KHARBANDA
Executive Director
Hoosier Environmental Council

FOR PLAINTIFF-INTERVENOR SUSAN
ELEUTERIO:


Date: 11/2/2021



SUSAN ELEUTERIO


FOR PLAINTIFF-INTERVENOR TOM
TSOURLIS:

Date: 11-01-21


TOM TSOURLIS

FOR DEFENDANT BP PRODUCTS NORTH
AMERICA INC.:

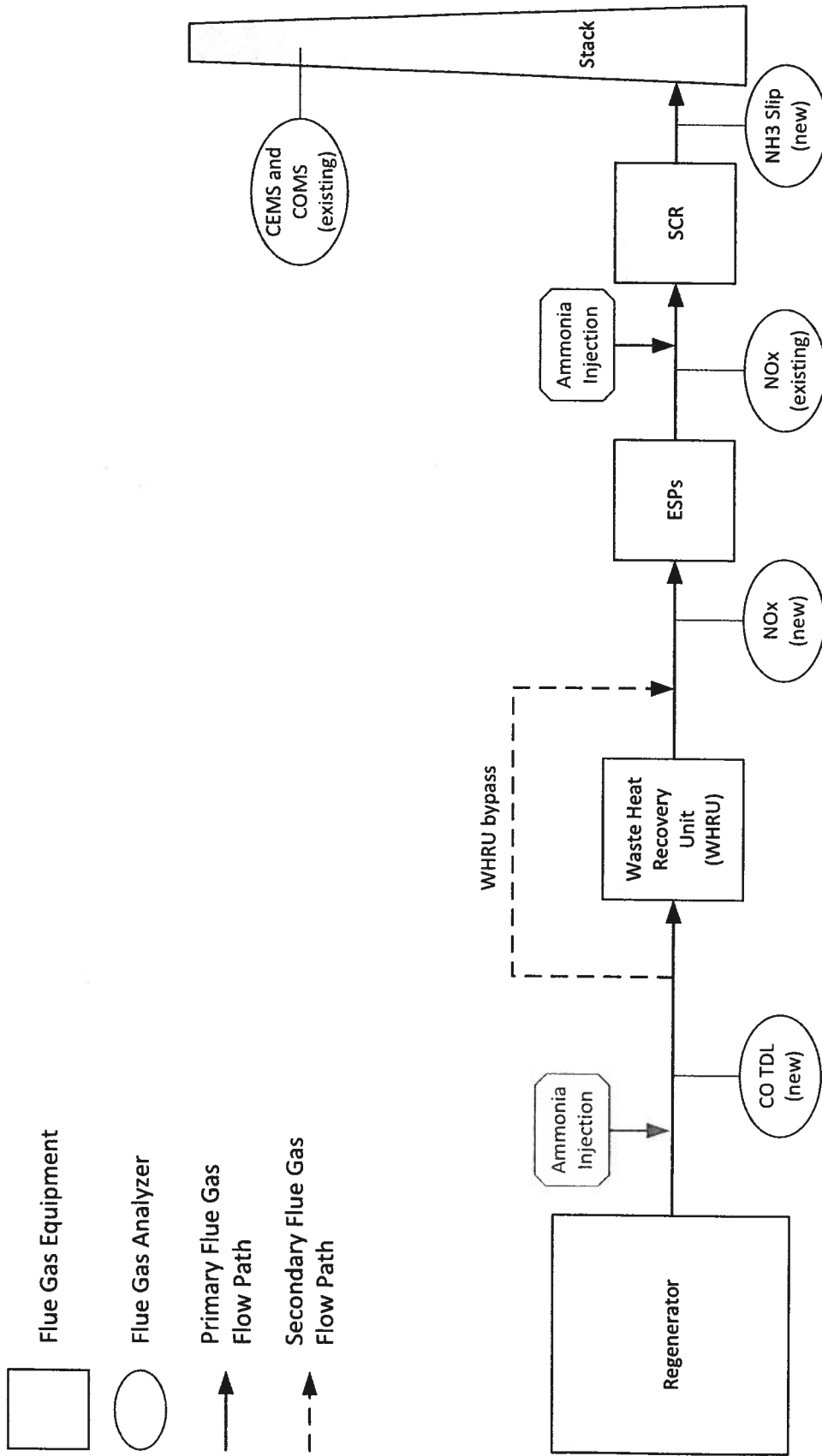
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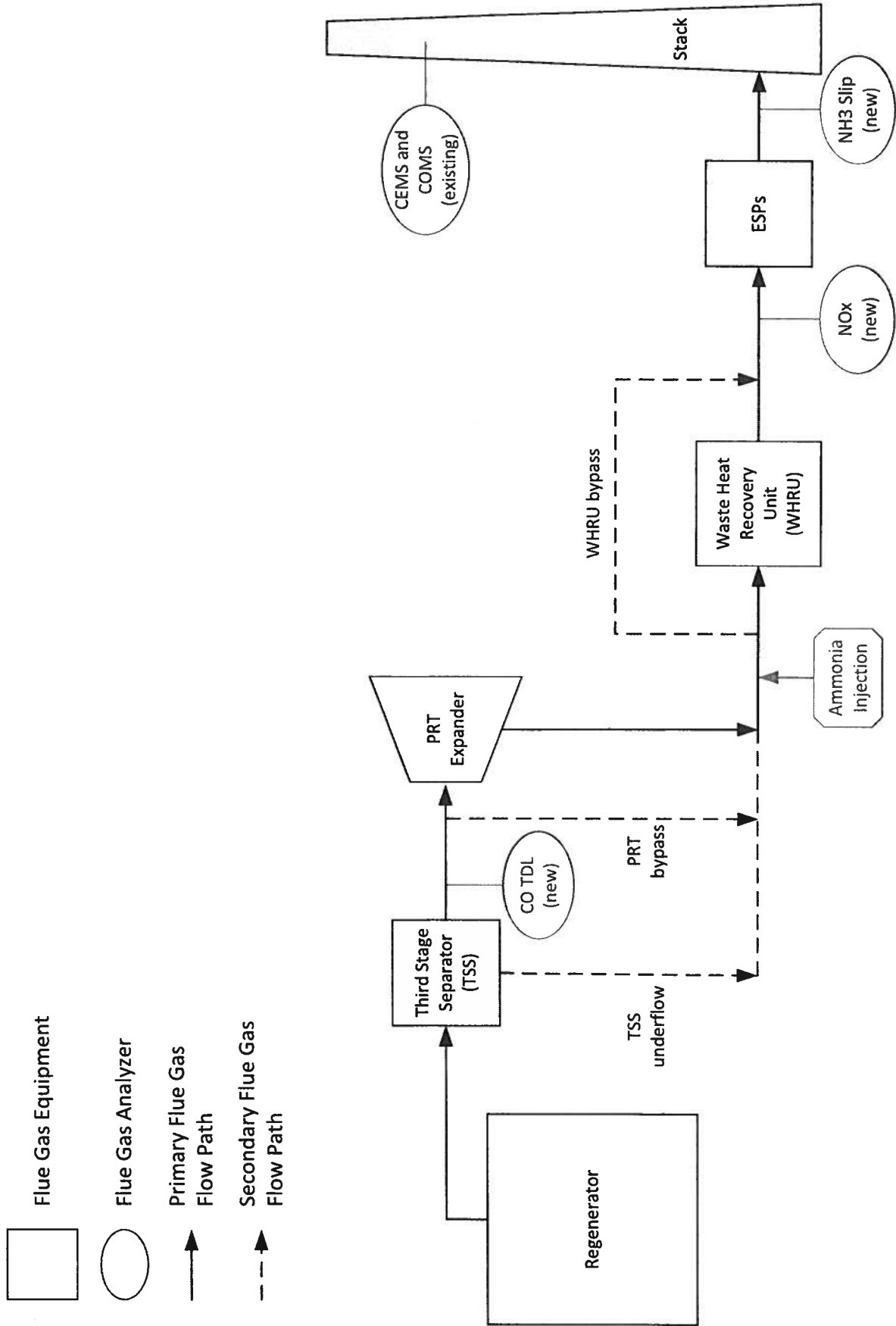
DONNIE W. BROWN
VP Refining – Whiting
BP Products North America Inc.

Appendix 1

FCU600 Flue Gas Flow Diagram with Analyzer Locations



FCU500 Flue Gas Flow Diagram with Analyzer Locations



Appendix 2

Startup Regimes

- Six regimes identified to evaluate during startup:
 - Regime A: from air blower start to air preheater start
 - Regime B: from air preheater start to catalyst load start
 - Regime C: from catalyst load start to torch oil start
 - Regime D: from torch oil start to catalyst circulation start
 - Regime E: from catalyst circulation start to feed introduction
 - Regime F: from feed introduction to ESP energized after unit stabilized

Shutdown Regimes

- Three regimes identified to evaluate during shutdown:
 - Regime I: from ESP trip to torch oil removal for regenerator cool down with air.
 - Regime II: from torch oil removal until bulk catalyst removal from the regenerator is complete (i.e. regenerator bed pressure level below 30 inches of water).
 - Regime III: from completion of bulk catalyst removal from the regenerator is complete (i.e. regenerator bed pressure level below 30 inches of water) until the air blower supply to the regenerator is shut off.