BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PETITION OF EXXONMOBIL	)	**AS 2024-001**
OIL CORPORATION FOR	)	**(Adjusted Standard – Air)**
ADJUSTED STANDARD FROM	)	
35 ILL. ADM. CODE 216.361,	)	
35 ILL. ADM. CODE 216.103, AND	)	
35 ILL. ADM. CODE 216.104	)	

NOTICE OF FILING

To: Don Brown, Clerk
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Please take notice that I have today filed electronically with the Office of the Clerk of the Illinois Pollution Control Board, the attached Notice of Filing, Certificate of Service, and Response to the Illinois Environmental Protection Agency's Recommendation and Motion to Incorporate Materials from R23-18(A) of ExxonMobil Oil Corporation, copies of which are herewith served upon you.

Dated: June 24, 2024

Respectfully submitted,

/s/ *Eric E. Boyd*

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OF COUNSEL:
THOMPSON COBURN LLP

Attorneys for Petitioner ExxonMobil Oil Corporation

CERTIFICATE OF SERVICE

I, the undersigned attorney, certify that I have today filed the documents described above electronically with the Illinois Pollution Control Board and served the Illinois Environmental Protection Agency with the same documents electronically.

Dated: June 24, 2024

Respectfully submitted,

/s/ *Eric E. Boyd*

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OF COUNSEL:
THOMPSON COBURN LLP

Attorneys for Petitioner ExxonMobil Oil Corporation

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35 ILL. ADM. CODE 216.104	)	

RESPONSE TO THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY'S RECOMMENDATION AND MOTION TO INCORPORATE MATERIALS FROM R23-18(A) OF EXXONMOBIL OIL CORPORATION

Petitioner ExxonMobil Oil Corporation ("Petitioner" or "ExxonMobil"), pursuant to 35 Ill. Adm. Code 104.416(d), 35 Ill. Adm. Code 101.306, 35 Ill. Adm. Code 101.500, and 35 Ill. Adm. Code 101.502, for its Response to the Illinois Environmental Protection Agency's ("IEPA's" or "Agency's") Recommendation and Motion to Incorporate Materials from R23-18(A) ("Response and Motion"), states the following:

1. ExxonMobil filed its Petition for an Adjusted Standard ("Petition") on August 14, 2023. Pursuant to the Petition, ExxonMobil seeks an adjusted standard from 35 Ill. Adm. Code 216.361, 35 Ill. Adm. Code 216.103, and 35 Ill. Adm. Code 216.104 for Petitioner's facility located at 25915 S. Frontage Road, Channahon, Illinois (the "Joliet Refinery"). The Petition was filed in response to the Illinois Pollution Control Board's ("Board's") final action in the startup, shut-down and malfunction ("SSM") rulemaking proceeding, R23-18.

2. On September 11, 2023, the IEPA filed a Motion for Stay of Proceeding or, in the alternative, Motion for Extension of Time to File Recommendation for 90 Days. The IEPA's motion sought additional time to file its recommendation in this matter beyond the 45 days required under 35 Ill. Adm. Code 104.416(a), and referred to the alternative emission limitation ("AEL") SSM proceeding in R23-18(A) in which ExxonMobil and other refinery petitioners seek similar relief. On September 25, 2023, ExxonMobil filed a response to the IEPA's motion ("Sept. 25,

2023 Response") that requested that the Board deny the IEPA's request for stay and grant the IEPA an extension to file its recommendation until October 12, 2023. Among other things, ExxonMobil's response explained, "ExxonMobil respectfully submits that it should be up to the Board as to how it would like to proceed with AS 24-001 in light of the ongoing proceedings in R23-18(A). The Board is best suited to decide how to conduct such affairs." Sept. 25, 2023 Response at ¶ 8. ExxonMobil's response also explained why the amount of time that the IEPA requested to delay filing its recommendation was unwarranted. Sept. 25, 2023 Response at ¶¶ 11-12. On October 5, 2023, the Board granted the IEPA's Motion for Stay of Proceeding for 90 days, until December 27, 2023.

3. On December 13, 2023, the IEPA filed its Status Report and Motion to Extend Stay of Proceeding. On January 4, 2024, the Board Hearing Officer granted the IEPA's Motion to Extend Stay until April 25, 2024.

4. On April 10, 2024, the IEPA filed its Status Report and Motion to Extend Stay of Proceeding beyond April 25, 2024. The Motion requested another stay for 150 days up to and including September 23, 2024. ExxonMobil filed its Status Report and Response to the Motion to Extend Stay on April 24, 2024. On April 25, 2024, the Hearing Officer issued an Order denying the IEPA's Motion and directing the IEPA to file its recommendation by June 10, 2024.

5. On June 10, 2024, the IEPA filed its Recommendation. In short, the IEPA recommended that the Petition be denied based on "informational deficiencies" and "as the relief sought is duplicative of the rule revisions being sought in the Board's R23-18(A) rulemaking proceeding, to the extent that the Board intends to adopt such rule revisions with respect to ExxonMobil."

6. The IEPA's recommendation that ExxonMobil's Petition be denied is unfortunate given the Agency's apparent support for the relief requested by ExxonMobil.

7. Stating that the Petition is duplicative with R23-18(A) is misleading because it implies that ExxonMobil expects that the Board grant the requested relief in both R23-18(A) and this adjusted standard matter, AS 24-01. ExxonMobil made clear in both the Petition and its September 25, 2023 Response that the Board should grant the requested relief in one, not both, of the proceedings and that the decision as to which proceeding should be the vehicle to provide ExxonMobil with the relief it requests "should be up to the Board." Sept. 25, 2023 Response at ¶ 8.

8. In addition, stating that the Petition should be denied based on "informational deficiencies" disregards the substantial information that ExxonMobil has already provided to the IEPA and to the Board. In fact, the IEPA admits on page 4 of its Recommendation that:

> The Agency's assessment is based on the information set forth in ExxonMobil's Petition. It does not include any additional technical support/information that has been provided by ExxonMobil or API in the R23-18(A) rulemaking but that has not been made part of the record of this proceeding. This information was developed by ExxonMobil, in conjunction with API in its representation of ExxonMobil, in the context of API's rulemaking proposal. It was considered by the Agency in the rulemaking context alone.

The IEPA does not explain, however, why it did not consider this information in making its Recommendation in this proceeding, but instead states that ExxonMobil can provide the information in this proceeding and can update its Petition as necessary and appropriate.

9. Why the IEPA holds form over substance in this way is perplexing given its support for the relief requested by ExxonMobil in the R23-18(A) proceeding. Since the IEPA supports

the relief requested by ExxonMobil in R23-18(A), it should also support the similar relief sought by ExxonMobil in this adjusted standard matter.

10. On April 2, 2024, the IEPA filed the Testimony of Rory Davis for the third hearing in the R23-18(A) matter. Mr. Davis' testimony discussed the correspondence between the IEPA, ExxonMobil, and the other American Petroleum Institute ("API") refinery participants, and concluded, "Based on the additional technical support and justification for the amendments that API has provided, the Agency does not object to adoption of the rule proposal as set forth in API's March 15, 2024 filing with the Board." **Exhibit 1**, Davis Testimony, R23-18(A) (filed April 2, 2024), at p. 15-16.

11. Additionally, the following exchange took place at the Third Hearing in R23-18(A) on April 15, 2024 between Mr. Messina and Mr. Davis:

> Mr. Messina: . . . Mr. Davis, on page 15 of your pre-filed testimony, it indicated that . . . the Agency does not object to the adoption of the rule proposal as set forth in API's March 15, 2024, filing with the Board. As our March 15, 2024, proposal, or filing, included the most up-to-date proposed alternative emission limitation language in 216.361(d), as in David, but did not set forth API's proposed revisions to Sections 216.103 and 216.104. Does the Agency also not object to API's proposal in relation to those sections?
>
> Mr. Davis: That's correct.
>
> Mr. Messina: Thank you. . . . Does this statement imply that the Agency believes that USEPA's criteria for AEL are met as to the proposal?

> Mr. Davis: The Agency does not object if the Board decides to adopt the proposed language, the current proposal, along with the additional support provided as the Agency has not identified problematic emissions impacts from the proposal and is not aware of any potential issues with USEPA approval.

Exhibit 2, Transcript of April 15, 2024 Hearing, R23-18(A) (filed April 21, 2024), at p. 20:15-22:6.

12. The Agency's approval for the substantive relief sought by ExxonMobil in R23-18(A) was formed after extensive testimony and multiple rounds of information exchanges between the Agency, ExxonMobil, and other API refinery participants. In addition to **Exhibits 1** and **2** discussed above, ExxonMobil requests incorporation of additional selected materials from the R23-18(A) as follows.

13. On August 28, 2023, API filed the Pre-Filed Testimony of John Derek Reese in Support of API's Rulemaking Proposal. In his testimony, Mr. Reese provided a concise summary of the nature of and justifications for API's AEL proposal, which is similar to the relief sought by ExxonMobil in this proceeding. **Exhibit 3**, Pre-Filed Testimony of John Derek Reese, R23-18(A) (filed Aug. 28, 2023)

14. During the September 27, 2023 hearing for R23-18(A), the Illinois Attorney General's Office ("AGO") asked API specifically for additional information regarding air dispersion modeling conducted for the Joliet Refinery to assess compliance with the National Ambient Air Quality Standards for carbon monoxide ("CO NAAQS"). **Exhibit 4**, Excerpts of Corrected Transcript of Sept. 27, 2023 Hearing, R23-18(A) (filed Dec. 18, 2023), at p. 76:6-77:2.

15. API's First Post-Hearing Comment filed on October 10, 2023 responded to the AGO's request by attaching as exhibit 2 thereto a copy of a memorandum prepared by Trinity

Consultants, Inc. ("Trinity") describing the parameters and results of ExxonMobil's CO air dispersion modeling, which was based on conservative worst case startup conditions and found that "based on model results, emissions during startup operations of ExxonMobil's FCC Unit do not cause an exceedance of the CO NAAQS." **Exhibit 5**, Post-Hearing Comment on Behalf of API, R23-18(A) (filed Oct. 18, 2023).

16. The Agency, the AGO, ExxonMobil, and other API participants engaged in further exchanges of information, meetings, and deliberations for the AEL proceeding, as reflected in part in **Exhibit 6**, API's Initial Response to IEPA's Comment, R23-18(A) (filed Dec. 1, 2023).

17. On March 15, 2024, API and Citgo filed a Supplemental Response to the IEPA's comments which attached as exhibit 1 thereto a copy of an updated version of Trinity's memorandum further detailing ExxonMobil's CO air dispersion modeling. The updated memorandum provided additional details requested by the Agency and found that "based on original and revised model results, emissions during startup operations of ExxonMobil's FCC Unit do not cause an exceedance of the CO NAAQS." *See* **Exhibit 7**, Excerpts of API and Citgo's Supplemental Response to IEPA's Comment, R23-18(A) (filed Mar. 15, 2024).

18. Lastly, API and Citgo's Pre-Filed Questions Directed to the IEPA filed on April 8, 2024 provides context for the Agency's testimony expressing approval of the AEL proposal (*see* in **Exhibits 1** and **2**) by listing focused questions directed to the Agency regarding resolution of prior Agency comments/concerns and the approvability of the AEL proposal under Clean Air Act requirements. *See* **Exhibit 8**, API and Citgo's Pre-Filed Questions, R23-18(A) (filed Apr. 8, 2024).

19. In summary, ExxonMobil requests that the following filings from the R23-18(A) docket be incorporated into this proceeding, true and accurate copies of which are attached to this Response and Motion:

- **Exhibit 1**, Davis Testimony, in R23-18(A) (filed April 2, 2024);

- **Exhibit 2**, Transcript of April 15, 2024 Hearing, R23-18(A) (filed April 21, 2024);
- **Exhibit 3**, Pre-Filed Testimony of John Derek Reese, R23-18(A) (filed Aug. 28, 2023);
- **Exhibit 4**, Excerpts of Corrected Transcript of Sept. 27, 2023 Hearing, R23-18(A) (filed Dec. 18, 2023);
- **Exhibit 5**, Post-Hearing Comment on Behalf of API, R23-18(A) (filed Oct. 18, 2023);
- **Exhibit 6**, API's Initial Response to IEPA's Comment, R23-18(A) (filed Dec. 1, 2023);
- **Exhibit 7**, Excerpts of API and Citgo's Supplemental Response to IEPA's Comment, R23-18(A) (filed Mar. 15, 2024); and,
- **Exhibit 8**, API and Citgo's Pre-Filed Questions, R23-18(A) (filed Apr. 8, 2024).

20. The Board has not decided whether to provide ExxonMobil's requested relief in the R23-18(A) AEL proceeding or this AS 24-01 proceeding. Nevertheless, ExxonMobil moves to incorporate the aforementioned materials from the R23-18(A) docket into this proceeding. In the interest of administrative economy, however, ExxonMobil has decided not to update its Petition at this time. If the Board decides to proceed with this adjusted standard matter and not the AEL matter, and requests that ExxonMobil update its Petition, ExxonMobil will file an Amended Petition pursuant to the provisions of 35 Ill. Adm. Code 104.418 as so ordered by the Board. ExxonMobil respectfully requests that the Board provide ExxonMobil with sufficient advance notice if updating the Petition becomes necessary.

WHEREFORE, for the reasons stated above, Petitioner ExxonMobil Oil Corporation requests that the Illinois Pollution Control Board accept its Response to the IEPA's Recommendation and incorporate into this proceeding the materials described above from R23-18(A), true and accurate copies of which are attached hereto.

Dated: June 24, 2024

Respectfully submitted,

/s/ *Eric E. Boyd*

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Exhibit 1

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R23-18(A)
AMENDMENTS TO 35 ILL. ADM. CODE	)	(Rulemaking—Air)
PARTS 201, 202, AND 212	)	

NOTICE

TO: See attached Service List

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board the ILLINOIS ENVIRONMENTAL PROTECTION AGENCY'S TESTIMONY OF RORY DAVIS, a copy of which is herewith served upon you.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/ Dana Vetterhoffer
Dana Vetterhoffer
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DATED: April 2, 2024

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	**)**	
	)	**R23-18(A)**
AMENDMENTS TO 35 ILL. ADM. CODE	**)**	**(Rulemaking – Air)**
PARTS 201, 202, AND 212	**)**	
	)	

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY'S
TESTIMONY OF RORY DAVIS

My name is Rory Davis. I am the manager of the Regulatory Development Unit in the Air Quality Planning Section of the Illinois Environmental Protection Agency's ("Illinois EPA" or "Agency") Bureau of Air. I have been employed by the Agency in the Air Quality Planning Section for 16 years and was an Environmental Protection Engineer in the Section prior to taking my current position as manager. I have a Bachelor of Science degree in Computational Physics as well as a Bachelor of Science degree in Mathematics from Illinois State University. I have a Master's degree in Engineering from the University of Illinois at Chicago. My graduate studies consisted of an interdisciplinary program involving coursework from the Chemical Engineering and Mechanical Engineering fields with a concentration on Environmental Engineering. I am also a Licensed Professional Engineer in the State of Illinois. In my current position with the Agency, my duties include coordinating Illinois' air quality planning activities in the State and region, managing regulatory proposals, and maintaining the Bureau of Air's air emissions inventories. I will be providing testimony regarding the proposed amendments to Title 35 of the Illinois Administrative Code ("35 IAC") Parts 212, 215, 216, and 217 regarding alternative emission limits ("AELs") during startup, shutdown, and malfunction ("SSM"). These amendments were proposed by Rain CII Carbon LLC ("Rain Carbon"), East Dubuque Nitrogen Fertilizers LLC ("EDNF"), the Illinois Environmental Regulatory Group ("IERG"), and the

American Petroleum Institute ("API"), with a joint proposal filed by Dynegy and Midwest Generation ("Dynegy/MWG").

Kyle Sottoriva, an Environmental Protection Engineer in the Bureau of Air's Regulatory Development Unit, contributed greatly to the analysis in this testimony. Mr. Sottoriva and I will both be available at the April 15, 2024, hearing to answer questions.

Summary of Information Responses

The Agency has been in cooperative discussions with the rule proponents to varying degrees. Prior to the second hearing, the Agency commented to the Board that it would be appropriate for the proponents to file technical support that would address the criteria in the SSM SIP Call Guidance for an analysis of potential worst-case emissions and air quality impacts with regard to the applicable National Ambient Air Quality Standards ("NAAQS"). In general, the Agency requested emissions data from previous startups at the affected sources that would indicate what worst-case emissions could be expected during SSM events, and modeling demonstrations or monitoring data that would demonstrate that these events would not interfere with maintenance of the applicable NAAQS. The Agency requested that the startup data be provided in a format that could be easily used in a modeling demonstration (lb/hr of pollutant).

The following is a summary of what the Agency has received from the rule proponents, and what has been filed recently with the Board prior to the third hearing. In instances when my testimony addresses information that has been provided only to the Agency, the Agency defers to the Board as to whether rule proponents should submit such information into the record for all participants' consideration.

The Agency has received modeling files from those rule proponents that conducted modeling. To the Agency's knowledge, such files have not been provided to the Board as they

are voluminous and not likely useful to most participants. The Agency reviewed all of these modeling files underlying the proponents' filings, and in some cases made suggestions regarding methodologies and assumptions that were included in the analyses.

More specifically, IERG did not provide any additional information to the Agency or the Board, consistent with its representative's statements on status calls with the Hearing Officer. EDNF provided CEMS data from startups and modeling files to the Agency, but did not provide the data or a detailed discussion of the modeling in its most recent filing with the Board. Rain Carbon provided startup data from emissions testing, to the extent that it was available, a modeling report, and modeling files to the Agency. Rain Carbon's most recent filing with the Board contains this startup data and there is an additional modeling report in its "Supplemental TSD." Dynegy/MWG provided the Agency startup data, a modeling report, and modeling files. These data and the modeling report were also provided to the Board. Marathon provided the Agency with a monitoring summary that contained startup data in a graphical format, and that was submitted to the Board in the filing by API. CITGO provided the Agency with startup CEMS data and modeling files, and provided the Board these data and a modeling report in its filing. ExxonMobil provided the Agency with modeling files, but did not provide CEMS startup data. ExxonMobil, in the API filing, provided the methodology for how worst-case emissions were calculated, and provided a printout of the modeling outputs based on the inputs that it provides in the filing narrative. No additional information regarding the Conoco Phillips refinery was provided to the Agency or the Board, as Conoco Phillips has indicated to the Agency that no relief is needed by its facility.

IERG

The IERG proposal seeks to amend the carbon monoxide ("CO") standard at 35 Ill. Adm. Code Section 216.121 for fuel combustion emission sources during periods of startup and shutdown and incorporate portions of the National Emission Standards for Hazardous Air Pollutants ("NESHAP") at 40 CFR Part 63, Subpart DDDDD during those periods. This would apply to any furnace, boiler, or similar equipment used for the primary purpose of producing heat or power by indirect heat transfer. IERG proposes to amend 35 IAC 216.121 to allow a source to comply with certain portions of the NESHAP during startups and shutdowns, in lieu of complying with the existing Section 216.121 standard. In conjunction with the proposed amendments to Section 216.121, IERG proposes amendments to Sections 216.103 and 216.104, governing definitions and incorporations by reference respectively. Specifically, IERG proposes to amend Section 216.103 to add the sentence "T[h]e definitions of 'startup' and 'shutdown' in 40 CFR 63.7575 apply to Section 216.121(b) of this Part." Section 216.104 would be amended to incorporate the NESHAP standard by adding the clause "40 CFR 63, Subpart DDDDD (2022)."

In comments submitted by the Agency on October 23, 2023, prior to the second hearing in this rulemaking proceeding ("Agency's 10/23/23 Comments"), the Agency noted deficiencies in the IERG proposal and clarified what changes and technical support would be necessary for the Agency to consider supporting the adoption of its proposal to the Board, and to assess whether the proposed amendments would be appropriate for a revision of the Illinois State Implementation Plan ("SIP"). The various deficiencies identified fall into two main categories. First, IERG's proposal is not sufficiently tailored. It applies to an extremely large universe of sources and units, with no specificity regarding which sources/units have an actual need for

relief. It is therefore likely that relief is being sought unnecessarily. Also, this large number of subject sources and source categories lack specificity, which fails to satisfy Criteria 1 of the SSM SIP Call Guidance that, "The revision must be limited to specific, narrowly-defined source categories using specific control strategies."

Second, IERG's proposal lacks sufficient technical support justifying the proposed AEL. The technical support requested in the Agency's 10/23/23 Comments includes identifying the greatest potential for air quality impacts during startup and shutdown periods for subject sources, quantifying worst-case emissions, and demonstrating that CO emissions during these periods will not threaten the 1-hour and 8-hour CO NAAQS at these higher impact sources via modeling. Without this support, it is not possible for the Board, the Agency, or the public to identify and consider the emissions impacts, including worst-case emissions impact, of the proposed AEL. Also, this lack of technical support fails to satisfy Criteria 4 of the SSM SIP Call Guidance, "As part of its justification of the SIP revision, the state should analyze the potential worst-case emissions that could occur during start-up and shutdown."

Since the submittal of the Agency's 10/23/23 Comments, and despite suggestions from the Agency in subsequent discussions with representatives of IERG, IERG has failed to narrow the universe of affected sources to a specific number of identifiable sources and units, and it has provided no additional technical support or information to the Agency or Board. The Agency, therefore, has insufficient information with which to evaluate IERG's proposal and objects to the adoption of IERG's broad proposed amendments. Even if adopted by the Board, the Agency cannot offer IERG's proposal in a SIP submittal to USEPA.

EDNF

EDNF proposes amending the nitrogen oxides ("NOx") and opacity emission standards in 35 Ill. Adm. Code 217.381 for new weak nitric acid processes. The proposed NOx limitation for such processes would: (a) reduce allowable emissions from 3.0 lbs of NOx per ton of acid produced ("lbs/T") to 1.5 lbs/T, (b) use a 30-day averaging period at half of the current allowable level; and (c) would apply at all times, including during startup and shutdown. An alternative, non-numerical standard would apply for opacity during startup and shutdown, and these processes would no longer be required to comply with the opacity limitations in 35 Ill. Adm. Code 212.123. Lastly, definitions would be added that would limit the duration of startups and shutdowns.

EDNF has been engaged in cooperative discussions with the Agency throughout the rulemaking process in order to support their proposed rule amendments. One request of EDNF from the Agency's 10/23/23 Comments was confirmation via USEPA Method 5 emissions testing that there is not a particulate matter ("PM") element to opacity readings. This was in response to EDNF's proposed language exempting emission units subject to 35 IAC 217.381(a) (including the EDNF nitric acid production processes) from Part 212 opacity standards. After discussion with EDNF, the Agency agreed that Method 5 testing is not a feasible way to provide this support because the intermittent and unpredictable nature of startup and shutdown events prevents EDNF from testing during such periods, and testing during normal operating scenarios would not be representative of emissions during startup and shutdown. EDNF then proposed utilizing a combination of technical and regulatory USEPA publications (included in their 3/15/24 filing to the Board) to conclude that 1) the opacity during startup and shutdown periods is produced entirely by light reacting with the NOx in the emissions stream (i.e., it is "NOx

opacity" rather than opacity caused by PM), and relatedly, PM emissions from startup and shutdown at EDNF's nitric acid production processes are negligible from an air pollution control standpoint, and 2) USEPA itself recognized this fact in removing the NOx opacity standard present in NSPS Subpart G (to which EDNF is subject) from NSPS Subpart Ga, which was promulgated on August 14, 2012. These provide sufficient evidence that opacity readings under 35 IAC Part 212 are not needed for emissions from the nitric acid processes.

The further Agency requests of EDNF were similar to the information requested of all sources that submitted AEL proposals: emissions data (in this case, NOx emissions in lbs/ton of acid produced, calculated using data from Continuous Emissions Monitoring Systems ("CEMS") at the source for the past five years of operation), the date and duration of each startup and shutdown during the timeframe this data was collected, and modeling of the worst-case emissions scenario from these data to demonstrate that the emissions from startup and shutdown periods will not result in a violation of any NAAQS (in this case, the hourly or annual NO_2 NAAQS).

EDNF provided this data and information as requested to the Agency, but for a more limited timeframe. Specifically, after consultation, the Agency indicated that three years, not five, of data was sufficient. The facility submitted startup and shutdown date, time, duration, and emissions data for the years 2021-2023. This data and information adequately supports the AEL language proposal given relatively low maximum emissions potential and the demonstration of a relatively low impact on the NO_2 NAAQS when modeled, as will be further discussed.

EDNF modeled emissions from the absorption towers at both Nitric Acid Plants 1 and 2 ("NAP1" and "NAP2"). NAP1 was modeled at an hourly emission rate of 0.4918 pounds per hour and NAP2 was modeled at an hourly emission rate of 0.9585 pounds per hour. Both

emission points were modeled during every hour of the year (8760 hours). The maximum 1-hour model receptor concentration produced by EDNF in its modeling demonstration was 8.47 µg/m^3, which is only 4.5% of the NAAQS. Further, this maximum modeled concentration was the 1st highest 1-hour value, which value is typically compared against the 8th highest modeled concentration. Thus, EDNF's impacts would actually be less than 4.5% of the NAAQS.

Based on the additional technical support and justification for the amendments that EDNF has provided, the Agency does not object to adoption of the rule proposal as set forth in EDNF's March 15, 2024, filing with the Board, with one caveat. The Agency opposes the proposed deletion of Section 217.381(b), (c), and (d) as reflected in Exhibit 1 of EDNF's filing; these are existing provisions in the current rule that were not deleted in EDNF's original proposal and were not part of discussions with the Agency. Notably, the Agency has confirmed with EDNF that the strikethrough of subsections (b), (c), and (d) was unintentional/scrivener's error.

Rain Carbon

Rain Carbon's original proposal sought to amend Sections 212.124, 212.322, and 215.302 to establish alternative emission standards for opacity, PM, and volatile organic material ("VOM"), respectively, during startup for opacity and VOM and during startup, malfunction, and breakdown ("SMB") for PM. The proposed amendments would be applicable to emission units designated Kiln 1 and Kiln 2 (and the associated pyroscrubber pollution controls). Specifically, Rain Carbon proposed an amendment to 35 IAC Section 212.124 to allow for up to a 3-hour averaging period (using Test Method 9 of Appendix A to 40 C.F.R. Part 60) to demonstrate compliance with the opacity standard in Section 212.123(a) during startup. Rain Carbon also proposed amending Section 212.322 to allow the units to exceed the PM emission standards in

Section 212.322(c) during SMB events, up to 720 hours per year. Finally, Rain Carbon sought an amendment to 35 IAC 215.302(b) to allow the units to demonstrate compliance with the VOM emission standard in Section 215.301 based on an average of hourly emissions during startup, with an averaging period of up to 24 hours.

To provide technical support for its original AEL proposal, Rain Carbon conducted emissions testing during a startup of Kiln 1 (the "startup testing"), and then performed modeling based on the results of this testing. This modeling was discussed in the Agency's 10/23/23 Comments, and the Agency expressed concern on the extent to which the methodology properly represented a worst-case analysis. Specifically, the Agency requested that Rain Carbon conduct modeling based on the total worst-case emissions from the Kilns, rather than considering the excess emissions beyond the applicable standards from this worst-case scenario and evaluating this quantity of excess emissions against a Significant Impact Level ("SIL").

The Agency opined on the use of the modeling to justify the proposed PM alternative standard of 720 hours per kiln per year. The Agency requested that Rain Carbon consider whether fewer allowable annual operating hours in excess of the PM standard were feasible based on past operating data, and further requested that Rain Carbon justify the number of allowable excess hours in the updated modeling.

The Agency expressed concerns with the VOM emission rates reported from the startup emissions testing, as the maximum rate from the original TSD for all test runs performed was 2.41 lbs/hr, which is well below the 35 IAC 215.301 standard of 8 lbs/hr and thus, in the absence of further context, indicated no startup relief was necessary. The Agency also requested a technical justification for the proposed 24-hour averaging period within the VOM AEL request. The only justification Rain Carbon provided was that the duration of any startup event is

authorized to extend up to 24 hours under the facility's CAAPP permit. The Agency requested that Rain Carbon use prior operating data to determine what minimum averaging period would be feasible for the rolling VOM emission rate average to comply with the 8 lb/hr standard.

Rain Carbon engaged the Agency and in the course of those discussions developed an updated modeling methodology to address the Agency's comments. The facility also provided a response to the Agency's request for reconsideration and justification for both the originally proposed 720 allowable hours in excess of the 35 IAC 212.322 PM standard and the 24-hour averaging period for determining compliance with the 35 IAC 215.301 VOM standard. In this response, Rain Carbon reduced the annual allowable excess PM hours in its proposal to 300 hours per kiln and the averaging period within the VOM AEL to 12 hours. Rain Carbon used prior operating records to support developing these voluntary reductions, as recommended by the Agency.

Rain Carbon's updated modeling uses the maximum emissions determined from the startup testing as the SSM worst-case emissions scenario, in conjunction with data estimation procedures that the Agency agrees are appropriate. Specifically, the maximum hourly PM emission rate of 57.1 lbs/hr used in the updated modeling was calculated by fitting the testing data to a correlation curve that provides PM emission rate values up to 1800 ^{O}F. The startup testing measured five PM emission rates for pyroscrubber inlet temperatures ranging from 694 to 1373 ^{O}F, which necessitated this calculation procedure to estimate the maximum hourly PM emission rate, as the maximum rate will occur at a temperature greater than 1373 ^{O}F, at which PM emissions begin to decrease until 1800 ^{O}F is reached. Because the startup testing measured increasing PM emission rates up to the highest temperature point tested, Rain Carbon needed to perform data interpolation to determine this maximum emission rate. The Agency has no

concerns with this estimation procedure and agrees that the calculated maximum emission rate is sufficiently conservative for use as an input for the modeling demonstration. If the startup testing had been performed at temperature up to 1800 ^{O}F, the temperature at which compliance with 35 IAC 212.322 is demonstrated could have been lower than 1800 ^{O}F. The 1800 ^{O}F pyroscrubber inlet temperature value is the minimum temperature at which compliance is guaranteed, meaning compliance could be demonstrated at lower temperature values during any given startup procedure, which could move the inflection point of maximum PM emission rate to a lower value.

For VOM, Rain Carbon similarly used data extrapolation to estimate the maximum VOM emission rate from the startup testing measured data. The lowest temperature point of data collection was 694 ^{O}F, while Rain Carbon is permitted to initiate green coke feed to the kilns at 400 ^{O}F. Because VOM emission rates would be expected to be maximized at the minimum temperature in the kilns, Rain appropriately extrapolated the measured VOM emission rate at 694 F to 400 F, to obtain a maximum rate of 4.82 lbs/hr.

However, this value is expressed on an “as propane” basis (a data quantification procedure based on the calibration gas used in the testing and allowed by USEPA Method 25A). The Agency recommended that Rain Carbon convert this to an “as carbon” basis in order to estimate the maximum potential VOM emission rate from startup. Converting the emission rate to an “as carbon” basis triples the maximum VOM emission rate to 14.47 lbs/hr. Using this value as the maximum emission rate in the modeling is conservative, and it eliminates the Agency’s prior concern that the startup testing data reported to the Agency suggests that no startup VOM relief is necessary.

Because VOM is a precursor to ozone formation, rather than a directly emitted criteria pollutant, the impacts on the potential for ozone NAAQS nonattainment from any VOM emissions scenario cannot be modeled using dispersion modeling, as with PM and other criteria pollutants. To address this difficulty, Rain Carbon has utilized the USEPA-developed concept of Modeled Emission Rates for Precursors ("MERPs"). USEPA has provided VOM "MERP values" (a quantification of the VOM emissions for a selected geographical location that would be expected to significantly contribute to ozone formation) for a variety of hypothetical emission points distinguished by stack height, annual emission rate, and other factors specific to the chosen geographical location. USEPA performed photochemical modeling to calculate MERP values for hundreds of hypothetical emissions points across the United States. Rain Carbon appropriately selected a MERP value published by USEPA for one of the closest geographical locations available (Boone County, Indiana), based on its lower MERP value compared to other nearby MERP-analyzed locations. This MERP value is 2,985 tons of VOM emitted per year, and adding a further layer of conservativeness to the analysis, it was developed based on a stack height of 10 meters, while Rain Carbon's stack emits at a height of 45.72 meters. Rain Carbon calculated a considerably conservative annual VOM emission rate from the Kilns based on assumed operation at startup VOM emission rates for every hour of a calendar year. In comparing this maximum annual VOM emission rate from the Kilns to the Boone County MERP value, Rain Carbon effectively demonstrates that the contribution from the Kilns' startup VOM emissions to the potential for ozone NAAQS exceedance is very small, even given very conservative assumptions.

Rain Carbon performed a dispersion modeling analysis starting from the 57.1 lbs/hr maximum interpolated PM emission rate from the Kilns. Specifically, this emission rate was

speciated into PM_{10} and $PM_{2.5}$ components based on data from USEPA AP-42 Compilation of Air Emissions Factors from Stationary Sources, Appendix B.2. Rain Carbon then utilized USEPA guidance published in 2011 that addresses intermittent operating scenarios (such as SSM periods) in dispersion modeling for NOx emissions with respect to the 1-hour NO_2 NAAQS. This guidance includes a methodology to prorate intermittent emissions over an annual period by dividing the annual number of expected hours of intermittent operation (in this case, easily identified as 300 hours for both Kilns) by 8760. In utilizing this guidance and PM_{10} and $PM_{2.5}$ speciation, Rain Carbon concluded that PM_{10} and $PM_{2.5}$ emission rates of 1.04 and 0.35 lbs/hr, respectively, can be modeled at continuous year-round operation in order to quantify the maximum ambient concentration impacts from the intermittent SSM periods of Kiln operation. Rain Carbon concludes from this methodology that the modeled first high ambient concentrations from the Kilns' SSM events are no higher than 0.1% of the relevant NAAQS ambient concentrations for each of the PM_{10} 24-hour, $PM_{2.5}$ 24-hour, and $PM_{2.5}$ annual NAAQS.

The Agency recognizes that Rain Carbon's PM modeling methodology accurately utilizes the intermittent emissions approximation contained in the 2011 1-hour NO_2 NAAQS guidance, and that this methodology produces results that are a negligible percentage of the relevant NAAQS. The Agency had concerns regarding the application of this guidance to the PM emissions from the Kilns, as the Agency is unaware of any USEPA guidance that specifically references the proper use of this methodology for non-NO_x criteria pollutant emissions, and Rain Carbon does not provide any such reference within its TSD. The Agency considers the NO_2 guidance more appropriate for considering the Kilns' emissions impact on the $PM_{2.5}$ annual standard, as opposed to the $PM_{2.5}$ and PM_{10} 24-hour standards. However, due to the very low modeled impacts Rain Carbon's modeling analysis produced for each NAAQS, it is sufficient to

demonstrate that the impact from these SSM events would not be of concern even had the analysis been conducted using the maximum interpolated emission rate of 57.1 lbs/hr. This is because modeled concentrations of 50 or even 100 times those that their analysis produced would not have raised concerns about interference with the applicable NAAQS.

Lastly, Rain Carbon has addressed the questions from the Agency's 10/23/23 Comments pertaining to the justification for the three-hour averaging period for compliance with the 35 IAC 212.123(a) opacity standard. Rain Carbon states that because the maximum opacity value observed from the startup emissions testing occurred at a Kiln temperature of approximately 600 F, there is potential for higher values closer to the 400 F temperature at which green coke is permitted to be introduced to the Kilns. This potential for opacity values greater than 50% at the beginning of startup periods necessitates an averaging period of greater than one or two hours.

Based on the additional technical support and justification for the amendments that Rain Carbon has provided, the Agency does not object to adoption of the rule proposal as set forth in Rain Carbon's March 15, 2024, filing with the Board.

Petroleum Refineries

API's proposal seeks to amend 35 Ill. Adm. Code Sections 216.103, 216.104, and 216.361 regarding carbon monoxide standards for fluid catalytic cracking units ("FCCUs") during startup and hot standby. Section 216.361 would have a new subsection (d) added which incorporates by reference select provisions of the NESHAP for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units found in the code of at 40 CFR Part 63, Subpart UUU. Under the NESHAP, API would comply with work practice standards during startup and hot standby in lieu of compliance with existing numerical emissions

limitations. API's proposal would also amend definitions and incorporations by reference in Sections 216.103 and 216.104, respectively.

ExxonMobil, CITGO, and Marathon refineries have responded to the Agency's comments, questions, and requests for data from the Agency's 10/23/23 Comments in varying degrees of comprehensiveness since the second hearing in this rulemaking proceeding. CITGO and Marathon provided a description of the FCCU units' operation that resolves the Agency's request for clarification of how the units operate with respect to the definitions of "full burn unit" and "partial burn unit" as provided in API's initial proposal. This clarification assists in these sources' demonstrations that the FCCU units' SMB events will not threaten the CO NAAQS at or near the source, because the FCCU regenerator exhaust gas 1% oxygen concentration requirement from NESHAP Subpart UUU effectively causes each source's FCCU unit to operate at full burn during startup and hot standby events. This has decreased the CO concentrations and emission rates from the FCCU units during such events. Therefore, even in startup and hot standby scenarios in which the sources are unable to vent FCCU emissions to the CO boilers due to uncombusted hydrocarbons in the waste stream, the CO emission rate is low relative to pre-NESHAP Subpart UUU levels such that the worst-case ambient CO concentration from these SMB events has a minimal impact on the potential for CO NAAQS exceedance. This is demonstrated in the modeling performed by ExxonMobil and CITGO and in the monitoring study performed by Marathon.

Based on the additional technical support and justification for the amendments that API has provided, the Agency does not object to adoption of the rule proposal as set forth in API's March 15, 2024, filing with the Board.

ExxonMobil

In its March 15, 2024, filing with the Board, API did not provide a discussion of ExxonMobil's FCCU's operation with respect to the definitions of partial or full burn units, as requested in the Agency's 10/23/23 Comments. However, the CO concentrations and emission rate data used as inputs in the modeling clearly demonstrate the effect of compliance with NESHAP Subpart UUU on the FCCU's impact on CO concentrations. Specifically, the maximum CO concentrations and emission rates for the 2013 startup compared to the more recent startup decrease from 43,800 ppm and 35,200 lb/hr to 2,000 ppm and 4,900 lb/hr. In turn, the modeled ambient impacts, as a percentage of the NAAQS, decrease from 13.51% to 2.77% for the 1-hour NAAQS and from 19.75% to 5.18% for the 8-hour NAAQS. The Agency concurs with ExxonMobil that these low impacts in relation to the CO NAAQS demonstrate that the worst-case SMB events from the FCCU unit will not cause significantly high ambient CO concentrations or interfere with either relevant NAAQS.

Additionally, ExxonMobil provided the Agency with modeling files from its analysis, but not the SMB event data that was requested in the Agency's 10/23/23 Comments. However, the Agency can confirm that the maximum concentrations that were used agree with the information that the Agency has on file, and given the additional information ExxonMobil provided in its analysis description (Exhibit 1, p. 2) regarding stack diameter, temperatures, and flow rates, the maximum emission rates in lb/hr are appropriate for the modeling conducted.

CITGO

CITGO comprehensively and effectively responded to all of the Agency's 10/23/23 Comments. The discussion and analysis regarding the FCCU unit's operation with respect to full and partial burn combustion answer the questions from the Agency's 10/23/23 Comments and

provide further insight into the worst-case startup and hot standby scenario that the FCCU undergoes. Specifically, CITGO provides the most recent SMB events and associated emissions data for the four categories of 1) startup following refractory dry-out, 2) return to normal operations after an unplanned unit shutdown involving periods of hot standby, 3) periods of hot standby not associated with startup or unplanned unit shutdowns, and 4) CO boiler trips. CITGO demonstrates that the worst-case scenario occurs during category 2) above. This shows that the worst-case emissions scenario for the FCCU occurs during the prolonged periods of torch oil injection into the regenerator during hot standby periods caused by SMB events of the FCCU or other upstream or downstream units, rather than periods of torch oil injection during a "cold" startup involving refractory repair, as anticipated by the Agency. Most importantly, CITGO effectively demonstrates the worst-case startup and hot standby event, and then models it using a very conservative emissions scenario in which the CO emission rate and stack flow velocity and temperature are two standard deviations higher and lower, respectively, than measured values from the actual worst-case scenario. This analysis generates CO ambient concentration impacts from this worst-case event that are less than 1% of both the 1-hour and 8-hour CO NAAQS, despite the considerable level of conservativeness in the analysis. CITGO's technical support is comprehensive.

Marathon

Marathon provides a short yet effective description of its FCCU unit's operation. This confirms that Marathon's FCCU unit can operate in partial burn or full burn mode, and that it routes to the CO boiler for CO control during periods of normal partial burn operation. Marathon further provides CO emissions data from ten separate startup events from the years 2019 and 2020. This data shows a maximum CO emission rate of approximately 250 lbs/hr,

which lasts for a relatively short period of several hours, as do all of the CO lb/hr emission rate spikes within the data for all ten of the startups.

Marathon did not provide a modeling analysis, as requested in the Agency's 10/23/23 Comments. However, Marathon provides the results of monitoring the facility was required to conduct near the source. This monitoring demonstrates that 1) the monitors never collected data indicating CO NAAQS exceedance concerns (the maximum monitored concentrations were on the order of 1-2 ppm, whereas the 1-hour and 8-hour CO NAAQS are 35 and 9 ppm, respectively, which is less than 15% of the 8-hour standard 5% of the 1-hour standard) and 2) none of these maximum monitored CO concentrations occurred during any startup event of the FCCU.

Dynegy/MWG

In its Joint Proposal, Dynegy and MWG seek amendments that would create a new a subsection (d) in Section 212.124, which would allow the affected units to demonstrate compliance with the applicable 20% or 30% opacity standards in Sections 212.122(a) or 212.123(a) on a three-hour averaging basis during times of SMB.

Dynegy/MWG have completely and effectively responded to the Agency's 10/23/23 Comments and requests for further information, data, and modeling. Outside of the requested modeling, the Agency's comments and requests can be summarized in two main concerns that required examination by Dynegy/MWG. Data and analysis needed to be submitted to quantitatively confirm that 1) individual six-minute opacity exceedances will not lead to disproportionate short-term increases in PM emissions compared to six-minute operating periods in compliance with the 20% or 30% opacity standard and 2) operation under the AEL will not lead to non-compliance with any applicable PM emission standard or PM NAAQS, taking into

consideration all possible three-hour AEL operating scenarios and quantifying the worst-case PM emissions that could occur for any given three-hour operating period that complies with the AEL. The Agency requested that Dynegy/MWG utilize CEMS data available from some of the represented power plants to perform this analysis.

Dynegy/MWG used PM CEMS data from Kincaid Power Station ("Kincaid") and Powerton Generating Station ("Powerton") in the analysis. The PM CEMS at these two facilities were installed and are operated in accordance with federally enforceable Consent Decree requirements, and both of the CEMS monitors have been certified in accordance with EPA Performance Specification 11. Each CEMS monitor is installed on a common stack shared by two units at each of the facilities (i.e., on Kincaid Units 1 and 2 and on Powerton Units 5 and 6).

In the original TSD prepared by Agora Environmental Consulting ("Agora") and filed with the Board on August 7, 2023, Agora provided opacity correlations for each of Baldwin Energy Complex ("Baldwin"), Newton Power Station ("Newton"), Kincaid, and Powerton. These correlations were based on data collected during prior emissions testing performed at the power plants. Agora considered both USEPA Method 5 performance testing data and data collected from the modified version of Method 5 prescribed by the Mercury and Air Toxics Standards ("MATS") Rule ("MATS Method 5 Testing"), and created separate opacity correlations from data collected from both of these testing methods for each of the power plants. Agora developed these correlations by gathering PM emissions data (in units of lbs of PM emitted per million British Thermal Unit ("mmBtu") of heat input to the boiler) from the Method 5 and MATS Method 5 testing performed separately at each of the power plants between the years 2016 and 2022, and then plotting these PM data against opacity observations made and recorded at the time each PM measurement was taken. Between the Method 5 and MATS

Method 5 correlations developed for each of the power plants, Agora selected the PM correlation that had the higher slope when plotted to estimate the PM emissions in lb/mmBtu at the Part 212 opacity standard, and then compared this estimated emission rate against the applicable Part 212 PM standard for each source.

In response to the Agency's 10/23/23 Comments, Agora collected and plotted all one-minute PM emissions CEMS data points from 2022 for Kincaid and Powerton that are in exceedance of 30% opacity (the applicable 35 IAC 212 standard for both of these sources). The opacity value plotted against each of these CEMS data points was determined by readings from the Continuous Opacity Monitoring System ("COMS") present at each of Kincaid's and Powerton's stacks. Agora developed opacity correlations from these CEMS data for the two facilities, appropriately excluding the one-minute data points with PM emission rate below 0.02 lb/mmBtu as outliers in developing the correlations. Agora then plotted these data points and correlations along with the formerly developed PM testing correlations and compared the results.

The Agency recognizes that the PM CEMS data used in the new correlations is based on one-minute CEMS readings that alone cannot indicate an opacity exceedance (which is determined on a six-minute interval) and that these data points "reflect short-term, transient events and illustrate a large degree of variability due to the variety of conditions that the events represent, drift associated with the measurements, and potential other uncertainties." (p.12, Exhibit 1, Agora). Despite these uncertainties inherent in the CEMS data, the Agency concurs with Agora that the CEMS data correlations are sufficiently similar to the testing method correlations to justify their consideration as evidence of estimated PM emissions under the proposed AEL. The Agency further concurs that the "roughly linear" relationship between the opacity and PM CEMS measurements shown on the CEMS data correlations provides strong

evidence that the PM emissions from short-term six-minute operating periods in excess of the 30% opacity standard do not increase in a non-linear (e.g. exponential) manner. This aids in resolving the Agency's prior expressed concern that the total PM emissions from three-hour averaging periods under the proposed AEL could increase beyond the relevant PM standards if such three-hour periods include one or more six-minute periods far in excess of 30% (up to 100%, as allowed by the proposed AEL language). In other words, the linear relationship demonstrated in the PM CEMS correlations is evidence that no three-hour operating scenario that complies with the proposed AEL limitation will result in excess PM emissions beyond the relevant standard. This is because regardless of the increased PM emissions that can occur during short-term periods of opacity in excess of 30%, the fact that the three-hour average opacity value must be below the opacity standard confirms that the total PM emissions from the three-hour period will not exceed the PM emissions that would have occurred if the opacity (and associated PM emission rate) had remained steadily at 30% through those three hours of operation.

The emissions testing and PM CEMS data correlations for Kincaid and Powerton provide sufficient evidence to demonstrate a low probability of the proposed AEL resulting in an exceedance of the applicable 35 IAC 212 PM standard for both of these sources. Furthermore, the evidence provided by the PM CEMS correlations for Kincaid and Powerton can be used as evidence for Baldwin's and Newton's likelihoods of exceeding their relevant PM standards, as the agreement between the emissions testing and PM CEMS data correlations for Kincaid and Powerton suggests that because the Baldwin and Newton emissions testing correlations demonstrate compliance with the relevant PM standards at the relevant 35 IAC 212 opacity standard (i.e. 20% or 30%), a correlation for these sources that considers measured opacity values up to 100% (not possible due to Baldwin's and Newton's lack of PM CEMS) would also

show a linear relationship that demonstrates compliance with the PM standards at a three-hour average opacity value below the relevant opacity standard.

In addition to the above analysis, Dynegy/MWG performed dispersion modeling that demonstrates a lack of PM_{10} and $PM_{2.5}$ NAAQS exceedances under the worst-case emissions scenario for each of the sources, as requested in the original Agency 10/23/23 Comments. Specifically, for each of the sources, Trinity Consultants, Inc. ("Trinity") performed a modeling analysis that considers two scenarios evaluated as separate "worst-case" emissions profiles – one that models the units operating at full load year-round and continuously emitting at the lowest applicable PM emissions limitation (the "Worst-Case Full Load at PM Limits" scenario"), and one that models the units operating at full load year-round and continuously emitting at the emission rate obtained from the opacity correlations at the value of the relevant opacity standard (the "Worst-Case Full Load at AEL Limits" scenario). As an example, the lowest applicable PM limitation for Baldwin is the consent decree emissions limit of 0.015 lb/mmBtu – for the "Worst-Case Full Load at PM Limits" scenario, this was converted to a gram/second emission rate by assuming continuous full-load operation of the units and then modeling this value at year-round operation. The opacity standard applicable to Baldwin is 30% from 35 IAC 212.123(a). For the "Worst-Case Full Load at AEL Limits" scenario, the PM emission rate at an opacity value of 30% determined from the emissions testing PM correlations was similarly modeled assuming continuous, year-round operation at this rate. The $PM_{2.5}$ and PM_{10} emission rates are speciated using AP-42 estimates and modeled against the relevant statistical parameter for the $PM_{2.5}$ 24-hour standard, the current annual $PM_{2.5}$ standard, the recently adopted annual $PM_{2.5}$ annual standard, and the PM_{10} 24-hour standard.

The two different "worst-case" modeled scenarios appropriately capture the maximum PM emission rate at which compliance with all applicable PM emission standards is determined for each of the sources. For Baldwin and Kincaid, this is the "Worst-Case Full Load at AEL Limits" scenario, as the PM emission rate estimated from these sources' opacity correlations at 30% opacity is larger than their maximum regulatory PM emissions limitation (derived from consent decrees for both). For Newton and Powerton, this is the "Worst-Case Full Load at PM Limits" scenario, as the maximum regulatory PM emissions limitation for both of these sources is larger than the PM emission rate estimated from these sources' opacity correlations at the relevant opacity standard. The two modeled scenarios further include appropriate levels of conservativeness by assuming continuous year-round operation at full load and at the maximum of the two modeled emission limits. The results clearly demonstrate the low potential for an exceedance of any of the applicable $PM_{2.5}$ or PM_{10} NAAQS standards. For each of these standards and for each of the four sources, the maximum modeled impact considering both "worst-case" scenarios is less than 2% of the NAAQS standard.

Finally, after discussion with the Agency, Dynegy/MWG has included in their most recent filing a change in the proposed AEL language that makes the AEL averaging period prospective rather than retrospective, meaning the averaging period considers any given six-minute operating period and averages it with the following 174 minutes of six-minute operating periods, rather than the prior 174 minutes of six-minute operating periods. This change avoids the scenario in which the first three hours of any given SMB scenario are unable to be averaged under the AEL, and further prevents the AEL from allowing the sources to "excuse" one or several six-minute operating periods in excess of the opacity standard by using the preceding timeframe (up to 2.9 hours) of opacity values. In other words, once any measured six-minute

opacity value exceeds the standard, the source must use the following 174 minutes to get the average opacity under the value of the standard, rather than potentially using several hours of compliant six-minute period data not in excess of the opacity standard before any individual six-minute period of excess opacity occurs.

Based on the additional technical support and justification for the amendments that Dynegy/MWG has provided, the Agency does not object to adoption of the rule proposal as set forth in Dynegy/MWG's March 15, 2024, filing with the Board.

CERTIFICATE OF SERVICE

I, the undersigned, an attorney, state the following:

I have electronically served the attached ILLINOIS ENVIRONMENTAL PROTECTION AGENCY'S TESTIMONY OF RORY DAVIS upon the following persons:

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My e-mail address is dana.vetterhoffer@illinois.gov. The number of pages in the e-mail transmission is 26. The e-mail transmission took place before 4:30 p.m. on April 2, 2024.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY,

By: /s/ Dana Vetterhoffer
Dana Vetterhoffer
Division of Legal Counsel

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Exhibit 2

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
	)	R23-18(A)
AMENDMENTS TO 35 ILL.	)	(Rulemaking-Air)
ADMIN. CODE PARTS 201, 202,	)	Third Hearing
AND 212.	)	

REPORT OF PROCEEDINGS OF THE HEARING in the above-captioned case before HEARING OFFICER CHLOE SALK, Illinois Pollution Control Board, at 160 North LaSalle Street, Room N505, Chicago, Illinois, taken before Janet L. Brown, CSR, on April 15, 2024, at 10:00 AM.

PRESENT:
MICHELLE GIBSON, Lead Board Member
JENNIFER VAN WIE, Board Member
ANAND RAO, Board Staff
ALSO PRESENT:
TIM FOX, Board Member
DANA VETTERHOFFER, IEPA
KYLE SOTTORIVA, IEPA
DAVID LORING, Rain Carbon
BYRON TAYLOR, East Dubuque Nitrogen Fertilizer
ANDREW SAWULA, Midwest Generation & Dynergy
MELISSA BROWN, Environmental Regulatory Group
ALEC MESSINA, American Petroleum Institute
JASON E. JAMES, Illinois Attorney General's Office
MOLLY KORDAS, Illinois Attorney General's Office
JUSTIN BERTSCHE, Illinois Attorney General's Office

I N D E X

(Exhibits retained by Hearing Officer.)

HEARING OFFICER: Good morning everyone and welcome to the Illinois Pollution Control Board hearing.

My name is Chloe Salk, and I am the hearing officer for this rulemaking proceeding entitled Amendments to 35 Illinois Administrative Code 201, 202, and 212. The Board docket number for this rulemaking is R23-18(A).

To get started, I want to quickly go through three preliminary items: Introductions, the procedure to date, and then housekeeping, including the order in which we'll plan to proceed.

First, introductions. Present today from the Board are Board Member Michelle Gibson, the lead board member assigned to this docket, and Board Member Jennifer VanWie. And then present from the Board staff are Anand Rao of the Board's technical staff, and Tim Fox, who is in the audience today.

Second, the Board's procedure to date. The Board held the first meeting in this matter on September 27th, 2023, and the second hearing on November 1st, 2023.

On October 26th, 2023, the Illinois

Attorney General's Office filed a motion requesting a third hearing in this sub docket. On November 16th, 2023, the Board granted the Attorney General's Office motion requesting a third hearing.

Today we are holding the third hearing in this matter.

In the order scheduling this hearing, the hearing officer directed participants to file responses to the Illinois Environmental Protection Agency, or IEPA's request for information and any pre-filed testimony no later than March 15th.

On March 15th, the Board received responses to IEPA's request for information from Dynegy and Midwest Generation, American Petroleum Institute, or API, and Citgo Petroleum, Rain Carbon, and East Dubuque Nitrogen Fertilizer, or EDNF.

Also on March 15th, Dynegy and Midwest Generation filed the testimony of Stephen Norfleet, and Rain Carbon filed the testimony of Bryan Higgins.

On March 22nd, Dynegy and Midwest Generation filed a final comment in response to

IEPA's request for information and filed the supplemental testimony of Stephen Norfleet.

On April 2nd, IEPA filed the testimony of Rory Davis.

The hearing officer also directed participants to pre-file questions based on responses to IEPA's request and pre-filed testimony by April 8th.

On that date, the Board received pre-filed questions from the Attorney General's Office, the Illinois Environmental Regulatory Group, or IERG, and API and Citgo. In a hearing office order on that date, the Board also submitted a question.

On April 12th, EDNF filed written responses to these questions. These response were not required, but they are helpful in expediting the hearing, and the Board appreciates the time and effort of the participants' staff and counsel.

The Board posted all these documents to its Clerk's Office On-Line, or COOL, under this docket number R23-18(A) as they were filed.

And on to our housekeeping for the

hearing. This hearing is governed by the Board's procedural rules. Under Section 102.426 of those rules, all information that is relevant and not repetitious or privileged will be admitted by the hearing officer into the record.

Please bear in mind that any questions posed today by the Board and its staff are intended solely to help develop a clear and complete record for the Board's decision, and those questions do not reflect any determination or judgment on the proposal, testimony, or questions.

For the sake of our court reporter, please speak clearly and avoid speaking at the same time as another person so that we can help produce a clear transcript. If you are asking a question, please state your name and the organization you represent prior to any questions.

Also, if talking about sections of the rules, please spell out the section letter such as 620.101(D), as in dog.

Ms. Court Reporter, please feel free to stop me or anyone else at any point if we are going too fast, talking too softly, or if you need something repeated.

There is a sign-in sheet over by the door for anyone who wants to sign up for public comments. So if there are any members of the public in person here today, please go ahead and write your name on the list.

As a reminder, anyone can submit written public comments on the Board's Clerk's Office On-Line system. The board weighs oral and written public comments equally.

As to the order of today's proceeding, we'll call the following witnesses in this order. First will be Rory Davis with IEPA, then Steven Norfleet with Dynegy and Midwest generation, then Bryan Higgins with Rain Carbon, and then EDNF's witness.

After being duly sworn in, the pre-filed testimony will be entered into the record as if read under Section 102.424(f) of the Board's procedural rules.

We will then turn to questions for each witness, with pre-filed questions from the Attorney General's Office first, then IERG, API and Citgo's, any questions from any other participants, and then the Board's questions.

At the end of the hearing, I'll ask if there are any public comments from members of the public.

I anticipate breaking for an hour for lunch, if we're still going by then, from 12:30 to 1:30, and another short afternoon break around 3:00 if we're still going at that point. And if we haven't finished with questions and public questions already, we'll end today around 5:00 PM.

Are there any questions about the order of proceeding? Seeing none, we will turn to testimony and questions.

All right. We will start with Rory Davis with IEPA. If you could please come and sit up in the front row.

Good morning. Okay. Would the court reporter please swear in the witness.

COURT REPORTER: Would you raise your right hand, please.

(Witness sworn.)

RORY DAVIS,

having been first duly sworn, was examined and testified as follows:

HEARING OFFICER: As mentioned earlier, this

witness's testimony is entered into the record as if read and is entered as Hearing Exhibit A.

(Hearing Exhibit A identified.)

HEARING OFFICER: All right. We will proceed with questions first from the Attorney General's Office. If you would like to step up to the podium.

And then please state your name for the court reporter.

MR. JAMES: Good morning. I'm Jason James from the Illinois Attorney General's office.

DIRECT EXAMINATION

BY MR. JAMES:

MR. JAMES: Good morning, Mr. Davis.

MR. DAVIS: Good morning.

MR. JAMES: We pre-filed a couple of questions ahead of time, and hopefully you've had a chance to take a look at those.

MR. DAVIS: Yes.

MR. JAMES: Great. So I'll just basically paraphrase what we have written and then please provide your answer.

In your written testimony concerning IERG's proposal --

COURT REPORTER: Concerning?

MR. JAMES: Sure. IERG, which is an abbreviation for Illinois Environmental Regulatory Group, IERG.

You testified that their proposal failed to specify sources or units that have an actual need for regulatory relief.

How does the lack of specificity prevent you from determining which facilities could be affected by the proposal and how could they be affected?

MR. DAVIS: The lack of specificity would not prevent the Agency from determining the universe of sources that could be potentially affected by the proposal. IERG's proposal would affect all fuel combustion emission sources greater than 10 million BTU.

Based on the information available to the Agency, approximately 3,900 units at approximately 1,500 sources across Illinois would potentially be impacted. This statement in the Agency's testimony concerned our inability to assess whether relief from currently applicable emission standards is even necessary, and to the

extent it is, for which sources and what the individual and cumulative impact on air quality would be.

Absent this information, the Agency cannot ensure or represent to USEPA that there will be no adverse impact on air quality. The Agency also pointed out that the proposal is so broad it does not appear to satisfy USEPA's criteria for review of AELs, or alternative emission limits, concerning specific narrowly defined source categories.

MR. JAMES: Thank you. I'll move on to part (b) of that question.

So how did you suggest to IERG how to more specifically describe the affected facilities or otherwise change to improve their proposal, and how did they respond?

MR. DAVIS: The Agency communicated the same concerns to IERG as were conveyed to the Board about the proposal, and those communications began prior to the initial filings in this proceeding.

Most recently, the Agency reiterated to IERG that it should narrow the scope of its rulemaking proposal to those facilities that

are actually in need of relief as supporting data could be ascertained from those facilities and emissions impact could be assessed.

Generally, representatives of IERG indicated that they would consider the suggestions, but would likely not be identifying specific facilities in need of relief or providing facility-specific information.

MR. JAMES: Thank you. Then I'll go to Number 2. You also testified IERG failed to provide sufficient technology support justifying the proposal, including technical support demonstrating impact of emissions that would be allowed under the proposal.

How would the additional info that you requested help measure the emissions allowed under IERG's proposal?

MR. DAVIS: The additional information would presumably include analysis of worst-case emission scenarios and impact on air quality. These analyses would be similar to those provided by other proponents in this rulemaking and include data indicating what worst-case emissions are during startup and shutdown of affected units and

an analysis of the impacts of those episodes on air quality.

MR. JAMES: Thank you. Then 2(b), Without this additional support, is it possible to determine the extent to which IERG's proposal is effective in reducing emissions?

MR. DAVIS: No, it is not possible to determine emissions impact from the large number of sources that would be affected by the proposal.

MR. JAMES: Thank you. And my last question is Number 3. In February of this year, the U.S. Environmental Protection Agency, that's USEPA, strengthened the National Ambient Air Quality Standards, that's NAAQS, N-A-A-Q-S, for particulate matter, also known as PM. So that rule I'll call the PM NAAQS, spelled P-M N-A-A-Q-S.

USEPA's new PM NAAQS lowered the primary annual particulate matter 2.5 standard down to 9 ug/m. I'll skip that citation.

Will this new more stringent PM NAAQS affect any determination made by IEPA from your testimony which you submitted prior to the finalization of the new PM NAAQS that the proposed AEL will not interfere with any NAAQS either now or

in the future?

MR. DAVIS: The Agency did consider the new 2.5 NAAQS, or National Ambient Air Quality Standards, when evaluating the impacts of the proposal. The new standard should not impact any determinations that have been conveyed to the Board. States' obligations under the new NAAQS are still in the process of being assist -- assessed.

It is always possible that rule revisions may be needed in the future to meet this or subsequent NAAQS, but it should not have any impact on the current proceeding.

MR. JAMES: Thank you. That's all my questions.

HEARING OFFICER: All right. We will have IERG come up next for questions.

DIRECT EXAMINATION

BY MS. BROWN:

MS. BROWN: Good morning. Melissa Brown of the Illinois Environmental Regulatory Group, also known as IERG, I-E-R-G.

Thank you for being here, Mr. Davis. Good morning.

So going to the first question. Is

the Agency aware of the U.S. Court of Appeals for the District of Columbia's decision issued on March 1st, 2024, which involved petitions for review of USEPA's startup, shutdown, and malfunction, abbreviated as SSM, State Implementation Plan, abbreviated as S-I-P or SIP, SIP call?

MR. DAVIS: Yes. Yes, we are.

MS. BROWN: Has the Agency had any discussions with USEPA about the March 1st, 2024, decision?

MR. DAVIS: We have had brief discussions, yes.

MS. BROWN: And what do those discussions entail?

MR. DAVIS: That is a follow-up to what was in here. In general, those discussions have been regarding what USEPA thinks the impact is on Illinois. The ruling has a number of categories. We have asked what category they believe we may have fallen into, although we're not -- Illinois was not party to the suit, and so we're in discussions with USEPA as to how the decision impacts us now and possibly in the future, if at

all.

MS. BROWN: And so just to follow up, at this time have -- so those discussions are ongoing, or have they come to a conclusion as to how proceedings might be impacted?

MR. DAVIS: They are ongoing.

MS. BROWN: And just another follow-up. Have -- are those discussions still ongoing as to which category Illinois' provisions might fall in, or is that still ongoing?

MR. DAVIS: Yeah. They are general discussions. I don't know that exactly which category we might fall into is relevant at this time because we weren't a party to the suit. We -- and I don't know how much I should speak to legal conclusions.

She says I shouldn't.

But, yeah, general discussions as to, you know, how the decision may impact how they view things in the future about what we may be doing in the SSM realm, I guess.

MS. BROWN: 3, Is the Agency aware of what USEPA may do as a result of the March 1st, 2024, decision? For example, petition for rehearing,

appeal the decision, or reissue the SSM SIP, S-I-P, call.

MR. DAVIS: No, we are not.

MS. BROWN: 4, Do you agree that the 2015 SSM SIP call and the 2022 finding of failure were the basis of the Agency's proposal and the Board's decision to adopt the Agency's proposal in PCB R23-18?

MR. DAVIS: Yes.

MS. BROWN: Number 5, Did the Agency submit the amendments adopted in PCB R23-18 to USEPA for approval as a SIP revision? And if so, what is the status of that submittal and USEPA's approval of the submittal?

MR. DAVIS: Yes, we did submit them. Region 5 is working toward a proposed approval of the SIP submittal.

MS. BROWN: Number 6, Will the D.C. Circuit Court's March 1st, 2024, opinion impact USEPA's approval of the Illinois SIP revision?

MR. DAVIS: The Agency is not in a position to opine on what, if any, impact the decision may have on USEPA's approval of Illinois' R23-18 SIP submittal, but we would note that to the Agency's

knowledge, Illinois' SIP call is still in effect.

MS. BROWN: And as a follow-up to that, is any potential impact to USEPA's approval of Illinois' SIP revision part of the discussions between Illinois EPA and USEPA?

MR. DAVIS: We did discuss that generally. I don't think we have specific knowledge. I would expect that it would not have much impact as we submitted a -- submitted revisions that had adequately addressed the original SIP call.

MS. BROWN: Number 7, Has the Agency considered potentially withdrawing the SIP submittal concerning the amendments adopted in PCB R23-18 as a result of the D.C. Circuit Court's March 1st, 20 -- that should be 2024 decision?

If yes, has the Agency considered potentially submitting a proposal to the Board to reinstate the startup, malfunction, and breakdown provisions that were removed and revised in PCB R23-18?

MR. DAVIS: The Agency does not intend to withdraw its SIP submittal or to propose regulations to the Board seeking repromulgation of the previous SSM provisions. To the Agency's

knowledge, Illinois' SIP call is still in effect.

Regardless, though, the Board repealed SSM provisions in 23-18 in compliance with all applicable regulatory requirements. The rules are final and effective and will remain so unless and until amendments are adopted in a future rulemaking proceeding. SIP approval of the rules will ensure consistency at the state and federal levels.

MS. BROWN: Number 8, Has the Agency considered whether the D.C. Circuit Court's decision will have any impact on the seven criteria for AELs outlined by USEPA in the 2015 SIP call, and 2013 proposed rule, which references a 1999 USEPA guidance document?

MR. DAVIS: The Agency is not in a position to opine on what, if any, impact the decision may have on USEPA's AEL criteria. As noted in the question, however, the bulk of the AEL criteria USEPA set forth as part of its SSM policy, including the criteria regarding narrowly defined source categories and worst-case emissions analysis, has been in existence for decades. The SSM policy was simply updated in USEPA's 2015 SIP

call action.

The SSM policy is considered nonbinding guidance. It's possible that the USEPA will amend its SSM policy in response to the D.C. Court's decision or will implement its SSM policy in such a way that takes into consideration relevant aspects of the decision, but the Agency's current understanding is that USEPA will be utilizing the same or similar criteria previously identified in assessing alternative emission limits.

MS. BROWN: Thank you very much.

HEARING OFFICER: Next we'll have API and Citgo.

DIRECT EXAMINATION

BY MR. MESSINA:

MR. MESSINA: Good morning. My name is Alec Messina, A-L-E-C M-E-S-S-I-N-A, on behalf of both API and Citgo. And I will thank my law partner, Melissa Brown, for covering most of the D.C. Circuit questions. So I'll just focus on the first three questions that were included in the pre-filed questions.

Mr. Davis, on page 15 of your

pre-filed testimony, it indicated that based on the additional technical support and justification that had been provided, the Agency does not object to the adoption of the rule proposal as set forth in API's March 15, 2024, filing with the Board.

As our March 15, 2024, proposal, or filing, included the most up-to-date proposed alternate emission limitation language in 216.361(d), as in David, but did not set forth API's proposed revisions to Sections 216.103 and 216.104.

Does the Agency also not object to API's proposal in relation to those sections?

MR. DAVIS: That's correct.

MR. MESSINA: Thank you. The second question, API requests that the Agency elaborate on its statement that it does not object to the adoption of the rule proposal. So I will refer to (a), (b), and (c) included in the pre-filed questions.

Does this statement imply that the Agency believes that USEPA's criteria for AEL are met as to the proposal?

MR. DAVIS: The Agency does not object if

the Board decides to adopt the proposed language, the current proposal, along with the additional support provided as the Agency has not identified problematic emissions impacts from the proposal and is not aware of any potential issues with USEPA approval.

So to part (a), yes, based on our current understanding of those criteria, yes, that statement does imply.

MR. MESSINA: Thank you very much.

Does this statement imply that the Agency's statement on page 12 of its October 23rd, 2023, comment that the proposal by API has significant issues, would you now say that that concern has been resolved based upon those responses and further review by the Agency?

MR. DAVIS: Yes.

MR. MESSINA: Is the Agency's statement based in part on any conversations that they have had with USEPA?

MR. DAVIS: Yes. The Agency has not had detailed discussions with USEPA regarding the individual proposals. However, the Agency did request any comments USEPA Region 5 staff could

provide on the most recent proposals and support that have been shared with the Agency and submitted to the Board.

To date there has been no response, but Region 5 staff are aware that the Agency believes that certain proposals and support satisfy USEPA's AEL criteria.

MR. MESSINA: Thank you very much.

And then finally my last question. If the Board chooses to adopt ATI's and Citgo's proposal, does the Agency intend to submit API's AEL language to USEPA for approval as a State implementation plan revision?

MR. DAVIS: Yes. However, Region 5 has not yet identified whether the proposed AEL is likely approvable. If the Agency learns that the AEL is likely not approvable, the Agency may reassess submitting it to the USEPA as a SIP revision.

MR. MESSINA: Okay. Thank you.

HEARING OFFICER: Thank you. All right. Before we go to the Board's question, I just want to check if there are any other questions from any other participants for this witness.

Okay. Seeing none, we'll go to the

Board's question.

MR. RAO: I think the Board's question has been answered in response to Ms. Brown's series of questions. So I don't think there's any need to repeat it.

HEARING OFFICER: All right. Then we'll just move on. Thank you guys so much.

So the next witness is Stephen Norfleet with Dynegy and Midwest Generation. If you could please come up to the front first row.

Would the court reporter please swear in the witness.

COURT REPORTER: Would you raise your right hand, please.

(Witness sworn.)

HEARING OFFICER: Okay. As mentioned earlier, the witness's testimony is entered into the record as if read and is entered as Hearing Exhibit B.

(Hearing Exhibit B identified.)

HEARING OFFICER: All right. We'll proceed with questions first from the Attorney General's Office.

STEPHEN NORFLEET,

called as a witness herein, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MS. KORDAS:

MS. KORDAS: Good morning. I'm Molly Kordas, M-O-L-L-Y K-O-R-D-A-S, with the Illinois Attorney General's Office.

We have just one question, and this is a follow-up from a previous hearing and comments.

The joint proposal in part relies upon compliance with work practices as a condition to using an alternative averaging period. Specifically can you explain what is meant by, quote, good engineering practices, end quote?

MR. SAWULA: This is Andrew Sawula, S-A-W-U-L-A, from Arentfox Schiff, A-R-E-N-T-F-O-X, second word is S-C-H-I-F-F, on behalf of Dynegy and Midwest Generation.

That question was asked in identical wording at the first hearing and answered at that time. And it's also a question, a topic that our expert -- that our technical consultant

did not opine on or was answered by both of the companies at that time.

MS. KORDAS: Okay. Just one follow-up on that. JCAR did specifically request in their email filed on September 7th, 2023, specifically requested of the Board, please incorporate by reference the standard to be enforced.

Can you elaborate on that at all?

MR. SAWULA. Yes. As I indicated at this first hearing, we would address that comment and respond in our post-hearing comments.

MS. KORDAS: Thank you. That's all of our questions.

HEARING OFFICER: Thank you. Are there any other questions from any other participants? No.

Then we'll go to the Board's questions. Or unless you still want to skip it.

Okay. Then we're all set for that. Thank you.

Okay. Next we have Bryan Higgins with Rain Carbon.

Good morning. Will the court reporter please swear in the witness.

COURT REPORTER: Would you raise your right

hand, please.

(Witness sworn.)

HEARING OFFICER: As mentioned earlier, the witness's testimony is entered the into the record as if read and is entered as Hearing Exhibit C.

(Hearing Exhibit C identified.)

HEARING OFFICER: We will again proceed with questions first from the Attorney General's Office.

BRYAN HIGGINS,

called as a witness herein, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BERTSCHE:

MR. BERTSCHE: Good morning. My name is Justin Bertsche, B-E-R-T-S-C-H-E, with the Illinois Attorney General's Office. Thank you for being here.

I'll begin by reading Question 1. IEPA's comments filed on October 23rd, 2023, note that, quote, Rain Carbon did not sufficiently demonstrate why a three-hour averaging period would be necessary to comply with the opacity standard, unquote.

In response, Rain Carbon noted the

difference between typical startup conditions and the conditions during the July 2023 engineering study. Rain Carbon did not otherwise demonstrate why a three-hour averaging period would be necessary to comply with the opacity standard.

Does Rain Carbon believe further demonstrations needed to justify its proposed AEL for opacity? If not, please explain.

MR. HIGGINS: Further demonstration is not needed to support the proposed standard. The July 2023 engineering study was conducted during a representative startup, but that does not mean that future startups will be identical to the July 2023 engineering study.

As we have previously explained, startups can begin at temperatures lower than what occurred during the engineering study. Opacity levels are higher at these lower temperatures, between 400 and 600 degrees Fahrenheit, and, as demonstrated in the supplemental technical support document, could require multiple hours before compliance with the opacity standard occurs. Therefore, the proposed three-hour averaging period is necessary to accommodate reasonably likely

future startup scenarios.

MR. BERTSCHE: Question 2, and relating to this first question: Given that Rain Carbon's July 2023 engineering study differed from typical operating conditions, (a) can Rain Carbon discuss why the July 2023 engineering study was conducted under what I call atypical conditions?

MR. HIGGINS: It is incorrect to characterize the July 2023 engineering test as atypical. The engineering study was conducted under a representative startup, as previously noted, and further testing is not necessary to support any of the proposed alternative emission limits.

As detailed in a supplemental technical support document, the data collected during the engineering test was sufficient to develop a strong correlation between temperature and volatile organic matter emissions. That allowed extrapolation of that data to determine representative emission rates at 400 degrees Fahrenheit.

Similarly, the collected data was sufficient to develop a strong correlation between

temperature and particulate matter that allowed interpolation between known emission rates at known temperatures to determine representative emission rates between 1370 and 1800 degrees Fahrenheit.

These correlations allowed Rain Carbon to utilize emissions data from one representative startup to determine emissions that would occur during all reasonably likely startup events. This ensured that the NAAQS noninterference demonstration supporting Rain Carbon's proposed alternative emission limits was representative of all foreseeable startup events.

MR. BERTSCHE: Part (b), Does Rain Carbon believe the differences between the July 2023 engineering study and typical operating conditions justify a new engineering study conducted under typical operating conditions? If not, please explain.

MR. HIGGINS: No, and I believe I've already explained.

MR. BERTSCHE: Question 3, In calculating its AEL for PM, Rain Carbon includes the variable, quote, malfunction --

COURT REPORTER: I'm sorry. Can you speak

up?

MR. BERTSCHE: Yes. Rain Carbon includes the variable malfunction remainder hours, which Rain Carbon defines as, quote, the difference between 24 hours and the actual duration of each malfunction/breakdown event, unquote.

Previously Rain Carbon noted that, quote, kiln malfunctions and breakdowns occur periodically at the facility generally taking the pyroscrubber between 1800 degrees Fahrenheit for shorter periods of time; e.g., four to five hours.

Please explain why malfunction remainder hours should be defined as the difference between 24 hours and the actual duration of each malfunction or breakdown event rather than the difference between four to five hours and the actual duration of each malfunction or breakdown event.

MR. HIGGINS: The approach used by Rain Carbon is correct to ensure that the proposed limit accommodates potential future malfunction and breakdown events. It is possible that malfunction or breakdown events last up to 24 hours.

By permit, Rain Carbon can operate

up to 24 hours while the pyroscrubber inlet temperature is below 1800 degrees Fahrenheit on a three-hour rolling average. Thus, to account for potential future operating scenarios and the proposed alternative emission limit, it was appropriate to extrapolate historic malfunction breakdown hours up to the potential 24-hour length of those events.

MR. BERTSCHE: One follow-up to that response. In Rain Carbon's April 8th, 2024, filing, which is titled Rain Carbon's second supplemental response to Illinois EPA's comments, there's a table on page -- I forgot the number. I guess it would be of the PDF page 1, 2, 3, 4 -- 5 of the PDF.

The table includes five malfunction and breakdown events, historical malfunction and breakdown events at the facility, none of which are 24 hours. They last I think -- the longest duration was 8.75 hours.

Does Rain Carbon believe that a 24-hour breakdown event is possible, or is Rain Carbon aware of any 24-hour breakdown or malfunction event?

MR. HIGGINS: Yeah, that's possible.

MR. BERTSCHE: Okay. Thank you. That's all my questions.

HEARING OFFICER: Thank you. All right. Are there any other questions from any other participants?

Okay. And we're going to skip the Board's question again. So thank you guys so much.

And before calling up EDNF, I just wanted to check since they did file written responses if there are any follow-up questions anyone has.

No? All right. Then we will skip that and go to public comments.

Is there anyone here who would like to provide a public comment? If so, please raise your hand or say something.

Okay. I'm not seeing any. Okay.

All right. Then I would like to go off the record for just a minute just to address a few procedural issues before we adjourn.

(Discussion off the record.)

HEARING OFFICER: All right. We're back on the record after a brief discussion of procedural

matters.

Copies of the transcript are expected to be available at the Board by Monday, April 22nd. Once it's filed with the Board, the transcript will be posted promptly to the Board's website under this docket number R23-18(A).

Before it takes action on the proposals, the Board will hold open a post-hearing comment period. Post-hearing comments will be due 30 days after the Board receives this transcript.

When the Board receives the transcript, we will issue a hearing officer order confirming this deadline for post-hearing comments.

Filings with the Board, whether paper or electronic, must also be served on the hearing officer and those persons on the service list. Before filing please check on COOL or with the Board's Clerk to ensure that you have the most recent version of the service list.

Are there any other matters that need to be addressed at this time?

Okay. Seeing none, thank you everyone for participating. The third hearing is adjourned.

STATE OF ILLINOIS)
) SS.
COUNTY OF DU PAGE)

I, Janet L. Brown, CSR. No. 84-002176, do hereby certify that I reported in shorthand the proceedings in the above-entitled cause and that the foregoing Report of Proceedings, Pages 1 through 35, inclusive, is a true, correct, and complete transcript of my shorthand notes taken at the time and place aforesaid.

I further certify that I am not counsel for nor in any way related to any of the parties to this suit, nor am I in any way, directly or indirectly interested in the outcome thereof.

This certification applies only to those transcripts, original and copies, produced under my direction and control; and I assume no responsibility for the accuracy of any copies which are not so produced.

IN WITNESS WHEREOF I have hereunto set my hand this 19th day of April, 2024.

Janet L. Brown

Certified Shorthand Reporter

Exhibit 3

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
	)	R 23-18(A)
AMENDMENTS TO 35 ILL. ADM. CODE	)	(Rulemaking – Air)
PARTS 201, 202, AND 212	)	

NOTICE OF FILING

TO: Mr. Don A. Brown,
Clerk of the Board
Illinois Pollution Control Board
100 West Randolph Street,
Suite 11-500
Chicago, Illinois 60601

Timothy Fox
Chloe Salk
Hearing Officers
Illinois Pollution Control Board
60 East Van Buren Street, Suite 630
Chicago, Illinois 60605

(SEE PERSONS ON ATTACHED SERVICE LIST)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board, the **PRE-FILED TESTIMONY OF JOHN DEREK REESE IN SUPPORT OF API'S RULEMAKING PROPOSAL,** on behalf of the American Petroleum Institute, copies of which, are hereby served upon you.

Respectfully submitted,

AMERICAN PETROLEUM INSTITUTE,

By: **/s/** Alec Messina
One of its Attorneys

Dated: August 28, 2023

Alec Messina
HEPLERBROOM, LLC
4340 Acer Grove Drive
Springfield, Illinois 62711
Alec.Messina@helperbroom.com
(217) 528-3674

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	**)**	
	)	
AMENDMENTS TO 35 ILL. ADM. CODE	**)**	**R 23-18(A)**
PARTS 201, 202, AND 212	**)**	**(Rulemaking – Air)**

PRE-FILED TESTIMONY OF JOHN DEREK REESE
IN SUPPORT OF API'S RULEMAKING PROPOSAL

NOW COMES Petitioner, the AMERICAN PETROLEUM INSTITUTE ("API"), by and through its undersigned attorney, and pursuant to 35 Ill. Adm. Code § 102.424 and the Illinois Pollution Control Board's ("Board") August 17, 2023 Notice of Hearing, submits the following Pre-Filed Testimony of John Derek Reese in Support of API's Rulemaking Proposal for presentation at the September 27, 2023 hearing scheduled in the above-referenced matter.

TESTIMONY OF JOHN DEREK REESE

I. INTRODUCTION

My name is John Derek Reese, and I am the Downstream Policy Advisor within Policy, Economics, and Regulatory Affairs at API. I have more than thirty years of industry experience working in refining and petrochemical manufacturing operations as well as safety, health, and environmental compliance. My current responsibilities include advocating on environmental and process safety issues that may impact the procedures and/or operations of the refineries in the United States. My *curriculum vitae* is attached hereto.

API is the only national trade association representing all facets of the oil and natural gas industry, which supports more than 11 million U.S. jobs and nearly 8 percent of the U.S. economy. API's approximately 600 members include large integrated companies, as well as exploration and production, refining, marketing, pipeline, and marine businesses, and service and supply firms. API members operate facilities subject to each of the proposed changes to SMB

regulatory language addressed in this proposal, including refineries subject to 40 CFR Part 63 Subpart UUU, and will be directly impacted by the proposed amendments.

I will be providing testimony in support of API's proposal to amend 35 Ill. Adm. Code Part 216. The focus of my testimony will be providing technical support and justification for API's proposed amendments to 35 Ill. Adm. Code 216.103, 216.104, and 216.361. The Illinois Environmental Protection Agency's ("Illinois EPA") proposal in PCB R 23-18, adopted by the Board on July 20, 2023 and effective July 25, 2023, will adversely affect entities that have relied on prior startup, malfunction, and breakdown ("SMB") provisions for compliance during SMB events. Particularly, the amendments will leave refineries with fluid catalytic cracking units ("FCCUs") with potential noncompliance with the carbon monoxide ("CO") standard in 35 Ill. Adm. Code 216.361 during startup and hot standby events. An alternative emission limitation ("AEL") to the Section 216.361 standard is needed for startup and hot standby periods.

API's proposed AEL incorporates by reference pertinent provisions of the National Emission Standards for Hazardous Air Pollutants ("NESHAP") for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units at 40 CFR Subpart UUU. The United States Environmental Protection Agency ("USEPA") recognized the unique and important operating conditions that FCCUs must follow during startup and hot standby periods to ensure safe operations as well as emissions minimization. The work practices and standards for these periods have been successfully utilized by refineries in the U.S. since 2019. The Board's removal of the SMB provisions in PCB R 23-18 will prohibit the use of these effective and useful standards for SMB periods for FCCUs and could cause direct economic harm to Illinois refineries by potentially resulting in periods of unnecessary curtailment of

gasoline, diesel, aviation fuel, and other key feedstocks production in the Illinois and greater Midwest markets.

There are four refineries located in Illinois which would be potentially impacted by API's proposal. These include: (1) ExxonMobil Oil Corp. Joliet Refinery located at 25915 S. Frontage Road, Channahon, Illinois (Will County); (2) WRB Refining LP Wood River Refinery located at 900 South Central Avenue, Roxana, Illinois (Madison County); (3) CITGO Petroleum Corp. Lemont Refinery located at 135th Street and New Avenue, Lemont, Illinois (Will County); and (4) Marathon Petroleum Company, LP Robinson Refinery located at 100 Marathon Avenue, Robinson, Illinois (Crawford County).

II. PURPOSE OF PROPOSAL

After the amendments adopted by the Board in PCB R 23-18, the Board's regulations no longer provide Illinois EPA the authority to issue permits with conditions that authorize emissions in excess of standards during startup and/or authorize continued operation of an emission source during malfunction or breakdown in violation of limits or standards. Prior to the recent amendments, Illinois EPA had used the provisions in Part 201 as a basis to include broad SMB conditions in air construction and operating permits. Prior to the amendments, refineries with FCCUs with exceedances during SMB events could apply for and obtain such SMB conditions in their permits. While the permit condition language could vary, the condition would authorize a violation, or exceedance, of the generally applicable emission limit, such as the standards in Section 216.361, during periods of SMB. Facilities can no longer apply for such relief in their permits and the SMB conditions in existing permits will eventually be removed. Sources will subsequently comply with generally applicable emission limitations, including Section 216.361, at all times including periods of SMB. However, removal of the SMB relief

provisions does not change the fact that the refineries with FCCUs will not be able to meet the standards in Section 216.361 during periods of startup and hot standby.

As explained in API's Statement of Reasons and Technical Support Document, it is technically infeasible for many FCCUs to achieve the conditions necessary to meet the CO standard in Section 216.361 during periods of startup and hot standby. During startup of an FCCU, the reactor and regenerator train temperature must be raised 1000 – 1200°F which is the temperature range of the heat of reaction occurs for catalytic cracking. Prior to introducing feed into an FCCU, hot air is used initially to heat up the regenerator. The hot air is typically supplied from a natural gas-fired air-preheater that is only used for startup. If refractory repairs were made, a refractory dry-out is required and the regenerator temperature must be raised slowly (e.g., at a rate of 50 – 100°F/hr) to prevent water from damaging the refractory. Emissions from the regenerator vent during this time are from the air heater.

These auxiliary burners and regenerator internals are not designed to heat the regenerator to temperatures required to start the FCCU cracking reactions (>1000°F). Torch oil is needed to heat the regenerator beyond the capacity of the auxiliary burner and the metallurgical constraints of the regenerator system. Thus, during a typical startup, and during some shutdowns and standby operations of an FCCU, there is a period when torch oil is added to the regenerator to facilitate the unit heat-up to operating temperature. Upon the addition of feed to the unit, catalytic coke will start to burn in the regenerator along with the torch oil. Feed ramp up is fairly quick, during which time the torch oil is backed out during normal startups but can be longer if refractory repairs were made because of the need to raise temperatures slowly so as not to damage the new refractory. The period of torch oil addition (i.e., the period when the bed temperature is relatively low) results in increased CO during the start-up period.

For full burn FCCUs, there is a relatively short period of time during startup when the unit operates in partial burn mode resulting in an additional period of higher CO. This partial burn period can result from heat imbalances during this transition state or may be required for safety because operation at regenerator temperatures high enough for complete combustion while establishing catalyst circulation or introducing feed can result in exceeding metallurgical temperature limits. The unit is inherently unstable as feed is being put into the unit. It is a balancing act that requires operators to manually balance heat consumed to vaporize the feed and sustain the cracking reaction as additional feed is being put on the unit with the heat being brought into the reactor from the regenerator via catalyst circulation, which is a function of regenerator operating conditions. This is an extremely complex operation with numerous variables that operations must manage until the unit can be lined out.

For a partial burn unit, the required CO boilers add an additional step to unit start-up. Additional time is required from the point that the regenerator enters partial burn until the time the flue gas is all routed through the CO boiler(s). The CO boiler(s) must be brought up separately from the regenerator to protect them from swings of the regenerator flue gas quality during the startup process, which can result in temperature excursions, damage to CO boiler internals and/or trip of the CO boiler(s). Further, industry safety practices recognize the potential hazard for hydrocarbon vapor to flow back to a CO boiler during startup and recommend CO boiler startup after the FCCU reactor is fully operational with catalytic reactions occurring and at full operating temperature. A CO boiler trip must be avoided because it could ultimately lead to a refinery shutdown due to a drastic decrease in steam production (a very large proportion of the refinery’s steam supply is typically provided by the CO boilers), resulting in excess emissions at other units, significant flaring, production loss, and potentially equipment damage. Since the

regenerator flue gas initially bypasses the CO boiler, the CO is not further combusted. Once the regenerator is stable, the flue gas is added to the CO boilers and CO emissions drop to normal levels. Prior to lining up the regenerator flue gas to the CO boiler, the unit is operating in a mode with higher CO emissions for a short period of time.

USEPA, recognizing the unique transient operating condition for FCCUs, agreed with industry that these startup scenarios and sequence of events were accurate and appropriately designed. Further, USEPA stated that this sequence of events, specifically the use of torch oil, meant that CO concentrations would exceed the 500-ppm limit. However, USEPA recognized that the low level of CO in exhaust gas could be consistently achieved if the oxygen concentrations in the exhaust gas exceeded 1-percent by volume. This level of oxygen ensures there would be an excess level of oxygen concentration to maximize combustion and minimize CO and HAP emissions.

In addition to the issues with meeting steady-state emissions limits during startup periods, if no AEL is adopted, an FCCU may be unable to operate in hot standby in response to a weather event, temporary power interruption, unplanned mechanical outages, or other refinery unit disruptions. “Hot standby” refers to the use of torch oil to maintain the reactor and regenerator temperature as well as catalyst recirculation. This operating condition is utilized for limited durations during unplanned events that require removal of feed from an FCCU. Torch oil injection is also used to heat up the reactor and regenerator during startup sequence.

An AEL is also needed to ensure safe operation of FCCUs. When removing the SMB provisions, the Board did not take into account known process safety hazards, setting emission limitations that are in direct opposition to “Recognized and generally accepted good engineering practices” (“RAGAGEP”) for these sources. While the Occupational Safety and Health

Administration ("OSHA") originally coined the terminology, RAGAGEP involves the application of engineering, operating or maintenance activities derived from engineering knowledge and industry experience based upon the evaluation and analyses of appropriate internal and external standards, applicable codes, technical reports, guidance, or recommended practices or documents of a similar nature. EPA's Risk Management Program, 40 CFR Part 68, and OSHA's Process Safety Management, 29 CFR Part 1910, specifically direct refineries to adhere to RAGAGEP to ensure the safe operation of their facilities.

Without adoption of an AEL, the Board has placed refineries with FCCUs in a position where they must make an untenable operating decision. They must attempt to startup or go into hot standby with a known process safety hazard with potentially serious consequences in direct conflict with RAGAGEP or remain shut down until they obtain alternative operating conditions and emission limitations approved by Illinois EPA on a case-by-case basis. This scenario is completely avoidable as industry and USEPA have already aligned on the proper and safe operating conditions and alternative emission limitations for FCCU startup and hot standby. These procedures and operating conditions addressed in NESHAP Subpart UUU have been safely used by all refineries in the United States since 2016.

Additional discussions about the technical infeasibility of FCCUs to meet the limitations in Section 216.361 during periods of startup and hot standby are contained in API's Statement of Reasons and Technical Support Document.

III. API'S PROPOSAL

API is proposing to amend Section 216.361 of the Board's rules governing CO emissions from petroleum and petrochemical processes. Section 216.361(a) prohibits causing or allowing the emission of a CO waste gas stream into the atmosphere unless such waste gas stream is

burned in a direct flame afterburner or CO boiler so that the resulting concentration of CO in such waste gas stream is less than or equal to 200 ppm corrected to 50% excess air. 35 Ill. Adm. Code 216.361(a). For existing petroleum or petrochemical processes using catalyst regenerators of fluidized catalytic converters equipped for in situ combustion of CO, Section 216.361(b) allows emission of a CO waste gas stream if the CO concentration is less than or equal to 750 ppm corrected to 50 percent excess air. 35 Ill. Adm. Code 216.361(b). The CO standards in Section 216.361 for petroleum and petrochemical processes are unachievable for refineries in Illinois during periods of startup and hot standby.

API's proposed AEL incorporates by reference NESHAP Subpart UUU provisions that contain work practice standards applicable during periods of startup and hot standby. Specifically, API proposes to incorporate by reference the following provisions from NESHAP Subpart UUU: 40 CFR 63.1565(a)(5); 40 CFR 63, Subpart UUU, Table 9; 40 CFR 63.1570(c); 40 CFR 63.1570(f); 40 CFR 63.1572(c); NESHAP Subpart UUU, Table 10; NESHAP Subpart UUU, Table 14; NESHAP Subpart UUU Table 41; 40 CFR 63.1576(a)(2); and 40 CFR 63.1576(d). An explanation of each of the provisions API proposes to incorporate by reference is contained in API's Statement of Reasons. Facilities with FCCUs would have the option to comply with either the existing CO standards in Section 216.361 or with the AEL during periods of startup and hot standby. API also proposes to amend Sections 216.103 and 216.104 to address NESHAP Subpart UUU in the list of incorporation by reference and to add pertinent definitions from the NESHAP.

As background, Illinois is unique in its approach by prescribing a specific CO emission limitation of 200 ppm when compared to other states. Most states simply require use of combustion of CO for catalytic cracker during normal operations without the addition of a

numeric concentration limit. South Coast Air Quality District ("SCAQD") in California has a 500 ppm limitation but allows a specific startup duration (hours allowed) and limits the annual number of startups from FCCUs. Similar to SCAQD, Bay Area Air Quality Management District in California has a 350 ppm standard with a startup exemption. Generally, states have consistently incorporated by reference both Part 60 New Source Performance Standard ("NSPS") and Part 63 NESHAP standards. In some cases, they have state standards that are exempted when a unit is subject to a federal NSPS and/or NESHAP (e.g., Indiana). Illinois' limitation of 200 ppm is a unique problem with respect to FCCU startup and shutdown events when compared to other states. The federal standard is 500 ppm on a one-hour average basis. 40 CFR Part 63.1565 and 40 CFR 60.103. This standard was included as part of the most recent Risk and Technology Review (often referred to as "RTR") completed in 2016 for both the Part 60 and 63 standards for petroleum refineries. The CO limitation serves as the surrogate parameter ensuring complete combustion conditions are being maintained which ensures optimum hazardous air pollutant ("HAP") destruction efficiency/reduction from FCCUs.

Moreover, API's proposal also meets the seven AEL criteria outlined by USEPA, as explained in detail in API's Statement of Reasons. API's proposed AEL is limited to specific, narrowly defined source categories using specific control strategies. The proposed amendments are limited to FCCUs and there are only four petroleum refineries in Illinois. All of the FCCUs at the refineries in Illinois are controlled by CO boilers or CO furnaces during steady-state operation.

As demonstrated in the Statement of Reasons and Technical Support Document, the use of the control strategy (i.e., CO boilers or furnaces) is technically infeasible during startup and hot standby periods. As to a worst-case emissions analysis, API's proposed AEL should not

impact attainment of the CO National Ambient Air Quality Standards ("NAAQS"). Pertinent data from Illinois EPA's most recent Annual Air Quality Report is discussed in the Statement of Reasons to support this criterion. Additionally, after API's rulemaking proposal was filed, Marathon Petroleum Company LP ("Marathon") filed a petition for an adjusted standard that included additional data demonstrating that the proposed AEL, i.e., compliance with NESHAP Subpart UUU, should not impact attainment of the CO NAAQS. Specifically, Marathon collected ambient monitoring data for two temporary monitors that operated for over a three-year timeframe (2017 – 2019) that showed that CO emissions from Marathon's refinery, which was complying with NESHAP Subpart UUU during that timeframe, were well below and did not result in an exceedance of the CO NAAQS. Technical Support Document at TSD-6-7, 14-15, Marathon's Petition for Adjusted Standard, AS 24-3 (Aug. 14, 2023) (during the monitoring period, there were five startups of Marathon's FCCU).

Furthermore, API's proposed AEL requires that the frequency and duration of operation in startup or hot standby mode are minimized to the greatest extent practicable and that all possible steps are taken to minimize the impact of emissions during startup and hot standby on ambient air quality. API's proposed AEL also requires that records of actions taken during startup events be maintained and that the facility be operated in a manner consistent with good practice for minimizing emissions.

IV. CONCLUSION

The Board's removal of the SMB relief provisions in Parts 201, 202, and 212 will leave Illinois refineries with the potential for noncompliance during periods of SMB. In particular, refineries with FCCUs cannot technologically and safely meet the CO standards in Section 216.361 during periods of startup and hot standby. API's proposed amendments to Part 216

provide an option to comply with an AEL during those periods. The proposed alternative incorporates provisions from the federal regulations for FCCUs. In adopting such provisions, USEPA recognized the unique and important operating conditions that FCCUs must follow during startup and hot standby to ensure safe operations and minimize emissions. USEPA also established the alternate FCCU NESHAP provisions to best satisfy their own criteria for AELs.

Thank you for the opportunity to testify. I am prepared to answer any questions from hearing participants regarding my testimony above as well as API's Statement of Reasons and Technical Support Document.

Respectfully submitted,

AMERICAN PETROLEUM INSTITUTE,

Dated: August 28, 2023

By: /s/ *Alec Messina*
One of Its Attorneys

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JOHN DEREK REESE

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Summary

Utilize 30-years of experience to provide effective and efficient compliance strategies and solutions for refining and chemical operations.

Skills

- Refinery and Chemical Operations
- RMP and PSM Audit Coordination
- Ambient Air Monitoring/Fenceline & Community
- Leak Detection and Repair (LDAR) Program Execution
- Optical Gas Imaging Camera Technology
- Regulatory Analysis and Advocacy
- Data Analysis
- Source Testing and Laboratory Analysis
- Compliance Reporting
- Compliance Software Management

Experience

American Petroleum Institute
Washington, DC
Policy Advisor
11/2022 - present

- Advocacy and member support for environmental and process safety issues for API member companies with focus in downstream and refinery operations.
- Staff Lead for Air Toxics, Stationary Source Emission Estimating, Air Modeling, and Mechanical Integrity workgroups.

Exxon Mobil | Spring, Texas
Principal for Regulatory Compliance
09/2013 - 06/2022

- Excelled at recognizing new regulatory and technology developments which will have impact on manufacturing or offer unique cost savings or improved compliance effectiveness. Key examples include use of active & passive air monitoring systems, optical gas imaging camera implementation, and implementation of new flare control systems.
- Established positive working relationships with state and federal regulatory agencies. Air Toxic Group Chair for API and Member Environmental Operating Committee for AFPM
- Developed and implemented strategies necessary for minimizing risk of non-compliance for EPA Risk Management Plan (RMP) and Accident Prevention and OSHA Process Safety Management (PSM) program requirements.
- Coordinated and led all PSM/RMP compliance audits for US facilities.
- ExxonMobil's subject matter expert for LDAR and ambient air monitoring technology and program execution.

ExxonMobil | Baton Rouge, LA
Environmental Senior Section Supervisor
01/2006 - 09/2013

- Responsible for execution of air quality compliance activities, reporting, and recordkeeping for the Baton Rouge Chemical Plant, Baton Rouge Refinery, Baton Rouge Resins Finishing Plant, Anchorage Terminal, and Chalmette Refinery.
- Supervised 24 employees and 30 contractors for Baton Rouge Chemical Plant.

- Coordinated environmental incident response activities and served as agency/government liaison for sites.

ExxonMobil| Baton Rouge, LA
Process Operations Senior Section Supervisor
01/2003 - 01/2006

- Managed the process manufacturing units for Aromatics, Partial Oxidation, Phthalic Anhydride, and Light Ends at the Baton Rouge Refinery.
- Established production standards and productivity goals for section, prioritizing tasks to reach deadlines.
- Planned and successfully executed 3 separate unit shutdowns for maintenance and new equipment integration.

ExxonMobil | Baton Rouge, LA
Process Operations Section Supervisor
01/2000 - 01/2003

- Managed the process manufacturing units for Isopropanol, Methyl Ethyl Ketone, and Neo Acids at the Baton Rouge Chemical Plant. Isopropanol unit is the world's largest of its kind.
- Managed employees for maximum productivity, efficiency, and job safety.
- Planned and successfully executed 4 separate unit shutdowns for maintenance and new equipment integration.

ExxonMobil| Baton Rouge, LA
Technical Section Supervisor
01/1998 - 01/2000

- Managed 5 engineers and 2 technicians to provide daily operational support to plant wastewater treatment, flares, and utilities facilities for the Baton Rouge Chemical Plant.
- Coordinated all quality control programs, risk assessments, project design and execution, and compliance monitoring activities.

ExxonMobil| Baton Rouge, LA
Environmental Planning Section Supervisor
01/1995 - 01/1998

- Responsible for execution of all environmental regulatory compliance activities, reporting, and recordkeeping across all air, waste, and water programs.
- Supervised 19 employees and 30 contractors for Baton Rouge Chemical Plant.

ExxonMobil| Baton Rouge, LA
Long Range Air Planner
12/1992 - 01/1995

- Led and coordinated all air quality compliance programs including permitting, regulatory advocacy, compliance program execution (e.g., leak detection, source testing, emissions reporting).

United States Navy, USN | Norfolk, VA
United States Naval Officer
06/1985 - 12/1992

- Served on USS Donald B Beary (FF0-1085) with deployments to Mediterranean and Middle East.
- Served in rotations as Engineering Officer, Damage Control Officer, and Combat Systems Officer.
- Specialized in anti-submarine warfare including passive and active acoustic surveillance systems.

Education and Training

Fairleigh Dickinson University | Teaneck, NJ
MBA in Petrochemical Industry
01/1993

Millsaps College | Jackson, MS
Bachelor of Science in Chemistry with Honors
05/1985

CERTIFICATE OF SERVICE

I, the undersigned, on oath state the following: That I have served the attached **PRE-FILED TESTIMONY OF JOHN DEREK REESE IN SUPPORT OF API'S RULEMAKING PROPOSAL,** via electronic mail upon:

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That my email address is Alec.Messina@heplerbroom.com

That the number of pages in the email transmission is 16.

That the email transmission took place before 5:00 p.m. on August 28, 2023.

Date: August 28, 2023

/s/ Alec Messina
Alec Messina

Exhibit 4

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
AMENDMENTS TO 35 ILL.	)	R23-18(1)
ADMIN. CODE PARTS 201, 202	)	(Rulemaking-Air)
AND 212.	)	
	)	First Hearing
	)	

REPORT OF PROCEEDINGS OF THE HEARING in the above-captioned case, called for examination pursuant to the provisions of the State of Illinois Environmental Protection Agency, heard by MS. CHLOE SALK, Hearing Officer, taken before Kathy L. Johnson, C.S.R., on September 27th, 2023, at the hour of 9:00 a.m., at the Illinois Environmental Protection Agency, Sangamon Room, 1021 N. Grand Avenue East, Springfield, Illinois, 62701.

I N D E X

E X H I B I T S

A P P E A R A N C E S

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Hearing Officer

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JENNIFER VAN WIE
MICHAEL D. MANKOWSKI
ANAND RAO
MARIE TIPSORD, General Counsel

P R O C E E D I N G S

HEARING OFFICER: Good morning, and welcome to the Illinois Pollution Control hearing. My name is Chloe Salk and I am the hearing officer for this rulemaking proceeding entitled Amendments to 35 Illinois Administrative Code 201, 202 and 212.

The Board docket number for this rulemaking is R23-18(A). To get started, I want to quickly go through three preliminary items: Introductions, the procedure to date, and then housekeeping, including the order in which we'll plan to proceed.

First, introductions: Present today from the Board are Board member Michelle Gibson, the lead Board member assigned to this docket, Board member Jennifer Van Wie, Board member Michael D. Mankowski.

And present from the Board's staff are Anand Rao of the Board's technical staff, and General Counsel Marie Tipsord who is in the audience today.

Second, the Board's procedure to date: On August 7th, 2023, the Illinois Environmental

Regulatory Group, Rain Carbon, LLC, Dynegy Midwest Generation, LLC, and Midwest Generation, LLC, American Petroleum Institute, and East Dubuque Nitrogen Fertilizer, LLC, filed rulemaking proposals.

In an order on August 17th the Board accepted the proposals for hearing. In an order on August 17th, 2023 the hearing officer scheduled two hearings.

Notice for this hearing was posted on August 21st, 2023 in the Chicago Sun Times; on August 22nd in the Belleville News Democrat and the News Tribune; and on August 23rd in the News-Gazette, the State Journal-Register, and the Galena Gazette.

Today we are of course holding the first hearing. In the order scheduling hearings, the hearing officer directed participants intending to testify at this hearing to pre-file their testimony no later than August 28th.

Another hearing officer order granted Rain Carbon's motion to extend the deadline for its pre-filed testimony to September 5th. On August 28th the Board received pre-filed

testimony from Ross Garres, David Wall, John Derek Reese, Phillip G. Crnkovich, Sharene Shealey, and Cynthia Vodopivec. On September 5th the Board received pre-filed testimony from Bryan Higgins.

The order also directed participants to pre-file questions based on that testimony by Wednesday, September 20th.

On that date the Board received pre-filed questions from the Illinois Attorney General's Office. In a hearing office order on that date the Board also submitted questions.

The Board posted all of these documents to its Clerk's Office On-Line, or COOL, under this docket number R23-18(A) as they were filed.

Finally, our housekeeping for this hearing. This hearing is governed by the Board's procedural rules. Under Section 102.426 of those rules all information that is relevant and is not repetitious or privileged will be admitted by the hearing officer into the record.

Please bear in mind that any questions posted today by the Board and its staff are intended solely to help develop a clear and

complete record for the Board's decision, and those questions do not reflect any determination or judgment on the proposal, testimony, or questions.

For the sake of our court reporter please speak clearly and avoid speaking at the same time as another person so that we can help produce a clear transcript. If you are asking questions please state your name and the organization you represent prior to any questions.

Also, if talking about sections of the rules please spell out the Section letters such as 620.101(D), as in dog. Miss Court Reporter, please feel free to stop me or anyone else if we are going too fast, talking too softly, or if you need something repeated.

There's a sign-in sheet at the door over there in the back for anyone who wants to sign up for public comment. So if there are any members of the public in person here today, please go ahead and write your name on the list.

As a reminder, anyone can submit written comments on the Board's Clerk's Office On-Line system. The Board weighs oral and written public

comment equally. As to the order of today's proceedings, we'll call the following witnesses in this order. First will be Ross Gares and Bryan Higgins. Then it will be David Wall, then John Derek Reese, then Phillip G. Crnkovich, and then Sharene Shealey and Cynthia Vodopivec.

After being duly sworn in, the pre-filed testimony will be entered into the record as if read under Section 102.424(f) of the Board's procedural rules.

We will then turn to questions for each witness with pre-filed questions from the Attorney General's Office first, then to any other questions from any participants and then the Board's pre-filed questions.

Should we finish with witness questioning today, at the end of the hearing I'll ask if there are any public comments from the members of the public.

I anticipate taking a 10-minute break around 10:30 a.m. and then breaking for an hour for lunch from noon to 1:00, and then another short break -- afternoon break -- around 3:00 p.m. If we haven't finished with questions and

public comments already we'll end today at around 5:00 p.m. Are there any questions about our order of proceeding? Okay. Seeing none, we will turn to testimony starting with Ross Gares and Bryan Higgins. Are they ready to go?

Okay. We'll have you step up to the front table up here.

MR. LORING: One procedural question.

HEARING OFFICER: Yeah.

MR. LORING: There are some questions that we -- yeah, this is David Loring on behalf of Rain Carbon. There are some questions that were filed by the Illinois Attorney General that Ross Gares will answer and some Bryan Higgins will answer, and so they may be out of order.

HEARING OFFICER: That's fine.

MR. LORING: I'm not sure how we want to proceed with that.

HEARING OFFICER: Yeah. Yeah, we will have you sworn in first and then we'll go to questions and the questions will be directed at each person. Yeah, like a panel. Okay.

So would the court reporter please swear in the witnesses?

(Witnesses sworn)

ROSS GARES and BRYAN HIGGINS, being both duly sworn on oath, were examined and testified as follows:

HEARING OFFICER: Okay. As mentioned earlier, the witness' testimony is entered into the record as if read, and we'll enter Ross Gares' testimony as Hearing Exhibit Number One and then Bryan Higgins' testimony as Hearing Exhibit Number Two.

So we'll proceed with questions first from the Attorney General's Office. If you would like to step up to the podium. And if you could please state your name first for the court reporter.

MR. JAMES: Jason James, Illinois Attorney General's Office.

HEARING OFFICER: And go ahead.

MR. JAMES: Sure. We pre-filed a set of questions so I'll just go ahead and read on the pre-filed questions and then if I have follow-ups to those I'll go ahead and ask you after you answer.

DIRECT EXAMINATION BY

members have any additional questions? Okay. Again, I'm just going to reiterate, if you could please respond here or in a written public comment to JCAR's staff changes to the questions in the rule text in public comment number two. Awesome. Thank you.

All right. So we will move on to the next witness which is John Derek Reese with the American Petroleum Institute. All right. Would the court reporter please swear in the witness?

(Witness sworn)

JOHN REESE,

being first duly sworn on oath, was examined and testified as follows:

HEARING OFFICER: Okay. As mentioned earlier, the witness' testimony is entered into the record as if read and entered as hearing Exhibit Number Four. So we will then proceed with questions from the Attorney General's Office first.

And if you can please state your name first for the court reporter. Thank you.

DIRECT EXAMINATION BY

MR. ARMSTRONG:

MR. ARMSTRONG: Andrew Armstrong for the Illinois Attorney General's Office. Good morning.

MR. REESE: Good morning.

MR. ARMSTRONG: In its Statement of Reasons, API asserts that one of the refineries conducted screening modeling of impacts using continuous emission monitoring system data from recent startup events to conservative estimate of ambient impacts during these events.

The incremental emission impact during startups were less than three percent and six percent of the one hour and eight hour standards respectively. So that's taken from API's statement of Reasons at page 40.

Question number one: Does this assertion refer to monitoring data summarized in the Technical Support Document accompanying Marathon Petroleum Company, LLC's Petition For an Adjusted Standard at page TSD-14?

MR. REESE: John Derek Reese, American Petroleum Institute. This passage instead refers to the modeling conducted by ExxonMobil and described in their petition for the adjusted

standard.

MR. ARMSTRONG: Oh. Okay. Thank you. If I could though ask about the Marathon data. Why was Marathon required to operate the two monitoring stations from calendar years 2017 through 2019?

When were the monitoring stations first installed, and have the monitoring stations been operated at any time since the end of the 2019 calendar year?

MR. REESE: John Derek Reese, American Petroleum Institute. Marathon was required to operate two monitoring stations per the conditions of the consent order effective May 15th, 2015, between Marathon and the State in People versus Marathon Petroleum Company, Crawford County, as a result of the resolution of the alleged violations which were mostly permitting vapor pressure and VOM-related allegations, which Marathon did not admit to.

Marathon agreed to conduct a supplemental environmental project SEP. The purpose of the SEP was to undertake an ambient air modeling and monitoring project at and around the Robinson

refinery to evaluate emissions from the refinery for baseline purposes and to compare them, then recently revised as of two NAAQS. The project included installation of two ambient air monitors and a meteorological station. The project operated from January 1st of 2017 through December 31st, 2020.

The monitoring stations monitor the following emissions; carbon monoxide, CO; nitrogen dioxide, NO_2; total reduced sulfur. TRS; PM_{10}; and VOC.

MR. ARMSTRONG: Thank you. That covered number three so we'll move on to number four. Please describe the location of the two monitoring stations relative to both (a) the Marathon refinery's fence line, and (b) the Marathon refinery's fluid catalytic cracking unit, FCCU, including both distance and direction.

MR. REESE: John Derek Reese, American Petroleum Institute. A little wordy as I give you the details, but you have it. Monitoring station number one is situated on property owned and maintained by Marathon and is located

approximately 670 feet north of the northeastern Section of the refinery fence line and approximately 95 feet southeast of a refinery service road. Monitoring station number one is approximately 2000 feet north of the FCCU.

Monitoring station number two is situated on property owned and maintained by Marathon and is approximately -- is located approximately -- 115 feet west of the western edge of Southeast Street, 80 feet northeast of the nearest edge of East Orlando Drive, and 100 feet west of the southwestern fence line.

Monitoring station number two is located at approximately 1900 feet southwest of the FCCU.

MR. ARMSTRONG: Thank you. Question number five. Please state the date and time of each of the five FCCU startups at the Marathon refinery during calendar years 2017 through 2019 as described in Marathon's Technical Support Document at TSD-14.

MR. MESSINA: Alec Messina on behalf of API. And again there is a chart that he's going to read off but it may be easier to look at the chart.

MR. REESE: John Derek Reese, American Petroleum Institute. I'll go in order. So the first startup begins January 7th, 2018 at 01:45. Startup is completed January 8th, 2018 at 07:30. The second startup is February 17th, 2019 at 23:00 hours. Startup is complete February 18th, 2019, 16:45.

The third startup is April 4th, 2019, 17:30. It ends April 5th, 2019 at 04:30. The fourth startup is June 6th, 2019, 13:30. It's complete June 7th, 2019 at 00:30. The last one is December 8th, 2019 at 15:30. It's complete at December 9th, 2019 at 12:00.

MR. ARMSTRONG: Thank you. And I know we won't be reading this into the record today, but if API could please provide all monitoring data available from the two monitoring stations from the dates of those five FCCU startups at the Marathon refinery that were just summarized in post-hearing comments, we would appreciate that.

MR. REESE: John Derek Reese, American Petroleum Institute. We will do that.

MR. ARMSTRONG: That's all for us. Thank you.

HEARING OFFICER: Thank you. All right. Are there any other questions from any other participants? Okay. Seeing none, we will go to Board questions.

MR. RAO: Okay.

CROSS EXAMINATION BY

MR. RAO:

MR. RAO: Good morning, Mr. Reese.

MR. REESE: Good morning.

MR. RAO: Let's start with the Board's question number 13. On page one of your testimony you state that your current responsibilities include advocating on environmental and process safety issues that may impact the procedures and/or operations of the refineries in the United States.

13(a). Please comment on how many refineries with petroleum catalytic cracking units have been affected by USEPA's 2015 SSM SIP call in states other than Illinois?

MR. REESE: John Derek Reese, American Petroleum Institute. There are over 100 refineries operating in 31 different states. Each state had distinctive changes that were

required by the USEPA's 2015 SSM SIP call. Those changes have been focused primarily on the rule of affirmative defense language. What is unique about Illinois' response is that it eliminated for purposes of safety, compliance and startups, use of a federal emission alternative for catalytic cracking unit startups which was specifically written to address safety concerns.

MR. RAO: Are you -- 13B. Are you aware of how the affected refineries in other states are addressing the SIP call requirements?

MR. REESE: John Derek Reese, American Petroleum Institute. I refer the Board back to the public testimony of David Wall on behalf of IERG in the original rulemaking R200-23-018.

In that testimony he stated that other states either do not have CO standards, FCCUs, or they exempt units subject to federal regulations. Examples from Indiana and California were provided with links.

The 200 part per million CO limit in Section 216.361 is unique to Illinois without the proposed AEL. As such, refineries in other states are able to utilize the federal

alternatives for startups. Again, Illinois is the outlier on their approach with respect to process safety. But not including the federal alternative as part of their SIP changes it's important to note that U.S. refineries have been implementing the federal alternatives successfully since 2019.

MR. RAO: Does that answer 13(c) or do you have any more to add to your response?

MR. REESE: John Derek Reese. Just a couple more sentences. So all U.S. refineries and catalytic cracking units are subject to Part 63 NESHAP standards.

These standards have been applicable since the promulgation of the rule in 2016. The final compliance state was 2019. The alternative standard prescribed in refinery Section rules are applicable requirements in all states.

MR. RAO: Question 14. Please clarify whether new or existing petroleum catalytic cracking units are generally subject to the NESHAP standards for petroleum refineries, or would they have to comply with them only if the proposed alternative standards are adopted by the

Board?

MR. REESE: All U.S. refineries with catalytic cracking units are subject to the part 63 NESHAP standards. These standards have been applicable since 2016 promulgation of these standards.

The alternative standard prescribed in the refinery section rules are applicable requirements in all states. Illinois, without the proposed alternative emission limit which incorporates these standards, removes the provision for SCC and startup in refineries.

While this is unlikely to be the intent, the effect of not having an AEL would essentially mandate the refinery conduct startup operations in an unsafe manner.

MR. RAO: Question 15. On page three of your testimony you note that if refractory repairs were made a refractory dry-out period is required and the regenerator temperature must be raised slowly to prevent water from damaging the refractory.

15(a). Please comment on how frequently refractory repairs are done on the cracking

units.

MR. REESE: Every refinery startup is unique and an individual company decision as to the extent of the repairs and the maintenance actions taken during the downtime.

Refractory inspection is a typical task during downtime or when vessel entry occurs. Inspection findings identify the type of refractory repairs to be executed.

MR. RAO: 15(b). What would be typical rate of regenerator temperature increase under normal startup conditions when no refractory repair is involved?

MR. REESE: It's not possible to provide a typical profile answer to the question. The temperature increase profile is dependent upon the individual's vessels and the extent of the refractory work conducted. So some would, you could go faster or slower, depending on the amount of work you had. Right.

MR. RAO: Question 16. On page 10 regarding Marathon Refinery's adjusted standard petition you indicate that Marathon's FCCU had five startups over a period of three years.

16(a). Please clarify whether one or two startups per year are typical for a catalytic cracking unit?

MR. REESE: The number of unit startups can vary based on the reasons for unit downtime. As such, while large turnarounds are on multiple-year intervals is not uncommon for unplanned events to create unit shutdowns or hot standby in a given year, a power outage due to grade issues or weather such as winter storms, hurricanes, or flooding may necessitate a catalytic crack to be shut down.

Equipment breakdowns at the catalytic cracking unit or other units may necessitate a shutdown and subsequent startup.

MR. RAO: 16(b). Would it be possible to provide startup information like Marathon's for FCCUs at other refineries covered by the API's proposal?

MR. REESE: The existing federal refinery standards for catalytic cracking units require continuous emissions monitoring, SIMS, for CO. Performance reports for these monitors is provided on a semiannual basis to IEPA and USEPA.

In these reports the CO concentrations are recorded as well as the periods of shutdown, startup, malfunctions, and/or maintenance which are provided by date and hour.

In its pre-filed questions the Attorney General's Office records Marathon's ambient monitoring data. To our knowledge, the other Illinois refineries have not had similar monitors in their areas in recent years.

MR. RAO: Okay. And you will be responding to the Attorney General's question?

MR. REESE: Right. Yes, sir.

MR. RAO: Okay. Question 17. Also on page 10 you note that API's proposed alternative emissions limit requires the frequency and duration of operations in startup or hot standby mode are minimized to the greatest extent practicable.

17(a). Please comment on whether the affected refineries maintain information on frequency and duration of FCCUs in hot standby mode on a monthly or yearly basis. If so, please provide such data.

MR. REESE: As noted in the previous

answer to question 16, this information is part of the current regulatory report contents for CO SIPs.

MR. RAO: 17(b). Also comment on whether hot standby --

HEARING OFFICER: Did you have a question?

MR. ARMSTRONG: Yes. Andrew Armstrong with the Illinois Attorney General's Office. I have a follow-up question about the ExxonMobil AERMOD data. I believe it's referenced in the Technical Support Documents for ExxonMobil's proposal for adjusted standard on page 34.

It doesn't appear that there was more detail provided beyond the statement that ExxonMobil has used AERMOD to conduct screening modeling.

And then the -- the results of that, generally summarized -- I was wondering if API could submit more detail about the AERMOD screening that ExxonMobil performed, including the inputs and then more detail on the results?

MR. MESSINA: This is Alec Messina on behalf of API, and we will follow up after the

hearing and provide what information we can.

MR. ARMSTRONG: Sounds good. Thank you.

HEARING OFFICER: Okay.

MR. RAO: So where were we? 17 --

HEARING OFFICER: A.

MR. RAO: 17(b). Yeah. 17B. Also comment on whether hot standby operational mode falls under the purview of SSM SIP calls?

MR. REESE: Hot standby is specifically noted as an opt-in scenario for the alternative emission standard in the federal language.

MR. RAO: Okay. Thank you. That's all.

HEARING OFFICER: Okay. Are there any other questions from the Board? Okay. And then just again, if you could please respond here today or in written public comment to JCAR's staff changes to, and questions, to the rule text in public comment two as well as to the Board's suggested changes attached to its pre-filed questions. Thank you.

MR. REESE: All right.

HEARING OFFICER: It's close enough to 10:30 that I think we'll take a break now for 10 minutes and be back here at 10:35.

HEARING OFFICER: So we'll go back on the record to adjourn then. Copies of the transcript of today's hearing are expected to be available no later than Tuesday, October 3rd.

When the Board receives the transcript we will promptly post it to COOL from which it can be viewed and printed.

The second hearing is scheduled on Wednesday, November 1st, 2023, beginning at 9:00 a.m. at the Michael A. Bilandic Building in Chicago.

The deadline to pre-file testimony for the second hearing is October 18th, 2023, and to pre-file questions is Wednesday, October 25th, 2023. Before the second hearing adjourns we will set a post-hearing comment deadline.

Are there any other matters that need to be addressed at this time? Yes?

MR. SAWULA: Can I ask a follow-up question off the record on the second hearing?

HEARING OFFICER: Yes. We'll go off the record, please.

(Discussion off the record)

HEARING OFFICER: We'll go back on the

record. Okay. I would like to thank everyone for participating today, and this first hearing is adjourned.

(Hearing end time: 11:42 a.m.)

CERTIFICATE OF REPORTER

I, Kathy L. Johnson, a Certified Court Reporter, and Notary Public within and for the State of Illinois, DO HEREBY CERTIFY that the testimony of all witnesses in the foregoing hearing were duly sworn to testify to the truth and nothing but the truth; that the testimony of said witnesses was taken by stenographic means by me to the best of my ability and thereafter reduced to print under my direction.

I further certify that I am neither attorney nor counsel for, nor related, nor employed by any of the parties to the action in which this deposition was taken; further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, or financially interested in this action.

Kathy Johnson

Kathy Johnson
Notary Public within and
For the State of Illinois.

Exhibit 5

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
	)	R 23-18(A)
AMENDMENTS TO 35 ILL. ADM. CODE	)	(Rulemaking – Air)
PARTS 201, 202, AND 212	)	

NOTICE OF FILING

TO: Mr. Don A. Brown**,**
Clerk of the Board
Illinois Pollution Control Board
100 West Randolph Street,
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Chicago, Illinois 60601

Timothy Fox
Chloe Salk
Hearing Officers
Illinois Pollution Control Board
60 East Van Buren Street, Suite 630
Chicago, Illinois 60605

(SEE PERSONS ON ATTACHED SERVICE LIST)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board, the **FIRST POST-HEARING COMMENT** on behalf of the American Petroleum Institute**,** copies of which, are hereby served upon you.

Respectfully submitted,

AMERICAN PETROLEUM INSTITUTE,

By: **/s/** Alec Messina_____
One of its Attorneys

Dated: October 18, 2023

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(217) 528-3674

CERTIFICATE OF SERVICE

I, the undersigned, on oath state the following: That I have served the attached **FIRST POST-HEARING COMMENT of the AMERICAN PETROLEUM INSTITUTE,** via electronic mail upon:

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That the number of pages in the email transmission is 23.

That the email transmission took place before 5:00 p.m. on October 18, 2023.

Date: October 18, 2023

/s/ Alec Messina
Alec Messina

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	**)**	
	)	
AMENDMENTS TO 35 ILL. ADM. CODE	**)**	**R 23-18(A)**
PARTS 201, 202, AND 212	**)**	**(Rulemaking – Air)**

FIRST POST-HEARING COMMENT OF THE
AMERICAN PETROLEUM INSTITUTE

NOW COMES Petitioner, the AMERICAN PETROLEUM INSTITUTE ("API"), by and through its undersigned attorney, hereby submits to the Illinois Pollution Control Board ("Board") its First Post-Hearing Comment in this sub-docket rulemaking.

Proposed Revisions to Rule Language

On September 20, 2023, the Hearing Officer entered an Order in this sub-docket, which included the Board's pre-filed questions to the participants of the proceeding. In the first pre-filed question, the Board asked participants whether they had any concerns regarding the non-substantive revisions to the proposed amendments shown in Attachment A to the pre-filed questions. Attachment, Hearing Officer Order, PCB R 23-18(A) at 1 (Sept. 20, 2023). In relation to API's proposal, the Board proposed revisions to 35 Ill. Adm. Code 216.103, 216.104, and 216.361. API has no concerns regarding the Board's proposed revisions to these sections.

Furthermore, at the First Hearing in this matter, the Board requested that API respond to the Joint Committee on Administrative Rules' ("JCAR") questions filed with the Board on September 7, 2023. Transcript of First Hearing, PCB R 23-18(A) at 77:14-20 (Sept. 27, 2023); *see* Public Comment #2, PCB R 23-18(A) (Sept. 7, 2023). API does not object to JCAR's proposed changes to 35 Ill. Adm. Code 216.104 or 216.361.

Monitoring Data

On September 20, 2023, the Attorney General's Office ("AGO") filed pre-filed questions directed to witnesses at the First Hearing in this sub-docket. The AGO filed a number of pre-filed questions directed at API. At the First Hearing, API's witness, John Derek Reese, provided responses to the AGO's pre-filed questions. As to the AGO's pre-filed question #5 directed to API, the AGO requested the date and time of each of the five FCCU startups at the Marathon refinery during calendar years 2017-2019. Mr. Reese provided that information at the First Hearing; however, for convenience, API is hereby again submitting the information:

Startup Begins	Startup Complete
1/7/2018 01:45	1/8/2018 07:30
2/17/2019 23:00	2/18/2019 16:45
4/4/2019 17:30	4/5/2019 4:30
6/6/2019 13:30	6/7/2019 0:30
12/8/2019 15:30	12/9/2019 12:00

The AGO's pre-filed question #6 to API requested that API "provide all monitoring data available from the two monitoring stations from the dates of the five FCCU startups at the Marathon refinery during calendar years 2017 through 2019." As explained by Mr. Reese at the First Hearing, Marathon's two monitoring stations monitored carbon monoxide ("CO"), nitrogen dioxide ("NO_2"), total reduced sulfur ("TRS"), PM_{10}, and volatile organic compounds ("VOC"). Testimony of John Derek Reese, First Hearing Transcript, PCB R 23-18(A) at 66:8-11 (Sep. 27, 2023).[1] API hereby provides, attached as Exhibit 1 hereto, excerpts from Marathon's Completion Report prepared pursuant to the Consent Order, which includes summary CO data from Marathon's monitoring stations from 2017 through 2019. API objects to the AGO's request to provide

[1] Simultaneous with this Post-Hearing Comment, API is filing a Motion for Correction of the transcript of the First Hearing, correcting several typographical errors relating to Mr. Reese's testimony.

monitoring data related to emissions from other pollutants as such information is not relevant to API's proposal in this sub-docket. API's proposal proposes amendments to Part 216 of the Board's regulations, which govern CO emissions. Specifically, API's proposal concerns amendments to 35 Ill. Adm. Code 216.361, which provides CO emission standards for petroleum and petrochemical processes. Emissions of other pollutants are therefore not relevant to API's proposal.

Modeling Data

At the First Hearing in this sub-docket, the AGO requested that API submit more detail about the AERMOD screening that ExxonMobil performed, including the inputs and more detail on the results. First Hearing Transcript, PCB R 23-18(A) at 76:8-22 (Sep. 27, 2023). API hereby submits, as Exhibit 2 hereto, additional information concerning the CO dispersion modeling performed at the ExxonMobil refinery.

WHEREFORE, for the above and foregoing reasons, the American Petroleum Institute hereby respectfully submits its First Post-Hearing Comment for the Illinois Pollution Control Board's consideration.

Respectfully submitted,

AMERICAN PETROLEUM INSTITUTE,

Dated: October 18, 2023

By: /s/ *Alec Messina*
One of Its Attorneys

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Table 2-5: CO Highest and Second Highest Averages For January 1, 2017 - December 31, 2017			
Monitoring Site	**Highest Hourly Average, Date(s) and Time(s) of Occurrence**	**2nd Highest Hourly Average, Date(s) and Time(s) of Occurrence**	**Max 8-Hour Running Average, Date(s) and Time(s) of Occurrence**
Site #1	**0.8 ppm** 8/1/17 10AM	**0.7 ppm** Refer to Data Listings	**0.6 ppm** 12/3/17 12AM, 2AM
Site #2	**1.2 ppm** 2/1/17 8AM	**1.0 ppm** 5/30/17 7PM	**0.5 ppm** Refer to Data Listings
CO Highest and Second Highest Averages For January 1, 2018 - December 31, 2018			
Monitoring Site	**Highest Hourly Average, Date(s) and Time(s) of Occurrence**	**2nd Highest Hourly Average, Date(s) and Time(s) of Occurrence**	**Max 8-Hour Running Average, Date(s) and Time(s) of Occurrence**
Site #1	**0.8 ppm** 12/12/18 4PM	**0.7 ppm** 10/19/18 11AM,1PM, 12/12/18 7PM	**0.5 ppm** Refer to Data Listings
Site #2	**1.3 ppm** 1/17/18 7AM	**1.1 ppm** 1/17/18 6AM, 1/28/18 6AM, 12/17/18 5AM	**0.8 ppm** 1/13/18 8PM, 9PM
CO Highest and Second Highest Averages For January 1, 2019 - December 31, 2019			
Monitoring Site	**Highest Hourly Average, Date(s) and Time(s) of Occurrence**	**2nd Highest Hourly Average, Date(s) and Time(s) of Occurrence**	**Max 8-Hour Running Average, Date(s) and Time(s) of Occurrence**
Site #1	**1.8 ppm** 11/10/19 10PM	**1.7 ppm** 11/11/19 12AM	**1.2 ppm** 11/11/19 1AM,4AM-5AM
Site #2	**0.9 ppm** Refer to Data Listings	**0.8 ppm** 4/2/19 4AM, 8/1/19 7AM	**0.6 ppm** 3/18/19 6AM-8AM

EXHIBIT 1

Table 4-7: 2017 CO 1-Point Quality Control Checks: Site #1			
Date	**Known Concentration (ppb)**	**DAS-Indicated Concentration (ppb)**	**Percent Difference (Δ %)**
1/6/17	4.5	4.6	2.22
1/13/17	4.5	4.6	2.22
1/20/17	4.5	4.5	0.00
1/27/17	4.5	4.4	-2.22
2/3/17	4.5	4.4	-2.22
2/10/17	4.5	4.3	-4.44
2/17/17	4.5	4.4	-2.22
2/23/17	4.5	4.3	-4.44
2/23/17	5.0	5.1	2.00
2/24/17	4.5	4.6	2.22
3/3/17	4.5	4.4	-2.22
3/10/17	4.5	4.4	-2.22
3/12/17	4.5	4.3	-4.44
3/12/17	5.0	5.0	0.00
3/17/17	4.5	4.5	0.00
3/24/17	4.5	4.4	-2.22
3/31/17	4.5	4.4	-2.22
Absolute Value of Mean Percent Differences (AB)		**2.21**	
Standard Deviation of Absolute Value of Mean Percent Differences (AS)		**1.36**	
Precision (CV%)		**3.08**	
Signed Bias (%)		**-2.79**	
Upper 95% Probability Limit		**3.42**	
Lower 95% Probability Limit		**-5.80**	

Table 4-7: 2017 CO 1-Point Quality Control Checks: Site #1 (continued)			
Date	**Known Concentration (ppb)**	**DAS-Indicated Concentration (ppb)**	**Percent Difference (Δ %)**
4/7/17	4.5	4.3	-4.44
4/14/17	4.5	4.4	-2.22
4/21/17	4.5	4.2	-6.67
4/21/17	4.5	4.2	-6.67
4/21/17	6.9	6.9	0.00
4/28/17	4.5	4.4	-2.22
5/5/17	4.5	4.5	0.00
5/12/17	4.5	4.7	4.44
5/19/17	4.5	4.4	-2.22
5/26/17	4.5	4.5	0.00
5/30/17	4.5	4.4	-2.22
5/30/17	5.0	5.1	2.00
6/2/17	4.5	4.8	6.67
6/9/17	4.5	4.8	6.67
6/16/17	4.5	4.7	4.44
6/23/17	4.5	4.6	2.22
6/30/17	4.5	4.6	2.22
Absolute Value of Mean Percent Differences (AB)		**3.26**	
Standard Deviation of Absolute Value of Mean Percent Differences (AS)		**2.38**	
Precision (CV%)		**5.39**	
Signed Bias (%)		**±4.26**	
Upper 95% Probability Limit		**8.18**	
Lower 95% Probability Limit		**-7.94**	

Table 4-7: 2017 CO 1-Point Quality Control Checks: Site #1 (continued)			
Date	**Known Concentration (ppb)**	**DAS-Indicated Concentration (ppb)**	**Percent Difference (Δ %)**
7/7/17	4.5	4.6	2.22
7/14/17	4.5	4.4	-2.22
7/21/17	4.5	4.3	-4.44
7/28/17	4.5	4.3	-4.44
7/28/17	4.5	4.2	-6.67
7/28/17	5.0	5.2	4.00
8/4/17	4.5	4.8	6.67
8/11/17	4.5	4.7	4.44
8/18/17	4.5	4.5	0.00
8/25/17	4.5	4.5	0.00
9/1/17	4.5	4.5	0.00
9/8/17	4.5	4.3	-4.44
9/11/17	5.0	5.2	4.00
9/15/17	4.5	4.7	4.44
9/22/17	4.5	4.7	4.44
9/29/17	4.5	4.7	4.44
Absolute Value of Mean Percent Differences (AB)		**3.56**	
Standard Deviation of Absolute Value of Mean Percent Differences (AS)		**2.11**	
Precision (CV%)		**5.51**	
Signed Bias (%)		**±4.48**	
Upper 95% Probability Limit		**8.93**	
Lower 95% Probability Limit		**-7.37**	

Table 4-7: 2017 CO 1-Point Quality Control Checks: Site #1 (continued)			
Date	**Known Concentration (ppb)**	**DAS-Indicated Concentration (ppb)**	**Percent Difference (Δ %)**
10/6/17	4.5	4.6	2.22
10/13/17	4.5	4.7	4.44
10/20/17	4.5	4.7	4.44
11/3/17	4.5	4.7	4.44
11/10/17	4.5	4.4	-2.22
11/17/17	4.5	4.5	0.00
11/24/17	4.5	4.5	0.00
12/1/17	4.5	4.5	0.00
12/8/17	4.5	4.4	-2.22
12/15/17	4.5	4.5	0.00
12/22/17	4.5	4.5	0.00
12/29/17	4.5	4.5	0.00
Absolute Value of Mean Percent Differences (AB)		**1.67**	
Standard Deviation of Absolute Value of Mean Percent Differences (AS)		**1.93**	
Precision (CV%)		**3.38**	
Signed Bias (%)		**+2.66**	
Upper 95% Probability Limit		**5.65**	
Lower 95% Probability Limit		**-3.79**	

Table 4-8: 2018 CO 1-Point Quality Control Checks: Site #1			
Date	**Known Concentration (ppb)**	**DAS-Indicated Concentration (ppb)**	**Percent Difference (Δ %)**
1/5/18	4.5	4.5	0.00
1/12/18	4.5	4.5	0.00
1/19/18	4.5	4.5	0.00
1/26/18	4.5	4.5	0.00
2/2/18	4.5	4.5	0.00
2/9/18	4.5	4.5	0.00
2/16/18	4.5	4.5	0.00
2/23/18	4.5	4.5	0.00
3/2/18	4.5	4.4	-2.22
3/9/18	4.5	4.4	-2.22
3/16/18	4.5	4.4	-2.22
3/22/18	7.3	7.3	0.00
3/22/18	7.3	7.4	1.37
3/23/18	4.5	4.6	2.22
3/30/18	4.5	4.5	0.00
Absolute Value of Mean Percent Differences (AB)		**0.68**	
Standard Deviation of Absolute Value of Mean Percent Differences (AS)		**1.02**	
Precision (CV%)		**1.64**	
Signed Bias (%)		**±1.15**	
Upper 95% Probability Limit		**2.20**	
Lower 95% Probability Limit		**-2.61**	

Table 4-8: 2018 CO 1-Point Quality Control Checks: Site #1 (continued)			
Date	**Known Concentration (ppb)**	**DAS-Indicated Concentration (ppb)**	**Percent Difference (Δ %)**
4/6/18	4.5	4.5	0.00
4/13/18	4.5	4.5	0.00
4/20/18	4.5	4.5	0.00
4/27/18	4.5	4.5	0.00
5/4/18	4.5	4.4	-2.22
5/11/18	4.5	4.4	-2.22
5/18/18	4.5	4.2	-6.67
5/25/18	4.5	4.3	-4.44
5/30/18	7.3	7.3	0.00
5/30/18	7.3	7.6	4.11
6/1/18	4.5	4.4	-2.22
6/8/18	4.5	4.4	-2.22
6/15/18	4.5	4.4	-2.22
6/22/18	4.5	4.3	-4.44
6/29/18	4.5	4.3	-4.44
Absolute Value of Mean Percent Differences (AB)		**2.35**	
Standard Deviation of Absolute Value of Mean Percent Differences (AS)		**2.11**	
Precision (CV%)		**3.52**	
Signed Bias (%)		**-3.31**	
Upper 95% Probability Limit		**3.35**	
Lower 95% Probability Limit		**-6.95**	

Table 4-8: 2018 CO 1-Point Quality Control Checks: Site #1 (continued)			
Date	**Known Concentration (ppb)**	**DAS-Indicated Concentration (ppb)**	**Percent Difference (Δ %)**
7/6/18	4.5	4.4	-2.22
7/13/18	4.5	4.3	-4.44
7/20/18	4.5	4.2	-6.67
7/23/18	7.3	7.1	-2.74
7/23/18	7.3	7.4	1.37
7/27/18	4.5	4.5	0.00
8/3/18	4.5	4.5	0.00
8/10/18	4.5	4.5	0.00
8/17/18	4.5	4.5	0.00
8/24/18	4.5	4.4	-2.22
8/31/18	4.5	4.6	2.22
9/7/18	4.5	4.4	-2.22
9/7/18	7.3	7.3	0.00
9/14/18	4.5	4.4	-2.22
9/21/18	4.5	4.5	0.00
9/28/18	4.5	4.4	-2.22
Absolute Value of Mean Percent Differences (AB)		**1.79**	
Standard Deviation of Absolute Value of Mean Percent Differences (AS)		**1.87**	
Precision (CV%)		**2.96**	
Signed Bias (%)		**-2.60**	
Upper 95% Probability Limit		**3.04**	
Lower 95% Probability Limit		**-5.71**	

Table 4-8: 2018 CO 1-Point Quality Control Checks: Site #1 (continued)			
Date	**Known Concentration (ppb)**	**DAS-Indicated Concentration (ppb)**	**Percent Difference (Δ %)**
10/5/18	4.5	4.3	-4.44
10/9/18	4.5	4.3	-4.44
10/9/18	4.5	4.6	2.22
10/12/18	4.5	4.6	2.22
10/15/18	4.5	4.5	0.00
10/18/18	7.3	7.4	1.37
10/18/18	7.6	7.8	2.63
10/22/18	4.5	4.6	2.22
10/29/18	4.5	4.7	4.44
11/5/18	4.5	4.7	4.44
11/12/18	4.5	4.7	4.44
11/19/18	4.5	4.6	2.22
11/26/18	4.5	4.6	2.22
12/3/18	4.5	4.6	2.22
12/10/18	4.5	4.9	8.89
12/17/18	4.5	4.6	2.22
12/24/18	4.5	4.8	6.67
12/31/18	4.5	4.6	2.22
Absolute Value of Mean Percent Differences (AB)		**3.31**	
Standard Deviation of Absolute Value of Mean Percent Differences (AS)		**2.08**	
Precision (CV%)		**4.15**	
Signed Bias (%)		**+4.16**	
Upper 95% Probability Limit		**8.58**	
Lower 95% Probability Limit		**-3.94**	

Table 4-9: 2019 CO 1-Point Quality Control Checks: Site #1			
Date	**Known Concentration (ppb)**	**DAS-Indicated Concentration (ppb)**	**Percent Difference (Δ %)**
1/7/19	4.5	4.7	4.44
1/14/19	4.5	4.6	2.22
1/21/19	4.5	4.7	4.44
1/28/19	4.5	4.7	4.44
1/31/19	4.5	4.8	6.67
1/31/19	4.5	4.4	-2.22
2/4/19	4.5	4.3	-4.44
2/11/19	4.5	4.4	-2.22
2/18/19	4.5	4.3	-4.44
2/25/19	4.5	4.2	-6.67
3/4/19	4.5	4.3	-4.44
3/11/19	4.5	4.7	4.44
3/18/19	4.5	4.6	2.22
3/25/19	4.5	4.4	-2.22
Absolute Value of Mean Percent Differences (AB)		**3.97**	
Standard Deviation of Absolute Value of Mean Percent Differences (AS)		**1.55**	
Precision (CV%)		**5.98**	
Signed Bias (%)		**±4.7**	
Upper 95% Probability Limit		**8.78**	
Lower 95% Probability Limit		**-8.46**	

Table 4-9: 2019 CO 1-Point Quality Control Checks: Site #1 (continued)			
Date	**Known Concentration (ppb)**	**DAS-Indicated Concentration (ppb)**	**Percent Difference (Δ %)**
4/1/19	4.5	4.4	-2.22
4/8/19	4.5	4.2	-6.67
4/15/19	4.5	4.3	-4.44
4/22/19	4.5	4.3	-4.44
4/30/19	7.5	7.3	-2.67
4/30/19	7.5	7.5	0.00
5/6/19	4.5	4.4	-2.22
5/13/19	4.5	4.3	-4.44
5/20/19	4.5	4.2	-6.67
6/3/19	4.5	4.2	-6.67
6/10/19	4.5	4.2	-6.67
6/17/19	4.5	4.3	-4.44
6/24/19	4.5	4.5	0.00
Absolute Value of Mean Percent Differences (AB)		**3.97**	
Standard Deviation of Absolute Value of Mean Percent Differences (AS)		**2.40**	
Precision (CV%)		**3.32**	
Signed Bias (%)		**-5.15**	
Upper 95% Probability Limit		**0.74**	
Lower 95% Probability Limit		**-8.68**	

Table 4-9: 2019 CO 1-Point Quality Control Checks: Site #1 (continued)			
Date	**Known Concentration (ppb)**	**DAS-Indicated Concentration (ppb)**	**Percent Difference (Δ %)**
7/1/19	4.5	4.6	2.22
7/8/19	4.5	4.7	4.44
7/15/19	4.5	4.8	6.67
7/15/19	7.5	7.7	2.67
7/15/19	7.5	7.3	-2.67
7/22/19	4.5	4.4	-2.22
7/29/19	4.5	4.5	0.00
8/5/19	4.5	4.4	-2.22
8/12/19	4.5	4.6	2.22
8/19/19	4.5	4.6	2.22
8/26/19	4.5	4.7	4.44
9/2/19	4.5	4.7	4.44
9/5/19	7.5	7.6	1.33
9/5/19	7.5	7.4	-1.33
9/9/19	4.5	4.4	-2.22
9/16/19	4.5	4.3	-4.44
9/23/19	4.5	4.4	-2.22
9/24/19	4.5	4.4	-2.22
Absolute Value of Mean Percent Differences (AB)		**2.79**	
Standard Deviation of Absolute Value of Mean Percent Differences (AS)		**1.55**	
Precision (CV%)		**4.15**	
Signed Bias (%)		**±3.42**	
Upper 95% Probability Limit		**6.69**	
Lower 95% Probability Limit		**-5.65**	

Table 4-9: 2019 CO 1-Point Quality Control Checks: Site #1 (continued)			
Date	**Known Concentration (ppb)**	**DAS-Indicated Concentration (ppb)**	**Percent Difference (Δ %)**
10/7/19	4.5	4.5	0.00
10/14/19	4.5	4.5	0.00
10/21/19	4.5	4.5	0.00
10/28/19	4.5	4.6	2.22
11/4/19	4.5	4.5	0.00
11/11/19	4.5	4.7	4.44
11/12/19	7.5	7.5	0.00
11/12/19	7.5	7.3	-2.67
11/18/19	4.5	4.4	-2.22
11/25/19	4.5	4.5	0.00
12/2/19	4.5	4.4	-2.22
12/9/19	4.5	4.5	0.00
12/16/19	4.5	4.5	0.00
12/23/19	4.5	4.6	2.22
12/30/19	4.5	4.5	0.00
Absolute Value of Mean Percent Differences (AB)		**1.07**	
Standard Deviation of Absolute Value of Mean Percent Differences (AS)		**1.45**	
Precision (CV%)		**2.44**	
Signed Bias (%)		**±1.73**	
Upper 95% Probability Limit		**3.69**	
Lower 95% Probability Limit		**-3.45**	

EXHIBIT 2

MEMORANDUM

To: **Brad Sims and Terry Cirbo, ExxonMobil Oil Corporation**

From: **Jim Donaldson and Reshawn George, Trinity Consultants, Inc.**

Date: **October 13, 2023**

RE: **Carbon Monoxide Dispersion Modeling for the FCC Unit**

Trinity Consultants, Inc. (Trinity) performed in early July of this year a dispersion modeling analysis for emissions of carbon monoxide (CO) from the fluidized catalytic cracking unit (FCC Unit) at the ExxonMobil Oil Corporation (ExxonMobil) refinery near Joliet, Illinois (Joliet facility) to determine conservatively the ground level concentrations of CO at various emission rates during startup conditions for comparison to the national ambient air quality standards (NAAQS). As described below, based on model results, emissions during startup operations of ExxonMobil's FCC Unit do not cause an exceedance of the CO NAAQS.

The following methodology and conditions were used in the dispersion model:

The current U.S. EPA regulatory model, AERMOD (version 22112) was used, as incorporated within Trinity's *BREEZE™ AERMOD Pro* software, in conjunction with the following guidance documents:

- U.S. EPA's *Guideline on Air Quality Models* 40 CFR 51, Appendix W (Revised, January 17, 2017);
- U.S. EPA's *AERMOD Implementation Guide* (Revised August 2019); and
- U.S. EPA's *New Source Review Workshop Manual* (Draft, October 1990);

The Building Profile Input Program (BPIP) with Plume Rise Model Enhancements (PRIME) (version 04274) was used to determine the building downwash characteristics for each stack;
In all modeling input and output files, the locations of the emission source, structures, and receptors were represented in the Universal Transverse Mercator (UTM) coordinate system in UTM Zone 16;
All model objects were defined in the North American Datum of 1983 (NAD83);
Trinity used a variable-density, circular Cartesian receptor grid to determine the extent of the significant impact area (SIA):

- Property line receptors with a spacing of 50 meters
- 100-meter spacing, extending from the property line to approximately 4,000 meters from the facility center
- 500-meter spacing, from 4,000 meters to approximately 6,500 meters from the facility center
- 1,000-meter spacing, from 6,500 meters to approximately 15,000 meters from the facility center
- 2,500-meter spacing, from 15,000 meters to approximately 50,000 meters from the facility center

The terrain elevation for each receptor point, emission source, and structure was determined using the AERMOD terrain processor, AERMAP (version 18081);
The meteorological data used for this modeling demonstration were obtained from the Midway International Airport, located in Chicago, IL.

Trinity Consultants

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MEMORANDUM

- In 2017, there is a significant amount of missing met data between June and September. Therefore, the data were pre-processed for AERMOD using AERMET (version 19191) for the years 2012 through 2016, as recommended by Jeff Sprague of Illinois EPA in a May 18, 2020 email to ExxonMobil.
- One-minute wind data were processed using the AERMINUTE program (version 15272) and input to AERMET (version 19191)
- The regulatory default ADJ_U* option was selected in AERMET

The FCC Unit was modeled at an emission rate of 2,000 ppm, which represents maximum CO concentrations under past startup conditions measured by the unit's continuous emission monitoring system (CEMS) as reported to agencies in periodic compliance reports.

- The FCC Unit stack was modeled at its height of 250 feet, diameter of 14 feet, average temperature of 141 °F, and maximum flow rate of 69 feet per second, resulting in a CO emission rate of 4,902 pounds per hour

The maximum modeled ground level impacts for CO under these conditions are shown in the table below:

CO Modeled Concentration	Averaging Period	Maximum impact (ppm)*	NAAQS (ppm)	Percent of NAAQS	Max Receptor UTM Easting (m)	Max Receptor UTM Northing (m)
2,000 ppm	1-hr	0.94	35	2.69%	401700	4586300
	8-hr	0.49	9	5.39%	401300	4586500

*Summary model results attached. AERMOD outputs are in terms of $\mu g/m^3$, aproximately 1,165 x the value of CO in terms of ppm

Based on these modeled results, operation of the FCC during startup conditions is not expected to cause an exceedance of the CO NAAQS.

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MEMORANDUM

Figure 1 – Summary of Highest 1-Hour Results

```
                                 ** CONC OF CO       IN MICROGRAMS/M**3                           **

                                                          DATE                                                                NETWORK
GROUP ID                          AVERAGE CONC      (YYMMDDHH)           RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS    1095.43296  ON 12080307: AT (  401700.00,  4586300.00,   164.03,   164.03,   0.00)  DC

 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
 *** AERMOD - VERSION 22112  ***   ***  ExxonMobil - Joliet, Illinois                                      ***       09/22/23
 *** AERMET - VERSION  19191 ***   ***  CO Modeling - Year 2012-2016                                       ***       17:34:51
                                                                                                                     PAGE 179
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of           0 Fatal Error Message(s)
 A Total of           3 Warning Message(s)
 A Total of         352 Informational Message(s)

 A Total of       43848 Hours Were Processed

 A Total of          86 Calm Hours Identified

 A Total of         266 Missing Hours Identified (  0.61 Percent)

    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***

    ********   WARNING MESSAGES   ********
 ME W186    7188       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187    7188       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
 OU W565    7194       OUPLOT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE

    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

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MEMORANDUM

Figure 2 – Summary of Highest 8-Hour Results

```
                         ** CONC OF CO       IN MICROGRAMS/M**3                    **

                                                 DATE                                                                NETWORK
GROUP ID                        AVERAGE CONC     (YYMMDDHH)           RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS     565.23515  ON 12102516: AT (  401300.00,  4586500.00,   159.02,   159.02,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
? *** AERMOD - VERSION 22112  ***   ***  ExxonMobil - Joliet, Illinois                                    ***       09/22/23
 *** AERMET - VERSION  19191 ***   ***  CO Modeling - Year 2012-2016                                     ***       17:46:51
                                                                                                                  PAGE 179
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            3 Warning Message(s)
 A Total of          352 Informational Message(s)

 A Total of        43848 Hours Were Processed

 A Total of           86 Calm Hours Identified

 A Total of          266 Missing Hours Identified (  0.61 Percent)


    ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186    7188       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187    7188       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
 OU W565    7194       OUPLOT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE

    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

Trinity Consultants

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Exhibit 6

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R 23-18(A)
AMENDMENTS TO 35 ILL. ADM. CODE	)	(Rulemaking – Air)
PARTS 201, 202, AND 212	)	

NOTICE OF FILING

TO: Mr. Don A. Brown,
Clerk of the Board
Illinois Pollution Control Board
100 West Randolph Street,
Suite 11-500
Chicago, Illinois 60601

Timothy Fox
Chloe Salk
Hearing Officers
Illinois Pollution Control Board
60 East Van Buren Street, Suite 630
Chicago, Illinois 60605

(SEE PERSONS ON ATTACHED SERVICE LIST)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board, **AMERICAN PETROLEUM INSTITUTE'S INITIAL RESPONSE TO ILLINOIS EPA'S COMMENT,** copies of which, are hereby served upon you.

Respectfully submitted,

AMERICAN PETROLEUM INSTITUTE,

By: **/s/** Alec Messina
One of its Attorneys

Dated: December 1, 2023

Alec Messina
HEPLERBROOM, LLC
4340 Acer Grove Drive
Springfield, Illinois 62711
Alec.Messina@helperbroom.com
(217) 528-3674

CERTIFICATE OF SERVICE

I, the undersigned, on oath state the following: That I have served the attached **INITIAL RESPONSE TO ILLINOIS EPA'S COMMENT**, via electronic mail upon:

Mr. Don A. Brown
Clerk of the Board
Illinois Pollution Control Board
100 West Randolph Street, Suite 11-500
Chicago, Illinois 60601
don.brown@illinois.gov

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That the number of pages in the email transmission is 5.

That the email transmission took place before 5:00 p.m. on December 1, 2023.

Date: December 1, 2023

/s/ Alec Messina
Alec Messina

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	**)**	
	)	
AMENDMENTS TO 35 ILL. ADM. CODE	**)**	**R 23-18(A)**
PARTS 201, 202, AND 212	**)**	**(Rulemaking – Air)**

API'S INITIAL RESPONSE TO ILLINOIS EPA'S COMMENT

NOW COMES Petitioner, the AMERICAN PETROLEUM INSTITUTE ("API"), by and through its undersigned attorney, pursuant to 35 Ill. Adm. Code 101.500, hereby submits to the Illinois Pollution Control Board ("Board") its Initial Response to the Illinois Environmental Protection Agency's ("Illinois EPA") Comment, stating as follows:

1. On August 7, 2023, API filed its Proposal in this sub-docket rulemaking.

2. The First Hearing in this sub-docket was held on September 27, 2023, at which API's witness presented testimony in support of API's Proposal.

3. On October 23, 2023, Illinois EPA filed a comment in this sub-docket.

4. In its filing, Illinois EPA included numerous comments as to each of the five regulatory proposals and requested that the Board solicit additional information from each of the rulemaking proponents.

5. On November 1, 2023, the Second Hearing in this sub-docket was held. At the Second Hearing, the Hearing Officer set December 1, 2023 as the deadline for filing initial responses to Illinois EPA's Comment.

6. After the Second Hearing, API has held, and continues to hold, discussions with its impacted members regarding responding to Illinois EPA's requests for information.

7. API also requested a meeting with Illinois EPA to discuss its requests for information as to API. That meeting is currently scheduled for December 6, 2023.

8. API will have a better sense of what information it intends to provide in response to Illinois EPA's Comment after the meeting with Illinois EPA and any subsequent follow-up discussions with Illinois EPA.

9. API reserves the right to file a supplemental Response to Illinois EPA's Comment.

WHEREFORE, for the above and foregoing reasons, the American Petroleum Institute hereby respectfully submits its Initial Response to the Illinois Environmental Protection Agency's Comment.

Respectfully submitted,

AMERICAN PETROLEUM INSTITUTE,

Dated: December 1, 2023

By: /s/ *Alec Messina*
One of Its Attorneys

Alec Messina
HEPLERBROOM, LLC
4340 Acer Grove Drive
Springfield, Illinois 62711
Alec.Messina@heplerbroom.com
(217) 528-3674

Exhibit 7

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R 23-18(A)
AMENDMENTS TO 35 ILL. ADM. CODE PARTS 201, 202, AND 212	)	(Rulemaking – Air)
	)	

NOTICE OF FILING

TO: Mr. Don A. Brown,
Clerk of the Board
Illinois Pollution Control Board
60 East Van Buren Street,
Suite 630
Chicago, Illinois 60605

Timothy Fox
Chloe Salk
Hearing Officers
Illinois Pollution Control Board
60 East Van Buren Street, Suite 630
Chicago, Illinois 60605

(SEE PERSONS ON ATTACHED SERVICE LIST)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board, **ENTRY OF APPEARANCE on behalf of CITGO PETROLEUM CORPORATION** and **AMERICAN PETROLEUM INSTITUTE AND CITGO'S SUPPLEMENTAL RESPONSE TO ILLINOIS EPA'S COMMENT,** copies of which, are hereby served upon you.

Respectfully submitted,

AMERICAN PETROLEUM INSTITUTE,
CITGO PETROLEUM CORPORATION,

By: **/s/** Alec Messina
One of its Attorneys

Dated: March 15, 2024

Alec Messina
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CERTIFICATE OF SERVICE

I, the undersigned, on oath state the following: That I have served the attached **APPEARANCE and SUPPLEMENTAL RESPONSE TO ILLINOIS EPA'S COMMENT**, via electronic mail upon:

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Clerk of the Board
Illinois Pollution Control Board
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Chicago, Illinois 60605
don.brown@illinois.gov

Timothy Fox
Chloe Salk
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That my email address is Alec.Messina@heplerbroom.com

That the number of pages in the email transmission is 101.

That the email transmission took place before 5:00 p.m. on March 15, 2024.

Date: March 15, 2024

/s/ Alec Messina
Alec Messina

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
	)	
	)	R 23-18(A)
AMENDMENTS TO 35 ILL. ADM. CODE	)	(Rulemaking – Air)
PARTS 201, 202, AND 212	)	

ENTRY OF APPEARANCE OF ALEC MESSINA

NOW COMES Alec Messina, of the law firm HEPLERBROOM, LLC, and hereby enters his appearance in this matter on behalf of CITGO PETROLEUM CORPORATION.

Respectfully Submitted,

By: /s/ *Alec Messina*

DATE: March 15, 2024

Alec Messina
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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	**)**	
	)	
AMENDMENTS TO 35 ILL. ADM. CODE	**)**	**R 23-18(A)**
PARTS 201, 202, AND 212	**)**	**(Rulemaking – Air)**

THE AMERICAN PETROLEUM INSTITUTE'S AND CITGO'S SUPPLEMENTAL RESPONSE TO ILLINOIS EPA'S COMMENT

The AMERICAN PETROLEUM INSTITUTE ("API") and CITGO PETROLEUM CORPORATION ("CITGO"), by and through its undersigned attorney, pursuant to the March 6, 2024 Notice of Hearing, hereby submits to the Illinois Pollution Control Board ("Board") their Supplemental Response to the Illinois Environmental Protection Agency's ("Illinois EPA" or "Agency") October 23, 2023 Comment.

I. INTRODUCTION

On October 23, 2023, Illinois EPA filed a comment in this sub-docket requesting that the Board solicit additional information from the rulemaking proponents. Illinois EPA's Comments, P.C. #5, R 23-18(A), at 27 (Oct. 23, 2023) (hereinafter "Illinois EPA's Comment"). A Motion for Additional Hearing was filed by the Attorney General's Office, requesting that a third hearing be scheduled in this matter to address any additional information that the rulemaking proponents may submit in response to Illinois EPA's Comment. Motion for Additional Hearing, PCB R 23-18(A) (October 26, 2023). The Board granted the motion on November 16, 2023. API filed its Initial Response to Illinois EPA's Comment on December 1, 2023. API's Initial Response to Illinois EPA's Comment, P.C. #9 (Dec. 1, 2023). API and CITGO hereby incorporate by reference API's Initial Response to Illinois EPA's Comment into this Supplemental Response. The Third Hearing is scheduled for April 15, 2024. This Supplemental Response to Illinois EPA's

Comment is timely submitted pursuant to the March 6, 2024 Notice of Hearing. Notice of Hearing, PCB R 23-18(A) (Mar. 6, 2024).

II. RESPONSES TO ILLINOIS EPA'S DATA REQUESTS

In its Comment, Illinois EPA stated that the emissions impact from API's alternative emission limit ("AEL") Proposal will vary by source because each of the sources are "differently sized, configured and operated." Illinois EPA's Comment at 12. Illinois EPA also stated that modeling to demonstrate that API's Proposal will not result in an air quality impact from the refineries' startup and hot standby events would be necessary to submit any revisions adopted by the Board to the United States Environmental Protection Agency ("USEPA") for approval. *Id*. at 12-13. API addresses Illinois EPA's data requests as to ExxonMobil, CITGO, and Marathon below.

A. EXXONMOBIL

As to ExxonMobil Oil Corporation ("ExxonMobil"), in general, Illinois EPA requested additional information regarding the worst-case carbon monoxide ("CO") emissions that take place during startup or hot standby events, as well as the need for Illinois EPA to further evaluate the modeling previously performed by ExxonMobil. As acknowledged by Illinois EPA, ExxonMobil performed a modeling exercise in 2023 and included a report of the modeling as Exhibit 2 to API's First Post-Hearing Comment. Exhibit 2, API's First Post-Hearing Comment, PCB R 23-18(A) (Oct. 18, 2023). Based on the requests included in Illinois EPA's Comment, as well as a meeting between API and Illinois EPA in December 2023, ExxonMobil updated its initial modeling demonstration. ExxonMobil's updated model inputs and results were then reviewed with Illinois EPA during a subsequent meeting. At this meeting, Illinois EPA characterized ExxonMobil's modeling demonstration as conservative.

Both the initial modeling and updated modeling demonstrate that the startups of the FCCU at ExxonMobil's refinery in Channahon, Illinois have not caused exceedances of the carbon monoxide ("CO") National Ambient Air Quality Standard ("NAAQS"), both the 1-hour and 8-hour standards. Additionally, as demonstrated by the results of the updated modeling, startups since 2017 with FCCU regenerator oxygen monitoring and control to comply with the startup standards in 40 CFR Part 63, Subpart UUU (which are proposed by API as its AEL in Section 216.361) have greatly reduced CO emissions and the ambient impacts. API is hereby submitting on behalf of ExxonMobil a report as to the updated modeling performed, which is attached hereto as Exhibit 1.

B. CITGO

As to CITGO Petroleum Corporation ("CITGO"), in general, Illinois EPA requested additional information regarding the worst-case CO emissions that take place during startup or hot standby events. In response to Illinois EPA's Comment and subsequent discussions with Illinois EPA, CITGO has reviewed emissions from its FCCU startup events to determine maximum hourly CO concentrations and emission rates, which were then used to develop statistical worst-case scenarios for both the 1-hour and 8-hour CO NAAQS. Additionally, atmospheric dispersion modeling of the statistical worst-case scenarios was conducted. The results of the modeling demonstrate that even worst-case CO emissions from the FCCU during startup do not have a significant impact on ambient air quality. CITGO is hereby submitting its narrative response to Illinois EPA's request for additional information, which is attached hereto as Exhibit 2. CITGO is also submitting a report as to the modeling performed, which is attached hereto as Exhibit 3.

C. MARATHON

As to Marathon Petroleum Company LP ("Marathon"), in general, Illinois EPA requested additional information regarding the worst-case CO emissions that take place during startup or hot standby events, as well as additional information in relation to the previously performed monitoring at the Robinson refinery. In response to Illinois EPA's Comment and subsequent discussions with Illinois EPA, Marathon has further analyzed its monitoring data. The monitoring demonstrates that there was no instance over four years of any readings over 15% of the 8-hour CO NAAQS and that the max 1-hour was approximately 5% of CO NAAQS. The results of the monitoring demonstrate that the short increases in CO emissions during FCCU startup events do not result in NAAQS violations nor any measurable increase in ambient CO, and therefore have little to no measurable impact on ambient air quality. API is hereby submitting on behalf of Marathon a FCCU Startup and CO Monitor Data Summary, which is attached hereto as Exhibit 4.

III. API'S PROPOSED AEL LANGUAGE

API hereby proposes to revise its AEL in proposed Section 216.361(d) to include language making the proposed AEL applicable to three of the four refineries in Illinois – ExxonMobil's refinery in Channahon, CITGO's refinery in Lemont, and Marathon's refinery in Robinson. API's AEL Proposal filed in August 2023 discussed the potential for increased CO emissions during FCCU startup and hot standby events at all four refineries. Based on subsequent discussions, it has been determined that an AEL is not needed at this time as to WRB Refining LP's FCCU located at its refinery in Wood River, Illinois.

API proposes to revise new Section 216.361(d) as follows:

d) For the petroleum refinery facilities located in Channahon, Lemont, and Robinson, Illinois, despite subsections (a) through (c), during periods of startup and hot standby, ~~any new or existing~~ petroleum catalytic cracking units must comply either with subsections (a) through (c) or the alternate non-numerical

> limitation for these operating modes in 40 CFR 63 Subpart UUU Tables 9, 10, 14, and 41 and 40 CFR 63.1565(a)(5), 40 CFR 63.1570(c) and (f), 40 CFR 63.1572(c) and 40 CFR 63.1576(a)(2) and (d), incorporated by reference in Section 216.104.

In addition to adding the language at the beginning of the provision limiting the applicability of the AEL, API also proposes to remove the language of "any new or existing" in order to make the provision more streamlined. The above language also reflects the non-substantive revisions previously proposed by the Board and JCAR in this proceeding. API requests that the Board adopt API's proposed AEL language in Section 216.361(d) above along with API's proposed revisions to the definitions and incorporations by reference provisions in Sections 216.103 and 216.104.

IV. RECENT D.C. CIRCUIT COURT OF APPEALS' DECISION

Lastly, the Board should be aware of the recently issued decision in *Environmental Committee of the Florida Electric Power Coordinating Group, Inc. v. EPA, et al*. The case was a result of several petitions for review filed as to USEPA's startup, shutdown, and malfunction ("SSM") State Implementation Plan ("SIP") Call. On March 1, 2024, the U.S. Court of Appeals for the District of Columbia ("D.C. Circuit") issued its decision and vacated USEPA's SSM SIP Call with respect to several types of SSM SIP provisions. *Envir. Comm. Fl. Elec. Power Coordinating Group v. EPA*, No. 15-1239, page 68 (D.C. Cir. Mar. 1, 2024). Illinois' SSM provisions, which were repealed by the Board in PCB R 23-18, fell under at least one of these types of SSM provisions as to which the SIP Call was vacated. As such, the basis for the Board's repeal of Illinois' SSM provisions in PCB R 23-18, i.e., USEPA's SIP Call, has been vacated. Nevertheless, API urges the Board to move forward with this sub-docket proceeding and grant the relief requested by API.

V. CONCLUSION

The additional information hereby submitted as to ExxonMobil, CITGO, and Marathon in response to Illinois EPA's Comment demonstrate that FCCU startup and hot standby events do not result in violations of the CO NAAQS or any adverse impacts on air quality. API and CITGO hereby respectfully submit their Supplemental Response to Illinois EPA's Comment and request that the Board adopt API's AEL Proposal.

Respectfully submitted,

AMERICAN PETROLEUM INSTITUTE
and CITGO PETROLEUM CORP.,

Dated: March 15, 2024

By: /s/ Alec Messina
One of Their Attorneys

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EXHIBIT 1

MEMORANDUM

To: **Brad Sims and Terry Cirbo, ExxonMobil Oil Corporation**

From: **Jim Donaldson and Reshawn George, Trinity Consultants, Inc.**

Date: **March 7, 2024**

RE: **Carbon Monoxide Dispersion Modeling for the FCC Unit**

Trinity Consultants, Inc. (Trinity) performed a revised dispersion modeling analysis for emissions of carbon monoxide (CO) from the fluidized catalytic cracking unit (FCC Unit) at the ExxonMobil Oil Corporation (ExxonMobil) refinery near Joliet, Illinois (Joliet facility) to determine conservatively the ground level concentrations of CO at various emission rates during startup conditions for comparison to the national ambient air quality standards (NAAQS). The revised dispersion model inputs were provided by ExxonMobil in response to Illinois Environmental Protection Agency's (Agency) written comments and subsequent Agency discussions. As described below, based on original and revised model results, emissions during startup operations of ExxonMobil's FCC Unit do not cause an exceedance of the CO NAAQS.

The following methodology and conditions were used in the dispersion model:

The current U.S. EPA regulatory model, AERMOD (version 23132) was used, as incorporated within Trinity's *BREEZE™ AERMOD Pro* software, in conjunction with the following guidance documents:

- U.S. EPA's *Guideline on Air Quality Models* 40 CFR 51, Appendix W (Revised, January 17, 2017);
- U.S. EPA's *AERMOD Implementation Guide* (Revised August 2019); and
- U.S. EPA's *New Source Review Workshop Manual* (Draft, October 1990);

The Building Profile Input Program (BPIP) with Plume Rise Model Enhancements (PRIME) (version 04274) was used to determine the building downwash characteristics for each stack;
In all modeling input and output files, the locations of the emission source, structures, and receptors were represented in the Universal Transverse Mercator (UTM) coordinate system in UTM Zone 16;
All model objects were defined in the North American Datum of 1983 (NAD83);
Trinity used a variable-density, circular Cartesian receptor grid to determine the extent of the significant impact area (SIA):

- Property line receptors with a spacing of 50 meters
- 100-meter spacing, extending from the property line to approximately 4,000 meters from the facility center
- 500-meter spacing, from 4,000 meters to approximately 6,500 meters from the facility center
- 1,000-meter spacing, from 6,500 meters to approximately 15,000 meters from the facility center
- 2,500-meter spacing, from 15,000 meters to approximately 50,000 meters from the facility center
- The terrain elevation for each receptor point, emission source, and structure was determined using the AERMOD terrain processor, AERMAP (version 18081);

The meteorological data used for this modeling demonstration were obtained from the Midway International Airport, located in Chicago, Illinois.

- Met data were pre-processed for AERMOD using AERMET (version 23132) for the years 2018 through 2022.
- One-minute wind data were processed using the AERMINUTE program (version 15272) and input to AERMET (version 23132)

EXHIBIT 1

MEMORANDUM

- The regulatory default ADJ_U* option was selected in AERMET

The FCC Unit was modeled at two sets of conditions. The first model run ("4,900 lb/hr") is a repeat of the model run addressed in the October 13, 2023 Trinity memorandum using the updated meteorological data set provided by the Agency as a follow-up to the above-mentioned discussions (replacing met data for the years 2012-2016 with years 2018-2022). As the Agency wanted ExxonMobil to look back to at least two historical startups involving refractory repair, ExxonMobil expanded the lookback beyond 2017 to 2013. The second model run ("35,200 lb/hr"), represents the highest single hour emission rate which occurred during the June 7, 2013 startup, with modeling based on measurements made with its regulatory continuous emission monitoring system (CEMS) and FCC stack temperature and flow measurements during the event. For purposes of modeling the longer eight-hour (8-hr) averaging period, it was conservatively assumed that the conditions of the highest single hour were sustained over the eight hours.

The stack dimensions are a height of 250 feet and diameter of 14 feet. For the first model run (repeat), the average stack temperature was 141 °F, stack concentration was 2,000 ppm and maximum flow rate was 69 feet per second, resulting in a CO emission rate of 4,902 pounds per hour. For the second model run, the average stack temperature was 157 °F, stack concentration was 43,800 ppm, and maximum flow rate was 137 feet per second, resulting in a CO emission rate of 35,200 pounds per hour.

The maximum modeled ground level impacts for CO under these conditions are shown in the table below:

CO Modeled Emission Rate	Averaging Period	Maximum impact (ppm)*	NAAQS (ppm)	Percent of NAAQS	Max Receptor UTM Easting (m)	Max Receptor UTM Northing (m)
4,900 lb/hr	1-hr	0.97	35	2.77%	402100	4585200
	8-hr	0.47	9	5.18%	401300	4586400
35,200 lb/hr	1-hr	4.73	35	13.51%	402500	4585000
	8-hr	1.78	9	19.75%	401200	4586200

*Summary model results attached. AERMOD outputs are in terms of µg/m^3, aproximately 1,165 × the value of CO in terms of ppm

Based on these modeled results coupled with Illinois EPA ambient monitor data (https://epa.illinois.gov/topics/air-quality/outdoor-air/air-monitoring/air-quality-reports.html), operation of the FCC during startup conditions is not expected to cause an exceedance of the CO NAAQS.

Figure 1 – Summary of Highest 1-Hour Results at 4,900 Lb/Hr Emission Rate

MEMORANDUM

```
                                    *** THE SUMMARY OF HIGHEST  1-HR RESULTS ***

                        ** CONC OF CO       IN MICROGRAMS/M**3                          **

                                                    DATE                                                              NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS    1128.88178  ON 21010611: AT (  402100.00,  4585200.00,    161.69,    161.69,     0.00)  DC

 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
? *** AERMOD - VERSION 23132  ***   ***  ExxonMobil - Joliet, Illinois                                  ***        03/06/24
 *** AERMET - VERSION  23132 ***   ***  CO Modeling - Year 2018-2022                                    ***        11:41:23
                                                                                                                  PAGE 179
 *** MODELOPTs:     RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of           0 Fatal Error Message(s)
 A Total of           3 Warning Message(s)
 A Total of         213 Informational Message(s)

 A Total of       43824 Hours Were Processed

 A Total of          75 Calm Hours Identified

 A Total of         138 Missing Hours Identified (  0.31 Percent)

    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***

    ********   WARNING MESSAGES   ********
 ME W186     7188       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187     7188       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
 OU W565     7194       OUPLOT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE

    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

MEMORANDUM

Figure 2 – Summary of Highest 8-Hour Results at 4,900 Lb/Hr Emission Rate

```
                                ** CONC OF CO       IN MICROGRAMS/M**3                        **

                                                      DATE                                                                  NETWORK
GROUP ID                              AVERAGE CONC     (YYMMDDHH)            RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS     543.61957  ON 21031016: AT (  401300.00,  4586400.00,   163.79,   163.79,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
ᵽ *** AERMOD - VERSION 23132  ***   ***  ExxonMobil - Joliet, Illinois                                    ***       03/06/24
 *** AERMET - VERSION  23132 ***   ***  CO Modeling - Year 2018-2022                                     ***       11:56:15
                                                                                                                  PAGE 179
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            3 Warning Message(s)
 A Total of          213 Informational Message(s)

 A Total of        43824 Hours Were Processed

 A Total of           75 Calm Hours Identified

 A Total of          138 Missing Hours Identified (  0.31 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186    7188       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187    7188       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
 OU W565    7194       OUPLOT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE

    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

MEMORANDUM

Figure 3 – Summary of Highest 1-Hour Results at 35,200 Lb/Hr Emission Rate

```
                                   *** THE SUMMARY OF HIGHEST  1-HR RESULTS ***

                         ** CONC OF CO       IN MICROGRAMS/M**3                       **

                                                  DATE                                                          NETWORK
GROUP ID                         AVERAGE CONC     (YYMMDDHH)          RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)   OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS    5510.01298  ON 21010611: AT (  402500.00,  4585000.00,   163.63,   163.63,   0.00)  DC

 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
? *** AERMOD - VERSION 23132  ***   ***  ExxonMobil - Joliet, Illinois                               ***        03/06/24
 *** AERMET - VERSION  23132 ***   ***  CO Modeling - Year 2018-2022                                 ***        11:11:04
                                                                                                               PAGE 179
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of           0 Fatal Error Message(s)
 A Total of           3 Warning Message(s)
 A Total of         213 Informational Message(s)

 A Total of       43824 Hours Were Processed

 A Total of          75 Calm Hours Identified

 A Total of         138 Missing Hours Identified (  0.31 Percent)

    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***

    ********   WARNING MESSAGES   ********
 ME W186    7188       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187    7188       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
 OU W565    7194       OUPLOT: Possible Conflict With Dynamically Allocated FUNIT     PLOTFILE

    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

MEMORANDUM

Figure 4 – Summary of Highest 8-Hour Results at 35,200 Lb/Hr Emission Rate

```
                                      *** THE SUMMARY OF HIGHEST  8-HR RESULTS ***

                              ** CONC OF CO       IN MICROGRAMS/M**3                          **

                                                  DATE                                                                NETWORK
GROUP ID                         AVERAGE CONC    (YYMMDDHH)            RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS    2070.94285  ON 22061916: AT (  401200.00,  4586200.00,   164.28,   164.28,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
 *** AERMOD - VERSION 23132  ***   ***  ExxonMobil - Joliet, Illinois                                    ***       03/06/24
 *** AERMET - VERSION  23132 ***   ***  CO Modeling - Year 2018-2022                                     ***       11:27:02
                                                                                                                   PAGE 179
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of           0 Fatal Error Message(s)
 A Total of           3 Warning Message(s)
 A Total of         213 Informational Message(s)

 A Total of       43824 Hours Were Processed

 A Total of          75 Calm Hours Identified

 A Total of         138 Missing Hours Identified (  0.31 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186    7188       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used          0.50
 ME W187    7188       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
 OU W565    7194       OUPLOT: Possible Conflict With Dynamically Allocated FUNIT      PLOTFILE

    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

Exhibit 8

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R 23-18(A)
AMENDMENTS TO 35 ILL. ADM. CODE	)	(Rulemaking – Air)
PARTS 201, 202, AND 212	)	

NOTICE OF FILING

TO: Mr. Don A. Brown,
Clerk of the Board
Illinois Pollution Control Board
60 East Van Buren Street,
Suite 630
Chicago, Illinois 60605

Timothy Fox
Chloe Salk
Hearing Officers
Illinois Pollution Control Board
60 East Van Buren Street, Suite 630
Chicago, Illinois 60605

(SEE PERSONS ON ATTACHED SERVICE LIST)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board, **AMERICAN PETROLEUM INSTITUTE'S AND CITGO PETROLEUM CORPORATION'S PRE-FILED QUESTIONS DIRECTED TO ILLINOIS EPA'S WITNESS,** copies of which, are hereby served upon you.

Respectfully submitted,

AMERICAN PETROLEUM INSTITUTE,
CITGO PETROLEUM CORPORATION,

By: **/s/** Alec Messina
One of their Attorneys

Dated: April 8, 2024

Alec Messina
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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	**)**	
	)	
AMENDMENTS TO 35 ILL. ADM. CODE	**)**	**R 23-18(A)**
PARTS 201, 202, AND 212	**)**	**(Rulemaking – Air)**

AMERICAN PETROLEUM INSTITUTE'S AND CITGO PETROLEUM CORPORATION'S PRE-FILED QUESTIONS DIRECTED TO ILLINOIS EPA'S WITNESS

The AMERICAN PETROLEUM INSTITUTE ("API") and CITGO PETROLEUM CORPORATION ("CITGO"), by and through their undersigned attorney, hereby submits to the Illinois Pollution Control Board ("Board") their Pre-Filed Questions Directed to the Illinois Environmental Protection Agency's ("Illinois EPA" or "Agency") Witness for the third hearing in this sub-docket rulemaking pursuant to the March 6, 2024 Notice of Hearing.

On August 7, 2023, API filed in this sub-docket rulemaking a Proposal for Regulations of General Applicability ("API's Proposal"). On March 15, API and CITGO filed a Supplemental Response to Illinois EPA's October 23, 2023 Comment. API and CITGO Supplemental Response, PC #15, PCB R 23-18(A) (Mar. 15, 2024). In the Supplemental Response, CITGO and API (on behalf of ExxonMobil Oil Corporation and Marathon Petroleum Company) submitted additional information and data in support of API's Proposal. On April 2, 2024, the Agency filed Pre-Filed Testimony of Rory Davis for the third hearing in this matter. In its Pre-filed Testimony, the Agency stated that, based on the additional technical support and justification for the amendments that API and CITGO have provided, "the Agency does not object to the adoption of the rule proposal as set forth in API's March 15, 2024, filing with the Board." Illinois EPA's Pre-filed Testimony, PCB R 23-18(A) at 15 (April 2, 2024). API's provides the following questions directed to Rory Davis based on the Agency's Pre-Filed Testimony filed on April 2, 2024.

QUESTIONS FOR RORY DAVIS

1. On page 15 of its Pre-Filed Testimony, the Agency stated that "[b]ased on the additional technical support and justification for the amendments that API has provided, the Agency does not object to adoption of the rule proposal as set forth in API's March 15, 2024, filing with the Board." API's and CITGO's March 15, 2024 filing included the most up-to-date proposed alternate emission limitation ("AEL") language in proposed Section 216.361(d), but did not set forth API's proposed revisions to Sections 216.103 and 216.104. Does the Agency also not object to API's proposal in relation to its proposed amendments to Sections 216.103 and 216.104?

2. API requests that the Agency elaborate on its statement that "the Agency does not object to adoption of the rule proposal."

    a. Does this statement imply that the Agency believes that USEPA's criteria for AEL are met as to API's proposal?

    b. Does this statement imply that the Agency' statement on page 12 of its October 23, 2023 comment (i.e., "Generally, the language proposed by API has significant issues.") has been resolved based upon API's and CITGO's March 15, 2024 responses and further review by the Agency?

    c. Is the Agency's statement based in part on review and comment of API's proposal by USEPA? If "yes," can the Agency describe the interactions with USEPA on API's proposal?

3. If API's proposal is adopted by the Board, does the Agency intend to submit API's AEL language to USEPA for approval as a State Implementation Plan ("SIP") revision?

4. Is the Agency aware of the U.S. Court of Appeals for the District of Columbia ("D.C. Circuit Court") decision issued on March 1, 2024, in *Environmental Committee of the Florida Electric Power Coordinating Group, Inc. v. EPA, et al.*?

    a. Has the Agency had any discussions with USEPA about the D.C. Circuit Court's decision? If so, can you summarize those discussions?

    b. Does the D.C. Circuit Court's decision potentially impact your response to Question #3 above? If "yes," how does it impact your response?

WHEREFORE, for the above and foregoing reasons, the American Petroleum Institute and CITGO Petroleum Corporation hereby respectfully submits their Pre-Filed Questions Directed to Illinois EPA's Witness for the third hearing in this matter.

Respectfully submitted,

AMERICAN PETROLEUM INSTITUTE &
CITGO PETROLEUM CORPORATION,

Dated: April 8, 2024

By: /s/ Alec Messina
One of Their Attorneys

Alec Messina
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Alec.Messina@heplerbroom.com
(217) 528-3674

CERTIFICATE OF SERVICE

I, the undersigned, on oath state the following: That I have served the attached **AMERICAN PETROLEUM INSTITUTE'S AND CITGO PETROLEUM CORPORATION'S PRE-FILED QUESTIONS DIRECTED TO ILLINOIS EPA'S WITNESS**, via electronic mail upon:

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Clerk of the Board
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That the number of pages in the email transmission is 6.

That the email transmission took place before 5:00 p.m. on April 8, 2024.

Date: April 8, 2024

/s/ Alec Messina
Alec Messina