State Office of Administrative Hearings

Kristofer S. Monson
Chief Administrative Law Judge

March 25, 2024

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Texas Commission on the Environment Quality

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RE: Docket Number 582-23-22762.TCEQ; Texas Commission on Environmental Quality No. 2023-0649-AIR; APPLICATION BY EXXON MOBIL CORPORATION TO AMEND AIR QUALITY PERMIT NO. 102982 IN BAYTOWN, HARRIS COUNTY, TEXAS

Dear Parties:

Please find attached a Proposal for Decision in this case. Any party may, within 20 days after the date of issuance of the PFD, file exceptions or briefs. Any replies to exceptions, briefs, or proposed findings of fact shall be filed within 30 days after the date of issuance on the PFD. 30 Tex. Admin. Code § 80.257.

All exceptions, briefs, and replies along with certification of service to the above parties and the ALJ shall be filed with the Chief Clerk of the TCEQ

electronically at http://www14.tceq.texas.gov/epic/eFiling/ or by filing an original and seven copies with the Chief Clerk of the TCEQ. Failure to provide copies may be grounds for withholding consideration of the pleadings.

CC: Service List

SOAH Docket No. 582-23-22762 **Suffix: TCEQ**

BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS

APPLICATION BY EXXON MOBIL CORPORATION TO AMEND AIR QUALITY PERMIT NO. 102982 IN BAYTOWN, HARRIS COUNTY, TEXAS

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PROPOSAL FOR DECISION

I. INTRODUCTION

Exxon Mobil Corporation (Applicant or Exxon) owns and operates an existing olefins plant in Baytown, Harris County, Texas, known as the Baytown Olefins Plant (BOP). On September 7, 2022, Exxon submitted an application (Application) to the Texas Commission on Environmental Quality (TCEQ or Commission) for authorization under Texas Clean Air Act (TCAA) section 382.0518, to amend its minor New Source Review (NSR) TCEQ Air Quality Permit No. 102982 (Permit 102982) to increase production at the 2X Unit at BOP.[1] The Executive Director (ED) of the TCEQ declared the Application administratively complete on

[1] Ex. APP-1 (Permit Amendment Application).

September 27, 2022.[2] On December 13, 2022, the ED made her Preliminary Determination recommending issuance of Draft Permit No. 102982 (the Draft Permit).[3]

The Draft Permit would authorize Exxon to construct a new furnace (Furnace XXI); a new decoke pot for the furnace; piping and equipment changes to distillation, compression, and recovery equipment; and increase the cooling water capacity of the existing cooling tower by adding new cells (collectively, Project Facilities).[4] The Draft Permit would authorize the Project Facilities to emit the following air contaminants: carbon monoxide (CO), Sulfur Dioxide (SO_2), Nitrogen Oxides (NO_x), Volatile Organic Compounds (VOCs), Particulate Matter (PM), PM with diameters of 10 microns or less (PM_{10}) and 2.5 microns or less ($PM_{2.5}$), Sulfuric Acid (H_2SO_4), and Ammonia (NH_3).[5]

Protestant Environment Texas (ET) opposes the Application. Protestant ET contends that the Application and Draft Permit fail to meet applicable federal and state Clean Air Act standards. More specifically, it argues that (1) Exxon should not be able to rely on a Plantwide Applicability Limit (PAL) Permit to avoid major NSR; (2) the Project Facilities do not meet the best available control technology (BACT) for PM, NH_3, or SO_2; and (3) Exxon failed to demonstrate that emissions from the source will not impermissibly cause or contribute to ambient air quality problems,

[2] Ex. ED-3 (ED Response to Comments) at 000034.

[3] Ex. APP-36 (Notice of Preliminary Decision).

[4] Ex. ED-5 at 000528; see also Ex. APP-RP1 (Parmley direct) at 14.

[5] Exs. APP-1 at EMC-00031-32; APP-37 (Final Draft Permit) at EMC-00808-810; Ex. ED-1 (Loughran direct) at 17.

specifically with regard to NO_x. Therefore, Protestant ET requests that the Application and associated Draft Permit be denied.[6]

Protestant Theresa Blackwood requests that the Commission continue to review the Application, and that neighbors be informed in advance of expansions and included in meetings where they can ask questions. In addition, she would like to be informed when incidents occur at the plant.[7]

Office of Public Interest Council (OPIC) finds that the Draft Permit has not adequately demonstrated that its 1-hour nitrogen dioxide (NO_2) emissions will be below the de minimis level of 7.5 micrograms per meter cubed and therefore recommends the Draft Permit be remanded to the ED for further technical review, including additional modeling. Alternatively, OPIC recommends that the permit be denied.

Exxon and the ED oppose Protestants' and OPIC's allegations and support the ED's Preliminary Decision to issue the Draft Permit based on the Application's representations.

For the reasons discussed below, the Administrative Law Judge (ALJ) recommends the TCEQ approve the Draft Permit.

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[6] Protestant ET's Closing Argument at 3-4.

[7] Protestant Theresa Blackwood Closing Argument at 3, 5.

A. BACKGROUND

The BOP 2X Unit contains eight furnaces and recovery equipment, as well as a cooling tower, a flare system, and other utilities. The unit processes ethane to produce ethylene and other products.[8] The BOP 2X Unit is part of a larger complex known as the Exxon Baytown Complex, which also includes a petroleum refinery and chemical plants.[9]

Exxon currently holds NSR Permit No. 3452, for operation of BOP as well as storage, transfer, and utility facilities; and NSR Permit No. 102982 for operation of the 2X Unit. The NSR Permit for the 2X Unit was issued on February 19, 2014, and has been amended once (November 9, 2016) and altered three times (June 7, 2016, May 2, 2019, and January 31, 2022).[10]

Permit 102982 currently authorizes the following pollutants: hazardous air pollutants, CO, NO_x, sulfuric acid mist, organic compounds, SO_2, NH_3, PM, PM_{10}, and $PM_{2.5}$.[11] BOP holds PALs for VOCs, NO_x, PM/PM_{10},/$PM_{2.5}$, SO_2, CO, and H_2SO_4 in Permit No. PAL6 issued on August 24, 2005. Exxon is not requesting an increase in a PAL for any of these criteria pollutants.[12]

[8] Ex. ED-5 at 000528.

[9] Tr. Vol. 1 at 45-46.

[10] Ex. APP-1.

[11] Ex. ED-1 at 14.

[12] Ex. APP-1.

B. PROCEDURAL HISTORY

The TCEQ received the Application on September 21, 2022. On September 27, 2022, the ED declared the Application administratively complete. On December 13, 2022, the ED determined the Application was technically complete, met all requirements for approval, and issued the Draft Permit.[13] On February 14, 2023, Applicant filed a request for direct referral to the State Office of Administrative Hearings (SOAH) for a contested case hearing pursuant to 30 Texas Administrative Code § 55.210.[14] On August 29, 2023, the TCEQ Chief Clerk filed the Administrative Record with SOAH. On September 25, 2023, the TCEQ Chief Clerk filed supplemental documentation to be included as part of the Administrative Record.

The preliminary hearing was held via Zoom videoconference September 28, 2023, before ALJs Rebecca Smith and Meitra Farhadi. At the preliminary hearing, Exxon offered the administrative record exhibits, public notice, and jurisdictional exhibits, as well as the Applicant's application materials. The ALJs admitted Exhibits AR-1 through AR-9, Exhibits APP-1 through APP-77, and Exhibits APP-A through APP-O into the evidentiary record during the preliminary hearing and determined that notice of the hearing was timely and adequate and that SOAH had jurisdiction over the proceeding. The parties to this proceeding were identified as: Applicant, the ED, OPIC, Protestant ET, and Protestant Theresa Blackwood.

[13] Ex. APP-36 (Notice of Preliminary Decision).

[14] Request for Direct Referral to the State Office of Administrative Hearings (filed July 5, 2023).

A prehearing conference was held on December 15, 2023, via Zoom videoconference, where ALJ Farhadi discussed hearing logistics and ruled on outstanding objections and motions to strike.

The hearing on the merits convened via Zoom videoconference before SOAH ALJ Farhadi on December 18, 2023, and concluded on December 19, 2023. The record closed on January 26, 2024, after parties submitted their final closing arguments and proposed findings of fact and conclusions of law.

C. APPLICABLE LAW

1. Standard of Review

The Application was filed after September 1, 2015; and TCEQ referred it under Texas Water Code section 5.557, which governs direct referral of environmental permitting cases to SOAH based on a request for a contested case hearing.[15] Therefore, this case is subject to Texas Government Code section 2003.047(i-1)-(i-3),[16] which provides:

> (i-1)[17] In a contested case regarding a permit application referred under Section … 5.557, Water Code, the filing with the office[18] of the application, the draft permit prepared by the executive director

[15] Tex. Water Code §§ 5.551(a), .557; *see* Tex. Health & Safety Code § 382.056(n) (requiring TCEQ to follow the procedures in Sections 5.556 and 5.557 of the Texas Water Code when considering a request for a public hearing for a permit under the Texas Clean Air Act).

[16] Acts 2015, 84th Leg., R.S., ch. 116 (S.B. 709), §§ 1 and 5, eff. Sept. 1, 2015.

[17] The demonstration described in Texas Government Code § 2003.047(i-1) will be referred to as the Prima Facie Demonstration.

[18] "Office" means the State Office of Administrative Hearings. Tex. Gov't Code § 2003.001(3).

> of the commission, the preliminary decision issued by the executive director, and other sufficient supporting documentation in the administrative record of the permit application establishes a prima facie demonstration that:
>
> (1) the draft permit meets all state and federal legal and technical requirements; and
>
> (2) a permit, if issued consistent with the draft permit, would protect human health and safety, the environment, and physical property.
>
> (i-2) A party may rebut a demonstration under Subsection (i-1) by presenting evidence that:
>
> (1) relates to a matter referred under Section 5.557, Water Code …; and
>
> (2) demonstrates that one or more provisions in the draft permit violate a specifically applicable state or federal requirement.
>
> (i-3) If in accordance with Subsection (i-2) a party rebuts a presumption established under Subsection (i-1), the applicant and the executive director may present additional evidence to support the draft permit.[19]

Although this law creates a presumption, sets up a method for rebutting that presumption, and shifts the burden of production on that rebuttal, it does not change the underlying burden of proof. Accordingly, the burden of proof remains with Applicant to establish by a preponderance of the evidence that the Application would not violate applicable state and federal requirements and that a permit, if issued

[19] *Accord* 30 Tex. Admin. Code § 80.17(c).

consistent with the Draft Permit, would protect human health and safety, the environment, and physical property.[20]

The Prima Facie Demonstration evidence in this case (including the Application, Draft Permit, and materials listed in Texas Government Code section 2003.047(i-1)) were admitted at the preliminary hearing.[21]

2. Federal Clean Air Act

The Environmental Protection Agency (EPA) sets primary and secondary National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants—SO_2, ozone, NO_2, CO, lead (Pb), and PM—and determines whether areas are meeting those standards (attainment areas) or not meeting standards (nonattainment areas).[22]

Primary standards are those the EPA Administrator determines are necessary, within an adequate margin of safety, to protect public health, including sensitive members of the population such as children, the elderly, and those individuals with preexisting health conditions.[23] Secondary NAAQS are those the Administrator determines are necessary to protect public welfare and the environment, including

[20] 30 Tex. Admin. Code § 80.17(a), (c).

[21] Exs. AR-1-AR-9, Exs. APP-1-APP-77, and Exs. APP-A-APP-O

[22] 42 U.S.C. §§ 7407-7409; 40 C.F.R. ch. I, subch. C, pt. 50.

[23] 42 U.S.C. § 7409(b)(1).

animals, crops, vegetation, visibility, and buildings, from any known or anticipated adverse effects associated with the presence of a contaminant in the ambient air.[24]

The federal Clean Air Act (CAA) requires operators to obtain a preconstruction permit before building a new facility or modifying an old one.[25] This process is called New Source Review (NSR) and is required whether the major source or modification is planned for an area where the NAAQS are exceeded (nonattainment areas) or are acceptable (attainment and unclassified areas).[26] There are three types of NSR permits: (1) Prevention of Significant Deterioration (PSD) permits, (2) Nonattainment NSR (NNSR) permits, and (3) minor NSR permits.[27] PSD permit requirements apply to a new major source, or to an established source making a major modification, in an area designated as in attainment or unclassifiable.[28] NNSR permit requirements apply to a new major source, or to an established source making a major modification, in a nonattainment area.[29] Minor NSR permit requirements apply to a new minor source, or to an established source making a minor modification, in either an attainment or nonattainment area.[30]

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[24] 42 U.S.C. § 7409(b)(2). Effects on welfare are defined to include effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, and visibility. 42 U.S.C. § 7602(h).

[25] *Envtl. Integrity Project v. EPA,* 969 F.3d 529, 535 (5th Cir. 2020).

[26] Ex. APP-RP-1 at 7; Ex. ED-1 at 12; 42 U.S.C. § 7407(d)(1)(A)(i)-(iii).

[27] Ex. ED-1 at 14-15.

[28] Ex. ED-1 at 15; 42 U.S.C. § 7471.

[29] Ex. ED-1 at 14-15.

[30] Ex. ED-1 at 15.

Each state bears the primary responsibility for establishing a set of rules referred to as the State Implementation Plan (SIP) to detail how the state will achieve, maintain, and enforce the NAAQS in compliance with the CAA.[31] TCEQ is authorized to administer the federal nonattainment and PSD permitting programs and has adopted rules to implement those programs.[32]

3. Texas Clean Air Act

The TCAA[33] authorizes the Commission to issue a permit to modify an existing facility that may emit air contaminants.[34] The TCAA defines a facility as a "discrete or identifiable structure, device, item, equipment, or enclosure that constitutes or contains a stationary source, including appurtenances other than emission control equipment."[35] Under the TCAA, TCEQ shall grant a permit to construct a facility if it finds:

> (1) the proposed facility for which a permit…is sought will use at least the Best Available Control Technology [BACT], considering the technical practicability and economic reasonableness of reducing or eliminating the emissions resulting from the facility; and

[31] 42 U.S.C. § 7407(a).

[32] Ex. ED-1 at 15.

[33] Tex. Health & Safety Code ch. 382.

[34] Tex. Health & Safety Code § 382.051(a)(1).

[35] Tex. Health & Safety Code § 382.003(6); *see also* 30 Tex. Admin. Code § 116.10(4).

(2) no indication that the emissions from the facility will contravene the intent of [TCAA], including protection of the public's health and physical property.[36]

If these requirements are not met, then the Commission may not grant the permit.[37]

Under TCEQ's rules—particularly 30 Texas Administrative Code § 116.111—an applicant for an air quality permit must include in its application information demonstrating that emissions from the facility will meet the requirements for BACT,[38] with consideration given to the technical practicability and economic reasonableness of reducing or eliminating the emissions from the facility.[39]

II. APPLICATION AND SCOPE

Exxon is requesting to amend Permit 102982 to add a ninth ethane cracking furnace (named "XXI") to eight existing furnaces (named "XXA, XXB, XXC, XXD, XXE, XXF, XXG, and XXH").[40] In addition to the new furnace, the project includes the addition of a new decoke pot for the furnace; piping and equipment changes to distillation, compression, and recovery equipment; and increases to the cooling water capacity of the existing cooling tower by adding new cells. Additionally, Permit

[36] Tex. Health & Safety Code § 382.0518(b).

[37] Tex. Health & Safety Code § 382.0518(d).

[38] 30 Tex. Admin. Code § 116.111(a)(2)(C).

[39] Tex. Health & Safety Code § 382.0518(b)(1).

[40] Ex. APP-1 at EMC-00051; Ex. APP-37 (Draft Permit) at EMC-00791; Ex. APP-38 (Draft Technical Review) at EMC-00812.

by Rule (PBR) Registration Nos. 166596, 168286, and 168893 are proposed to be incorporated by consolidation, and PBR Registration No. 146579 is proposed to be partially incorporated by consolidation with this amendment project.[41]

BOP is part of a larger Exxon chemical plant, and the chemical plant is a part of the even larger Exxon refinery and chemical plant complex. BOP is a Major Source under the CAA.[42]

Because the Application was a direct referral under 30 Texas Administrative Code section 55.210, the sole issue referred to SOAH to be addressed at hearing was whether the Application complies with all applicable statutory and regulatory requirements.[43] As indicated below, the Commission is required under the TCAA to issue a permit if the application demonstrates: (1) the proposed facility will use at least BACT, taking into account technical probability and financial reasonableness; and (2) no indication that the proposed facility's emissions will contravene the intent of the TCAA, including protection of the public's health and physical property.[44]

ED witness Christopher Loughran is a Technical Specialist in the Energy Section of the TCEQ's Air Permits Division who testified regarding the technical review of Exxon's application.[45] Mr. Loughran reviewed the Application and

[41] Ex. ED-1 at 14.

[42] Tr. Vol. 1 at 149; Ex. APP-38 at 00814.

[43] 30 Tex. Admin. Code § 55.210(b).

[44] Tex. Health & Safety Code § 382.0518(b).

[45] Ex. ED-1 at 10-12.

confirmed it was administratively complete and contained the appropriate technical information, assumptions, and calculations.[46] He also determined that the Application was subject to NSR review, that major NSR was not triggered by the Application, and that the Project Facilities would meet BACT standards.[47]

ED witness Chad Dumas is a Program Supervisor VII on the Air Dispersion Modeling Team, and he reviewed the audit for Exxon's air dispersion modeling for Permit 102982.[48] He was assisted in the audit by Margaret Eldredge, a Modeling & Assessment Specialist III on the Air Dispersion Modeling Team.[49] Mr. Dumas and Ms. Eldredge determined that Exxon's modeling methodology, model inputs, and source characterizations were appropriate; that the air quality levels resulting from the Proposed Facilities will be below the NAAQS, state property line standards and health effects screening levels; and therefore, that the anticipated air quality levels will be protective of the environment, physical property, and the health and welfare of the general public.[50]

Based on these findings, the ED determined that Exxon's proposed controls constitute BACT for all regulated pollutants, and the modeling analysis demonstrated that the proposed project will not cause or contribute to an exceedance of the NAAQS or have any adverse impacts on the public health or the environment.

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[46] Ex. ED-1 at 12-14.

[47] Ex. ED-1 at 14-17.

[48] Ex. ED-23 (Dumas direct) at 001186, 001188.

[49] Exs. ED-12 (Eldredge direct) at 000635-36; ED-23 at 001189.

[50] Exs. ED-12 at 000639, 000644-46; ED-23 at 001189-92.

Accordingly, the ED recommended the Draft Permit be issued, in accordance with Texas Health & Safety Code section 382.0518(b).[51]

A. FACILITIES

Protestant ET challenged the appropriate definition of "facility" to be used in this Application. They argued that the many sources of air pollution already present at the site should have been considered as part of this permit application. If they had been so considered, major NSR requirements would have been triggered.[52]

1. Exxon and ED's Position

The ED states that Staff reviews all permit applications for compliance with the CAA, the TCAA, and its rules implementing the TCAA. Mr. Loughran testified that the TCEQ has an "approved program to administer federal nonattainment and PSD permitting programs . . . and that major NSR applicability is determined as part of the application review."[53] Mr. Loughran explained that TCEQ defines a "Facility" as "a discrete or identifiable structure, device, item, equipment, or enclosure that constitutes or contains a stationary source, including appurtenances other than emission control equipment,"[54] while a "plant" more generally describes an industrial or manufacturing process and could include one or more facilities.[55]

[51] ED Closing Argument at 2, 15-16.

[52] Protestant ET Closing Argument at 5-7.

[53] Ex. ED-1 at 14.

[54] Ex. ED-1 at 12; *see also* Tex. Health & Safety Code § 382.003(6).

[55] Ex. ED-1 at 12.

Exxon applied for an amendment in accordance with 30 Texas Administrative Code Chapter 116, and the proposed amendment would be located at an existing major source which operates under PALs.[56] Mr. Loughran determined that minor NSR was appropriate for the Application.[57]

Exxon witness Mr. Parmley explained that the Project Facilities in the Application are the proposed Furnace XXI, decoking drum, cooling tower, and equipment component fugitives.[58] They were properly identified in accordance with TCEQ and EPA rules and guidance,[59] and were verified by the ED as being the only potential emission sources for the Application.[60] Furthermore, Exxon notes that Texas's federally approved SIP provides that the "term 'facility' shall replace the words 'emissions unit' in the referenced sections of the CFR."[61] Therefore, Mr. Parmley explained, identifying facilities means identifying any stationary equipment that generates air contaminants that may be released into the atmosphere. The point from which the air contaminant is released into the atmosphere is called the emission point by TCEQ and designated with a specific emission point number (EPN) in the permit application.[62]

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[56] Ex. ED-3.

[57] Ex. ED-1 at 15.

[58] Ex. APP-RP-1 at 14-15.

[59] Ex. APP-RP-1 at 18.

[60] Ex. ED-1 at 13.

[61] 30 Tex. Admin. Code § 116.160(c)(3).

[62] Ex. APP-RP-1 at 14.

2. Protestant's Position

Protestant ET notes that under the CAA definitions, the terms "source" and "facility" mean the same thing: all of the pollutant-emitting activities at a site. A "stationary source" is defined as "any building, structure, facility, or installation which emits or may emit a regulated NSR pollutant" and "[b]uilding, structure, facility, or installation means all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control) except the activities of any vessel."[63] Thus, Protestant ET states, the entire BOP constitutes a single "source" and also a single "facility" under the CAA.

In contrast, the Texas definition for "source" is a "point of origin of air contaminants".[64] The TCAA and TCEQ's rules define a "facility" as a "discrete or identifiable structure, device, item, equipment, or enclosure that constitutes or contains a stationary source, including appurtenances other than emission control equipment…"[65] Thus, unlike the federal definition, Texas defines both the terms "source" and "facility" as a single point source.

Protestant ET argues that the Texas definitions are only intended to apply to minor sources, and not to major industrial sites like the BOP. Doing so results in

[63] 40 CFR § 51.165(a)(1)(i)-(ii)(A).

[64] 30 Tex. Admin. Code § 116.10(15).

[65] Tex. Health & Safety Code § 382.003(6); 30 Tex. Admin. Code § 116.10(4).

minor NSR at a massive major existing source, thus allowing Exxon to disregard federal NSR requirements.[66]

3. OPIC's Position

OPIC recognizes that the federal definition of facility is more expansive and could include more than one source of emissions; however, given that EPA has approved TCEQ's SIP, OPIC does not agree with Protestant ET that the ED erred in applying the state definition of "facility" to this permit application process.[67]

4. ALJ's Analysis

While Protestant ET argues that the Texas definitions are only intended to apply to minor sources, and not to major industrial sites, it provides no authority to support the argument. In contrast, the evidence is undisputed that the TCAA defines "facility" as a single source and not all of the pollutant-emitting activities at a site; and that EPA has approved Texas's definition of "facility" in approving Texas's SIP.[68] For these reasons, the ALJ finds that the ED properly applied the TCAA definition of "facility" in reviewing the Application.

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[66] Protestant ET Closing Argument at 7.

[67] OPIC Closing Argument at 6.

[68] Tex. Health & Safety Code § 382.003(6).

B. FLARES

1. Exxon and ED's Position

Exxon stresses that the Application does not seek to add any new flares, nor does it seek to modify any existing flares. Therefore, emissions from existing flares are not a proper subject of analysis in this proceeding. Exxon witness Randy Parmley, an expert in TCEQ air quality permit applications, was the project director and professional engineer for this Application.[69] He testified that:

> [T]here will be no venting of emissions from proposed Furnace XXI or any of the other Project Facilities to the flares during routine operations, thus, the flares are not Project Facilities. Mr. Jackson's [Protestant ET's expert witness in combustion engineering and industrial processes] assumption is incorrect in that he appears to assume that off gases from proposed Furnace XXI during routine operations will be flared rather than recovered by the flare gas recovery system and routed to either the feedstock or the fuel gas system in a closed loop process. ExxonMobil is not seeking any increase in the emissions limits for any of the existing flares with the Application. Because the potential to emit ("PTE") of the flares will not change due to the Project, the existing flares will have to comply with their existing emission limits in the permit when proposed Furnace XXI is constructed and operated.[70]

In addition, Mr. Parmley notes that Permit 102982 currently requires continuous composition monitoring and continuous flow rate monitoring for the

[69] Ex. APP-RP-1 at 5, 7.

[70] Ex. APP-RP-1 at 18.

BOP 2X Unit flares, and that this will remain in place as reflected by the Draft Permit.[71]

ED witness Mr. Loughran testified that since Exxon is not proposing to modify any flares as a result of this proposed project, flares are not included within the scope of the proposed amendment.[72] He further testified that a production increase does not mean that there would necessarily be more flaring at the site.[73] Mr. Loughran explained that any potential upstream or downstream effects on the flares are allowed because Applicant did not request an increase in any criteria pollutants under the PALs with the proposed project; therefore, the federal permitting applicability review was not required and federal nonattainment NSR and PSD requirements were not applicable in accordance with 30 Texas Administrative Code section 116.190.[74]

2. Protestants' Position

Protestant ET contends that Exxon's Application did not include air emissions produced by additional flaring that will be necessary to support the

[71] Exs. APP-RP-1 at 22; APP-37 at SC 10.D.

[72] Ex. ED-1 at 21.

[73] Ex. ED-1 at 21.

[74] Ex. ED-1 at 21.

expansion project.[75] Further, it argues that Exxon should continuously monitor the flare emissions from flares supporting Furnace XXI.[76]

3. OPIC's Position

OPIC recognizes that flares at the existing plant have already been permitted by TCEQ. Because Exxon does not propose to install, modify, or increase the emission limits of any flares, they are not within the scope of this permit application. Finally, while not relevant, OPIC notes that Exxon is already performing Protestant ET's preferred method of flare monitoring.[77]

4. ALJ's Analysis

The evidence was undisputed that Exxon is not proposing to modify any flares as a result of this proposed project. The existing flares will have to comply with their existing permitted emission limits when proposed Furnace XXI is constructed and operated. Therefore, the ALJ finds that flares are properly excluded from the scope of this permit amendment application.

III. NEW SOURCE REVIEW FEDERAL APPLICABILITY

The Application was filed as a minor NSR permit application subject to TCEQ's rules in 30 Texas Administrative Code chapter 116, subchapter B, New

[75] Prot. ET Ex. 1 (Jackson direct) at 4, 11.

[76] Prot. ET Ex. 1 at 5.

[77] OPIC Closing Argument at 8-9.

Source Review Permits.[78] ED witness Mr. Loughran explained that major NSR applicability is determined as part of the application review; and applications that do not trigger major NSR are issued as minor NSR permits.[79]

Harris County, Texas—where the BOP is located—has been designated as an ozone nonattainment area for decades, most recently being classified as a "severe" nonattainment area for ozone.[80] Ozone is formed when NO_x and VOCs mix in sunlight.[81]

Major NSR is generally triggered when a new or modified source will release more than 100 tons of pollution per year.[82] In a severe nonattainment area, the major source thresholds are even lower.[83] In Harris County, which is designated as "severe nonattainment" for ozone, the major source thresholds for VOC and NO_x is 25 tons per year (tpy).[84] That means any increase at a source that proposes to go over 25 tpy of either NO_x or VOC qualifies as a major NSR amendment.

According to the ED and Exxon, the Application is a "minor" NSR application because the emissions from the proposed Project Facilities and the

[78] Exs. APP-RP-1 at 9; APP-1 at EMC-00006, 35.

[79] Ex. ED-1 at 15.

[80] Ex. APP-38 at EMC-00814.

[81] Tr. Vol. 1 at 27:19 (Jackson).

[82] 40 C.F.R. § 51.166(b)(1)(i); 30 Tex. Admin. Code § 116.12(19).

[83] 40 C.F.R. §§ 50.4-50.19.

[84] 30 Tex. Admin. Code § 116.12(20)(A) (Table I) (Major Source/Major Modification Emission Thresholds).

emissions from the existing BOP will be managed such that they will stay below the limits in the PALs contained in Applicant's PAL6 permit. Thus, "major" NSR review is not required.[85]

A. PLANTWIDE APPLICABILITY LIMIT PERMITS

In 1996, as part of an NSR reform rulemaking effort, EPA issued a proposed rule under which an existing major stationary source could base its NSR applicability on a plantwide emissions cap known as a plantwide applicability limitation.[86] In 2002, EPA formalized this voluntary alternative PAL approach, which allows an existing major stationary source to undergo a modification without being subject to major NSR if certain requirements are met.[87] Under the rule, an operator can obtain a ten-year permit that contains PALs.[88] A PAL for a pollutant imposes an annual emission limit in tons per year that is enforceable for all facilities at a major stationary

[85] Exs. ED-1 at 15; ED-3 at 000042; Tr. Vol. 1 at 87-88, 137-38 (citing 30 Tex. Admin. Code § 116.190(a)) ("An increase in emissions from operational or physical changes at a facility, or emissions unit at a major stationary source, covered by a plant-wide applicability limit (PAL) permit is insignificant, for the purposes of major new source review under this subchapter, if the increase does not exceed the PAL.").

[86] EPA, *Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NSR); Notice of Proposed Rulemaking,* 61 Fed. Reg. 38250, 38264 (July 23, 1996).

[87] EPA, *Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NSR): Baseline Emissions Determination, Actual-to-Future-Actual Methodology, Plantwide Applicability Limitations, Clean Units, Pollution Control Projects; Final Rule*, 67 Fed. Reg. 80,186 (December 31, 2022) (promulgating voluntary alternative way of complying with major NSR based on baseline actual emissions); *Envtl. Integrity Project v. United States Evtl. Prot. Agency,* 969 F.3d 529, 536 (5th Cir. 2020) (citing *New York v. EPA*, 413 F.3d 3, 36 (D.C. Cir. 2015)).

[88] 40 C.F.R. §§ 51.165(f), 51.666(w), 52.21(aa); *Envtl. Integrity Project,* 969 F.3d at 536 (citing *New York*, 413 F.3d at 36).

source that emit the pollutant.[89] The major stationary source can avoid major NSR for a modification to the source if, following the modification, the source's emissions for each PAL pollutant do not exceed the applicable PAL specified in the PAL permit.[90] PAL permit holders must make a demonstration every six months that the emissions from the major stationary source have not exceeded the PALs.[91]

In 2005, TCEQ issued a PAL permit called PAL6 to Exxon's BOP.[92] In 2006, PAL6 was incorporated into BOP's Title V permit.[93] PAL6 "includes [BOP's sitewide] applicability limits, such that any expansion within those limits will not trigger major new-source review."[94] The PAL6 permit was last renewed by TCEQ on December 23, 2022.[95]

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[89] 30 Tex. Admin. Code § 116.186(a) ("The plant-wide applicability limit (PAL) will impose an annual emission limitation in tons per year, that is enforceable for all facilities, or emissions units at a major stationary source, that emit the PAL pollutant"); 40 C.F.R. § 52.21(aa)(2)(i) ("Actuals PAL for a major stationary source means a PAL based on the baseline actual emissions…of all emissions units . . . at the source, that emit or have the potential to emit the PAL pollutant").

[90] *Envtl. Integrity Project,* 969 F.3d at 536 (citing *New York*, 413 F.3d at 36).

[91] Tr. Vol. 1 at 88:1-6 (Parmley).

[92] Tr. Vol. 1 at 102:14-15; *see also* Prot. ET Ex. 11 (PAL6); Ex. ED-1 at 21.

[93] *See Envtl. Integrity Project,* 969 F.3d at 538.

[94] *See Envtl. Integrity Project,* 969 F.3d at 538; *see also* Prot. ET Ex. 11 at ET_001467 ("This permit establishes PALs for VOC, carbon monoxide (CO), nitrogen oxide (NOX), sulfur dioxide (SO2), sulfuric acid (H2SO4), and particulate matter (PM). The PALs are effective for ten years after this permit is issued. Physical changes and changes in method of operation at this site are exempt from federal New Source Review (NSR) for VOC, CO, NOx, SO2, H2SO4, and PM as long as site emissions do not exceed the PAL caps.")

[95] Prot. ET Ex. 12 (PAL6 as renewed 2022).

1. Exxon and ED's Position

Exxon and the ED state that major NSR is not required for a permit application when the proposed emissions from the new or modified facilities associated with the project—combined with existing emissions—at the same major stationary source fall below the PAL limits.[96] They note that Protestant ET is trying to collaterally attack the PAL6 permit in this proceeding; however, they argue that permit is outside the scope of review for this Application.[97]

When Permit 102982 was initially issued, TCEQ conducted an NSR of the then new facilities that comprise the existing BOP 2X Unit.[98] Because NSR is a preconstruction review that is limited to evaluation of new and modified facilities in a project,[99] TCEQ does not have authority to reevaluate the existing BOP 2X Unit facilities not proposed to be modified by physical changes or changes in the method of operation by a project because such facilities were evaluated and approved by TCEQ prior to being authorized by the Permit 102982.[100]

[96] Exs. ED-1 at 21; ED-11 at 619.

[97] ED Closing Argument at 9-10; Ex. ED-1 at 21.

[98] Ex. APP-RP-1 at EMC-02952:34-35.

[99] 30 Tex. Admin. Code § 116.110(a)

[100] Ex. APP-RP-1 at EMC-02952:35-39.

The ED explained that EPA approved the TCEQ PAL rules into Texas' SIP on October 25, 2012, and Exxon's PAL6 permit was subsequently renewed under the SIP-approved rules on December 23, 2022.[101]

2. Protestants' Position

Protestant ET points out that with this Application and Draft Permit, Exxon is seeking a 31.18 tpy increase in VOC emissions, and a 31.34 tpy increase in NO_x emissions. Protestant ET argues that the sole reason for Exxon escaping federal major NSR in this case is reliance on the PAL6 permit; and that according to the Application, the PAL6 permit relieves Exxon of its obligation to comply with federal NSR even though it is seeking major increases in its emissions at its major source.[102]

Protestant ET argues that Exxon's reliance on the PAL6 permit is inappropriate. First, they note that the PAL6 permit was initially issued in 2005, prior to the TCEQ adopting its PAL rules in 2006. Those rules were disapproved by the EPA until they were amended and resubmitted in 2011, and approved into Texas' SIP in the fall of 2012.[103] Prior to that approval, EPA had informed Exxon that the PAL6 permit was a state-only approval and reminded Exxon that it still must comply with the federal NSR requirements in the Texas SIP.[104]

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[101] *See* 40 C.F.R. § 52.2270(c) and 77 Fed. Reg. 65,124 (Oct. 25, 2012); Prot. ET Ex. 12.

[102] Protestant ET Closing Argument at 4.

[103] Tr. Vol. 1 at 149, 152.

[104] Prot. ET Ex. 10.

Protestant ET stresses that Exxon is relying on a regulation that did not exist when the PAL6 permit was issued in 2005—Texas's PAL rules in 30 Texas Administrative Code section 116.190—as the justification for avoiding all federal review. Exxon has constructed all eight of its now-existing ethane cracking furnaces (A-H) and associated equipment that comprise the BOP under the limits that were set in the PAL6 permit in 2005; and that Exxon now proposes that this new ninth furnace (I) be permitted and built, also without CAA major NSR. Protestant ET notes that the federal PAL rule allows a permittee to modify its source so long as the plant emissions remain at the levels of its past "actual" emission levels.[105] Therefore, the Application and Draft Permit have not satisfied the federal applicability requirements.[106]

3. OPIC's Position

OPIC notes that the TCEQ's PAL program received EPA approval prior to Exxon's last renewal of its PAL. OPIC considers issues regarding the PAL6 permit to be outside the scope of this proceeding. Any perceived deficiencies in the PAL6 permit would need to be raised in a proceeding specifically regarding that PAL permit and not in this permit amendment proceeding.[107]

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[105] 40 C.F.R. § 51.165(f). The ALJ further notes that the federal PAL rule disallows PALs for VOC or NO_x for any major stationary source located in an extreme ozone nonattainment area. 40 C.F.R. § 51.165(f)(1)(ii).

[106] Protestant ET Closing Argument at 11.

[107] OPIC Closing Argument at 11.

4. ALJ's Analysis

While Protestant ET raises concerns regarding inconsistencies between what the Texas PAL rule allows as compared to what the federal PAL rule allows, the PAL6 permit is not within the scope of this permit amendment application. Pursuant to Texas's federally-approved PAL rules:

> An increase in emissions from operational or physical changes at a facility, or emissions unit at a major stationary source, covered by a plant-wide applicability limit (PAL) permit is insignificant, for the purposes of major new source review under this subchapter, if the increase does not exceed the PAL.[108]

Because the proposed emissions from the Project Facilities—combined with BOP's other sources sitewide—will be required to be within the PALs for all pollutants in PAL6, the Application was properly subject to minor NSR only.[109]

IV. BEST AVAILABLE CONTROL TECHNOLOGY

BACT is an emission limitation based on the maximum degree of reduction of a pollutant emitted from a facility which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other

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[108] 30 Tex. Admin. Code § 116.190(a).

[109] Tr. Vol. 1 at 217-18 (Loughran Cross); Ex. ED-1 at 21 ("The Applicant did not request an increase in a PAL for any criteria pollutants with the proposed project; therefore, a federal permitting applicability review is not required and federal [nonattainment new source review] requirements, including offsets and lowest achievable emission rates (LAER), are not applicable in accordance with 30 TAC § 116.190."); Ex. ED-11 at 000619 ("BOP is not requesting an increase in a PAL for any of these criteria pollutants as a result of the proposed project. Therefore, a federal permitting applicability review is not required in accordance with 30 TAC 116.190"); Ex. ED-23 at 001191 ("the proposed permit amendment is for a Minor NSR"); Ex. APP-1 at EMC-00006, 35; Prot. ET Ex. 12 (PAL6); see also *Envtl. Integrity Project*, 969 F.3d at 538 (PAL6 "includes [BOP's] plantwide applicability limits, such that any expansion within those limits will not trigger major new-source review.").

costs, determines is achievable for the facility through application of production processes and available methods, systems, and techniques.[110]

Before issuing a permit for a facility, the TCAA requires the Commission to find that the facility "will use at least [BACT], considering the technical practicability and economic reasonableness of reducing or eliminating the emissions resulting from the facility[.]"[111] The Commission defines BACT as:

> An air pollution control method for a new or modified facility that through experience and research, has proven to be operational, obtainable, and capable of reducing or eliminating emissions from the facility, and is considered technically practical and economically reasonable for the facility. The emissions reduction can be achieved through technology such as the use of add-on control equipment or by enforceable changes in production processes, systems, methods, or work practice.[112]

Under Commission rules—particularly 30 Texas Administrative Code section 116.111—an applicant for an air quality permit must include in its application information demonstrating that emissions from the facility will meet the requirements for BACT,[113] with consideration given to the technical practicability and economic reasonableness of reducing or eliminating the emissions from the

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[110] 30 Tex. Admin. Code § 116.160(c)(1)(A) incorporating by reference 40 C.F.R. § 52.21(b)(12).

[111] Tex. Health & Safety Code § 382.0518(b)(1).

[112] 30 Tex. Admin. Code § 116.10(1).

[113] 30 Tex. Admin. Code § 116.111(a)(2)(C).

facility.[114] The applicant must also show that the proposed facility will achieve the performance specified in the permit application.[115]

BACT is primarily determined by following TCEQ's air pollution control guidance documents known as APDG 6110 and APDG 6497.[116] APDG 6110's three-tiered process is the method TCEQ employs to conduct and review BACT proposals submitted in an air permit application.[117]

ED witness Mr. Loughran explained the tiered approach TCEQ uses in making its BACT analysis.[118] In the analysis for each tier, BACT is evaluated on a case-by-case basis for technical practicability and economic reasonableness. A Tier I evaluation involves a comparison of an applicant's BACT proposal to the emission reduction performance levels that have been accepted as BACT in recent permit reviews for similar facilities, taking into consideration new technical developments that might make additional reductions technically feasible and economically reasonable.[119] The BACT analysis proceeds to the second tier only if BACT requirements have not already been established or there are compelling differences

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[114] Tex. Health & Safety Code § 382.0518(b)(1).

[115] 30 Tex. Admin. Code § 116.111(a)(2)(G).

[116] Ex. ED-1 at 16; Exs. APP-RP-1 at19-20; APP-RP-16, *APDG 6110: Air Permit Reviewer Reference Guide Air Pollution Control* (2011); APP-RP-15, *APDG 6497: Current Tier I BACT Requirements: Chemical Sources* (2019).

[117] Ex. ED-1 at 16; Exs. APP-RP-1 at 21; APP-RP-16 (APDG 6110).

[118] Exs. ED-1 at 16. The Commission's approach differs slightly from the EPA's "Top Down" approach, but the Commission's approach to BACT was approved by EPA as part of Texas' State Implementation Plan (SIP). Ex. ED-1 at 16-17.

[119] Ex. ED-1 at 16.

between the applicant's facility and others in the same industry and then proceeds to the third tier only if the first two tiers have failed to identify technically practicable and economically reasonable emission reduction options.[120]

In this case, Exxon conducted a Tier I BACT evaluation of the Project Facilities for CO, SO_2, NO_x, VOCs, PM, PM_{10}, $PM_{2.5}$, H_2SO_4, and NH_3.[121] ED staff determined that the Application met BACT requirements based on the Tier I review.[122]

Mr. Loughran testified that for proposed Furnace XXI, Selective Catalytic Reduction technology (SCR) will be used to meet a maximum short-term (24-hour average) NO_x emission factor of 0.015 pound of a pollutant per million British thermal units of heat input (lb/MMBtu) during routine operations, and an annual 12-month rolling NO_x emission factor of 0.010 lb/MMBtu during routine operations. TCEQ Tier 1 guideline for furnaces greater than 40 MMBtu/hours is a NO_x emission factor of 0.010 lb/MMBtu. Exxon identified 10 previously issued permits that relied upon a short-term NO_x emission factor of 0.015 lb/MMBtu and only one that was lower than 0.015 lb/MMBtu to justify the short-term NO_x BACT. Exxon proposed continuous emissions monitoring systems (CEMS) that will ensure the NO_x emission factors are met.[123]

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[120] Ex. ED-1 at 16.

[121] Ex. ED-1 at 17.

[122] Ex. ED-1 at 17.

[123] Ex. ED-1 at 18.

During transient Maintenance, Startup, and Shutdown emissions (MSS) modes of operation that include decoke mode, hot steam standby, start-up, shutdown, feed in, and feed out operations as defined in the permit, a higher NO_x emission rate of 18.00 pounds per hour (lb/hour) at up to 600 hours/year was proposed as BACT. During furnace transient operations, the flue gas flow rate (which measures the distance that the gas travels per unit of time) and temperature are changing, and the SCR reactions are no longer in a steady state. Exxon represented that a lb/MMBtu emission factor is not practical to assign when the SCR is not in a steady state and the oxygen concentration is high and instead represented a maximum NO_x emission rate of 18.00 lb/hour at up to 600 hours/year.[124]

Exxon proposed as BACT a NO_x emission factor of 0.066 lb/MMBtu at up to 100 hours/year for Furnace XXI when the SCR is down for planned maintenance. Mr. Loughran testified this emission factor is considered acceptable and is supported by another permitted determination that Exxon cited.[125]

Protestant ET contends that Exxon failed to demonstrate why Furnace XXI could not and should not meet lower emission rates for PM, NH_3, and SO_2 demonstrated or required at other similar sources.

[124] Ex. ED-1 at 18.

[125] Ex. ED-1 at 18-19.

A. PARTICULATE MATTER (PM) EMISSIONS

1. Exxon and ED's Position

Mr. Loughran testified that BACT requirements are based on efficiencies, or "emission factors." Emission factors are representative values that relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. These factors are usually expressed as the weight of pollutant divided by a unit weight, volume, distance, or duration of the activity emitting the pollutant (e. g., kilograms of particulate emitted per megagram of coal burned). Such factors facilitate estimation of emissions from various sources of air pollution. Mr. Loughran stated that emission factors are provided by EPA in the *Compilation of Air Pollution Emission Factors*, AP-42 Manual.[126] However, Mr. Parmley testified that while the ED expects to see the use of AP-42 in emission calculations, the use of AP-42 to determine PM emissions limitations is not mandated by a statute or regulation.[127]

Mr. Parmley explained that the PM emissions limits for proposed Furnace XXI in the Draft Maximum Allowable Emissions Rate Table (MAERT) are based on the furnace's potential to emit at its maximum rated capacity on both an hourly and annual basis.[128] He stated that because the air dispersion modeling impacts demonstration showed off-site ground level PM concentrations below the Significant

[126] Exs. ED-1 at 22-23; ED-6 (EPA AP-42).

[127] Tr. Vol. 1 at 116:14-15.

[128] Ex. APP-RP-1 at 16.

Impact Levels (SILs), Exxon followed TCEQ's established policy to use the AP-42 emission factor for calculating PM emissions from proposed Furnace XXI.[129]

Exxon states that Permit 102982 currently contains the same PM BACT requirements for the existing eight furnaces at BOP's 2X Unit as the Draft Permit will impose on Furnace XXI.[130] Therefore, Exxon explains, the proposed PM BACT emission limit for Furnace XXI is consistent with PM BACT that TCEQ has accepted in recent reviews for Furnaces XXA through XXH. In addition, Exxon witness Mr. Parmley testified that there have not been any lower PM limits adopted as BACT for PM since the reviews for Furnaces XXA through XXH.[131]

Mr. Loughran testified that AP-42 is considered an acceptable reference for PM emission factors. He further explained that stack test data for compliance testing would be expected to show compliance with permitted allowable emission rates, and, therefore, should be lower than the permitted allowable emission rate.[132] Mr. Parmley stressed that "[a]n emissions test is a snapshot in time for purposes of demonstrating compliance and does not represent the worst-case potential emissions of a facility. Therefore, it is not appropriate to use emission test results to establish a permit emission limit."[133] The ED confirmed that PM emission calculations for proposed Furnace XXI based on EPA's AP-42 factor for PM "were determined to

[129] Tr. Vol. 1 at 121.

[130] Ex. APP-RP-1 at 28.

[131] Ex. APP-RP-1 at 28-29.

[132] Ex. ED-1 at 21.

[133] Ex. APP-RP-1 at 30.

be correct and applicable by TCEQ staff during the technical review based on standard industry air permitting practices."[134]

2. Protestants' Position

Protestant ET contends the PM emissions limits proposed in the Draft Permit for Furnace XXI do not meet the BACT standard. Protestant ET's expert witness in combustion engineering and industrial processes, Robert Jackson, explained that the furnace's PM emission limits are based on EPA's AP-42 emission factors, and, in his opinion, limits based on the AP-42 factors are not valid or reasonable.[135] More specifically, Protestant ET notes that the AP-42 publication on which Exxon relies was published in 1998, over 24 years before this Application was submitted to TCEQ in 2022. Therefore, they argue that reliance on AP-42 to set a permit limit for PM in this case fails because it is based on old data that fails to meet the definition of BACT.[136] Additionally, the AP-42 emission factor that Exxon relies on has a rating of "D" on a scale of "A" through "E", with "E" being the lowest possible rating.[137] Mr. Jackson testified that that the furnace's PM emissions limits should be based on stack test[138] data from the plant's other furnaces.[139]

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[134] Ex. ED-3 (Response to Comments) at 41-42.

[135] Prot. ET Ex. 1 at 17.

[136] Protestant ET Closing Argument at 17.

[137] Protestant ET Closing Argument at 18; Tr. Vol. 1 at 114-15.

[138] Stack tests are a type of emissions test used to show that a furnace is complying with emissions limitations. *See* Tr. Vol. 1 at 113-14.

[139] Prot. ET Ex. 1 at 17.

The Draft Permit's MAERT proposes a PM emission limit of 4.36 pounds per hour.[140] Protestant ET argues that this proposed limit does not reflect PM emissions that are obtainable, and in fact are already being obtained, on the very same furnace units.[141] Protestant ET notes that Exxon has conducted stack tests on the existing BOP furnaces which show that emissions routinely and normally achieve significantly lower emissions than the levels Exxon claims as BACT for Furnace XXI.[142] Failing to consider this operational data, Protestant ET claims, is a failure to meet BACT.

3. OPIC's Position

OPIC acknowledges that the AP-42 emission factors carry a "D" rating; however, until the EPA establishes updated emissions factors, OPIC will not say that their use is unreasonable. Further, OPIC accepts the ED and Exxon's explanation that stack test data is not appropriate to set emission limits.[143]

4. ALJ's Analysis

While Protestant ET raised concerns regarding the use of outdated emission factors in AP-42 and the availability of stack test data for use in setting the PM emission limit for Furnace XXI, they have not shown that those concerns translate into a failure to meet BACT. More specifically, both Mr. Loughran and Mr. Parmley

[140] Ex. APP-37 at EMC-00808.

[141] Prot. ET Ex. 9 at ET_000396

[142] Protestant ET Closing Argument at 15-16; Prot. ET Ex. 9 at ET_000396.

[143] OPIC Closing Argument at 18-19.

testified that the use of stack test data would be inappropriate for use as a permitted emission limit because it does not represent the worst-case potential emissions, and it should always be lower than the permitted emissions limit. With regard to the use of the EPA's AP-42 emission factors, the record demonstrates that despite their age and poor score, they have been approved by the EPA and are accepted by TCEQ. Therefore, Protestants have not rebutted the prima facie demonstration on this issue. Accordingly, the ALJ finds that the record supports a finding that the Draft Permit meets the legal requirements for BACT for PM emissions from proposed Furnace XXI.

B. AMMONIA (NH_3)

1. Exxon and ED's Position

Proposed BACT for NH_3 emissions from proposed Furnace XXI are emission limits of 10 parts per million by volume, dry (ppmvd) corrected to 3% O_2 on a 12-month rolling basis and 15 ppmvd at 3% O_2 on an hourly basis to allow for short-term operational variations.[144] Furnace XXI will use SCR to control NO_x emissions.[145] SCR converts NO_x to nitrogen (N_2) and water (H_2O) by injecting an NH_3 solution into the exhaust gas in the presence of a catalyst.[146] NO_x emissions control is especially important in ozone nonattainment areas like the Houston-Galveston-Brazoria area because NO_X emissions are a principal precursor

[144] Ex. APP-RP-1 at 31; Ex. ED-1 at 18.

[145] Ex. APP-RP-1 at 31.

[146] Ex. APP-RP-1 at 31.

to ozone formation. Mr. Parmley explained the concept of SCR—more NH_3 injection creates more control of NO_x emissions. However, more NH_3 injection also results in more NH_3 that is unreacted, *i.e.,* is not used to convert NO_x, and "slips" through and is emitted to the atmosphere. As a result, there is a direct tradeoff between controls for NO_x emissions and NH_3 emissions.[147] Mr. Parmley explained that both NO_x and NH_3 in the gas stream of Furnace XXI will be measured by CEMS to control the SCR's NH_3 injection system.[148]

Mr. Loughran testified that the proposed one-hour basis matches the existing NH_3 limit for the other eight furnaces in Special Condition No. 7.C(4) of the permit. Further, the Applicant will be required to meet the NH_3 limit in 30 Texas Administrative Code section 117.310(c)(2)(B) of 10 ppmvd NH_3 on a 24-hour basis during normal operations.[149] Mr. Loughran explained that the goal of SCR is to reduce NO_x emissions, and setting excessively restrictive limits on the NH_3 slip could jeopardize the NO_x control. He stressed that minimizing NO_x in a severe ozone nonattainment county, like Harris County, is an important consideration for protecting the environment.[150]

Considering the lower limit of 10 ppmvd at 3% O_2 on an hourly basis, which Protestant ET argued was BACT, Mr. Parmley noted that for some of the identified permits with this limit, the lower hourly limit is actually an emission cap over

[147] Ex. APP-RP-1 at 31.

[148] Ex. APP-RP-1 at 33.

[149] Exs. ED-1 at 22; ED-7 at 000566.

[150] Ex. ED-1 at 22.

multiple furnaces rather than an individual emission limit covering one furnace. This allows the limit to be met even if one furnace exceeds 10 ppmvd at 3% O_2 in one hour as long as one of the other furnaces is far enough below the limit such that the average does not exceed the limit in the same hour.[151] Mr. Parmley testified that in his opinion it would be technically impracticable for Furnace XXI to meet a 1-hour NH_3 emission limit of 10 ppmvd at 3% O_2.[152]

Additionally, Mr. Parmley explained that for units without a CEMS, the NH_3 emissions limit is 10 ppmv at 3.0% O_2 on a 1-hour averaging period, and for units with a CEMS, the NH_3 emissions limit is the same but on a 24-hour averaging basis.[153] Therefore, Exxon will also be subject to 30 Texas Administrative Code section 117.310(c)(2)(B)'s NH_3 limit of 10 ppmvd NH_3 on a 24-hour average basis during normal operations.[154]

2. Protestants' Position

Protestant ET contends the BACT determination for NH_3 is incomplete because Exxon and the ED failed to consider other existing plants that have lower NH_3 emission limits of 10 ppmvd corrected to 3% O_2 at a one-hour rolling average.

[151] Ex. APP-RP-1 at 35-36.

[152] Ex. APP-RP-1 at 36.

[153] Ex. APP-RP-1 at 33; 30 Tex. Admin. Code § 117.310(c)(2)(A)-(B).

[154] Ex. ED-1 at 22; 30 Tex. Admin. Code § 117.310(c)(2)(B).

Protestant ET's witness, Mr. Jackson, identified five permits that have NH_3 limits of 10 ppmvd corrected to 3% O_2 at one-hour rolling average.[155]

3. OPIC's Position

Considering the interdependent relationship between NH_3 and NO_x, and given that NO_x is a precursor to ozone, and Harris County is in severe nonattainment for ozone, OPIC finds that the trade-off arrived at by the ED is appropriate. Therefore, OPIC finds that Applicant has carried its burden with respect to this issue.[156]

4. ALJ's Analysis

The fact that an emissions limit might be achievable at one location does not alone establish it as BACT or require that a permit applicant "match" the limit. For an emissions limit to be BACT, it must also be technically practicable and economically reasonable.[157] It is important to recognize that BACT is set on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs.[158] Mr. Parmley testified that in his opinion it would be technically impracticable for Furnace XXI to meet a 1-hour NH_3 emission limit of 10 ppmvd at 3% O_2. Additionally, the testimony shows that there is a direct tradeoff between controls for NO_x emissions and NH_3 emissions. However, minimizing NO_x

[155] Prot. ET Ex. 1 at 18.

[156] OPIC Closing Argument at 20.

[157] 30 Tex. Admin. Code § 116.10(1).

[158] 30 Tex. Admin. Code § 116.160(c)(1)(A) incorporating by reference 40 C.F.R. § 52.21(b)(12).

in a severe ozone nonattainment county, like Harris County, is especially important because NO_X emissions are a principal precursor to ozone formation. Therefore, the ALJ finds that, in this case, the preponderance of the evidence demonstrates that BACT for NH_3 emissions from proposed Furnace XXI are emission limits of 10 ppmvd corrected to 3% O_2 on a 12-month rolling basis and 15 ppmvd at 3% O_2 on an hourly basis to allow for short-term operational variations.

C. SULFUR DIOXIDE (SO_2)

1. Exxon and ED's Position

Proposed Furnace XXI will fire imported natural gas or blended fuel gas that consists of imported natural gas and recycled tail gas. Combustion of imported natural gas or blended low sulfur fuel gas is proposed as BACT for SO_2 and H_2SO_4 from proposed Furnace XXI.[159] Mr. Parmley testified that Furnace XXI will be fired from the same fuel gas header system that is utilized for the existing furnaces.[160]

ED witness Mr. Loughran testified that existing Special Condition No. 7A specifies a limit of 5 grains total sulfur/100 dry standard cubic feet (dscf) for existing Furnaces XXA-XXH, and is not being changed with this proposed amendment to Permit 102982. Mr. Loughran stated that this meets TCEQ Tier 1 BACT for heaters. He further testified that the fuel used for proposed Furnace XXI is the same as the existing furnace units, so the SO_2 limit for all of the furnaces should be the

[159] Ex. APP-RP-1 at 38.

[160] Ex. APP-RP-1 at 38.

same since the fuel source is the same.[161] Mr. Parmley explained that meeting a fuel sulfur content limit for Furnace XXI that is different from the existing furnaces would require segregating and monitoring fuel sulfur content for Furnace XXI differently than for the existing furnaces on an ongoing basis.[162]

Mr. Parmley acknowledged that Protestant ET witness, Mr. Jackson identified two permits where the annual fuel sulfur content limits are 0.2 grains and 0.5 grains total sulfur/100 dscf; however, he explained that those limits would not be practically enforceable for Furnace XXI because those limits are 10 to 25 times lower than BACT for SO_2 and H_2SO_4 for the existing furnaces on site, which are the same type of furnaces as proposed Furnace XXI.[163]

In addition, for one of the permits identified by Mr. Jackson, Mr. Parmley noted that the lower annual fuel sulfur content limit is an emission cap over an eight-furnace block rather than an individual limit covering one furnace. He explained that this would allow the limit to be met even if one of the furnaces exceeded the limit, so long as the average for all eight did not exceed 0.5 grains total sulfur/100 dscf for the year. Therefore, such an annual limit covering multiple furnaces is far less stringent than an annual fuel sulfur limit being imposed on one furnace.[164]

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[161] Ex. ED-1 at 23.

[162] Ex. APP-RP-1 at 38.

[163] Ex. APP-RP-1 at 39-40; Prot. ET Ex. 1 at 18.

[164] Ex. APP-RP-1 at 40.

Mr. Parmley further noted that the permits identified by Mr. Jackson, Dow and GCGV, were issued in 2014 and 2019 respectively. Since that time, the TCEQ has issued permits for similar furnaces without annual fuel sulfur content limits less than 5 grains total sulfur/100 dscf; thereby implying that those two permits have not established a lower fuel sulfur content limit as BACT.[165] Moreover, Exxon notes, the TCEQ Tier I BACT table (APDG 6497) was last revised in March 2019; if TCEQ's incorporation of annual fuel sulfur content limits in the 2014 and 2019 permits had caused either of those limits to constitute a new BACT under Tier I, APDG 6497 would include that limit, but the table does not include either limit.[166]

2. Protestants' Position

SO_2 is a criteria pollutant for which EPA has set health-based NAAQS.[167] Protestant ET notes that in the Application and Draft Permit, Exxon requests an increase in SO_2 emissions that is two and a half times higher than what is currently allowed for all eight existing ethane cracking furnaces.[168]

Protestant ET argues that Exxon and the ED failed to adequately consider other permits for similar sources when setting the BACT limits for SO_2, which are set by limiting the content of sulfur in the gas used at the plant.

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[165] Ex. APP-RP-1 at 39-40.

[166] Ex. APP-RP-15.

[167] 40 C.F.R. §§ 50.4-.5.

[168] Ex. APP-38 at EMC-00812.

3. OPIC's Position

The inclusion of higher sulfur limits in recently issued permits weighs against a finding that the lower sulfur limits identified by Protestant ET are now established as BACT. Therefore, OPIC contends that Applicant has carried its burden with respect to this issue.[169]

4. ALJ's Analysis

BACT is more than merely identifying permits with lower limits. In addition to comparing an applicant's BACT proposal to the emission reduction performance levels that have been accepted as BACT in recent permit reviews for similar facilities, it requires an analysis of technical practicability and economical reasonableness for the facility.[170] In this case, the proposed SO_2 emission limitation of 5 grains total sulfur/100 dscf for Furnace XXI is the same as for existing Furnaces XXA-XXH, which was approved as BACT in Permit 102982. Mr. Parmley testified as to the impracticalities in setting a much lower fuel sulfur content limit on Furnace XXI than for the other eight furnaces using the same fuel source. Moreover, Mr. Loughran reviewed the Application and stated that Exxon's proposed SO_2 emission limitation of 5 grains total sulfur/100 dscf meets TCEQ Tier 1 BACT for heaters. The TCEQ's Tier I BACT Table, last revised after the two permits identified by Protestant ET were issued, supports his opinion. The ALJ finds that the preponderance of the evidence in this case establishes that Exxon's proposed

[169] OPIC Closing Argument at 21.

[170] 30 Tex. Admin. Code § 116.10(1).

SO_2 emission limitation of 5 grains total sulfur/100 dscf constitutes BACT under a Tier I analysis for controlling SO_2 emissions from Furnace XXI.

V. PROTECTION OF HEALTH AND THE ENVIRONMENT

The TCAA provides that TCEQ may not grant a permit unless it is demonstrated that emissions from a facility will not have an adverse impact on public health and welfare.[171] The NAAQS apply to six criteria pollutants: SO_2, PM, NO_2, CO, O_3, and Pb.[172] Effects screening levels (ESLs) apply to non-criteria pollutants; however, ESLs are not standards, but rather screening levels that provide a high degree of certainty that public health and welfare will be protected.[173]

TCEQ determines whether public health and property will be protected by reviewing air dispersion modeling[174] submitted by applicants for protectiveness of NAAQS and ESLs for non-criteria pollutants.[175] Protestants raised concerns relating to the modeling of NO_x emissions from Furnace XXI.

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[171] Texas Health & Safety Code § 382.0518(b)(2); *see also* 30 Tex. Admin. Code § 116.111(a)(2)(A)(i).

[172] Ex. ED-1 at 15.

[173] Ex. ED-12 (Eldredge direct) at 000645.

[174] Air dispersion modeling consists of the modeling of emission sources to predict maximum concentrations of pollutants at off-property locations. Ex. ED-1 at 24.

[175] 30 Tex. Admin. Code § 116.111(a)(2)(A)(i), General Application, provides that an air authorization must "... comply with all rules and regulations of the commission and with the intent of the [TCAA], including protection of the health and property of the public."

A. EXXON AND ED'S POSITION

The ED explains that Exxon modeled the impacts of the following pollutants: NO_x, CO, VOC, $PM/PM_{10}/PM_{2.5}$, SO_2, NH_3, and H_2SO_4.[176] Exxon performed a de minimis modeling demonstration, which indicated that no further analysis is required for 1-hr SO_2, 3-hr SO_2, 24-hr PM_{10}, 24-hr $PM_{2.5}$, Annual $PM_{2.5}$, 1-hr NO_2, Annual NO_2, 1-hr CO, and 8-hr CO.[177] As such, Exxon only performed a minor NSR review and not a full PSD review.[178]

The ED audited the modeling and found it to be acceptable because it demonstrated that the proposed emissions will not cause or contribute to an exceedance of the NAAQS or any other applicable standard.[179] For non-criteria pollutants that are not subject to a NAAQS standard, the ED was able to determine that their respective ESLs will not be exceeded.[180]

Finally, the ED notes that emissions will be monitored by CEMS on the furnace for NO_x and CO, NH_3 stack monitoring for the furnace, daily visible emission

[176] Ex. ED-1 at 24.

[177] Ex. ED-12 at 000645.

[178] Ex. ED-23 (Dumas direct) at 001191. If the modeling had shown impacts above the de minimis level, then Applicant would have had to conduct a more rigorous, full impacts analysis which would have required a modeling of the new project's emissions along with the plant's existing emissions, other nearby industrial sources, and background concentrations. Tr. Vol. 2 at 46.

[179] Exs. ED-1 at 25; ED-12 at 000646.

[180] Exs. ED-1 at 25; ED-12 at 000646.

inspections during decoking, implementation of multiple leak detection and repair programs, and monitoring of the cooling tower water for VOC and PM emissions.[181]

Applicant witness Lucy Fraiser, a toxicologist, testified that NAAQS and ESLs include adequate margins of safety to ensure that there are no adverse health or welfare effects.[182] Dr. Fraiser also stated that none of the facilities will cause or contribute to an exceedance of the NAAQS or pose a threat to health or welfare.[183] Additionally, modeling shows that non-criteria pollutants emitted by the facilities will not harm health or welfare.[184]

In response to Protestant ET's concerns about the hourly NO_x emissions, Exxon provided a table covering Furnace XXI's three operating modes, and explained that proposed emissions from routine operations and transient MSS will occur from EPN XXIF01-ST (the Furnace XXI stack),[185] while proposed emissions from SCR MSS will come from EPN XXIF01-MSS.[186]

[181] Ex. ED-1 at 27.

[182] Ex. APP-LF-1 at 10.

[183] Ex. APP-LF-1 at 13.

[184] Ex. APP-LF-1 at 15.

[185] Exs. APP-1 at EMC-00031; APP-2 at EMC-00096; APP-13 at EMC-00260-61.

[186] Exs. APP-1 at EMC-00031; APP-2 at EMC-00097; APP-13 at EMC-00261.

EPN[187]	Operating Mode[188]	NOX Emissions Limit (pounds per hour (lbs/hr))[189]	NOX Emissions Limit (tpy)[190]	Frequency Limit (hours per year (hr/yr))	Draft Permit Special Conditions[191]	AQA Modeled Emissions Rate (lb/hr)[192]
XXIF01-ST[193]	Routine	18.00	29.27	8,760[194]	7.C(1)-(4), 7.D(1)-(4), F	18.0[195] maximum hourly
XXIF01-ST[196]	Planned Transient MSS			600[197]	21.A.-F.	
XXIF01-MSS[198]	Planned SCR MSS	38.61	1.93	100[199]	21.G.	0.44[200] average hourly

According to the TCEQ's Air Quality Modeling Guidelines APDG 6232 (AQMG), the purpose of EPA's intermittent source policy is to address EPA's

[187] Ex. ED-10 (MAERT) at 612-613.

[188] Ex. APP-13 at EMC-00260-61; Ex. ED-11 at 620, 624-625.

[189] Ex. ED-10 (MAERT) at 612-613.

[190] Ex. ED-10 (MAERT) at 612-613.

[191] Ex. ED-7 at 566, 576; Ex. ED-11 at 623-624.

[192] Ex. APP-15 at EMC-00404 (identifying modeled emission rates for 1-hour NOX of 18 lb/hr for XXIF01-ST and 0.44 lb/hr for XXIF01-MSS for NAAQS SIL analysis).

[193] Ex. APP-13 at EMC-00269 (calculation inputs).

[194] Ex. APP-13 at EMC-00269 (calculation inputs).

[195] Ex. APP-15 at EMC-00404 (identifying modeled emission rates).

[196] Ex. APP-13 at EMC-00269 (calculation inputs).

[197] Ex. APP-23 at EMC-00538 ("The NOX annual emission limit calculation takes into account a number of hours per year (TD) at the maximum emission rate equal to 600 hr/yr:"); Ex. ED-11 at 625.

[198] Ex. APP-2 at EMC-00097.

[199] Ex. APP-21, Response 3 at EMC-00467 (providing maximum number of hours per year for SCR MSS).

[200] Ex. APP-15 at EMC-00406 (identifying rate and describing case-by-case approval of reliance on intermittent source policy).

concern that an assumption of continuous operation at a maximum hourly emissions rate by a source that will operate and emit intermittently may be an overly conservative assumption that could result in modeled maximum ground level concentrations (GLC_{max}s) for the source being significantly higher than actual, realistically expected ground level concentrations (GLCs) for an emissions source.[201] The intermittent source policy addresses that concern by presenting alternative approaches for evaluating intermittent source emissions in modeling.[202] One of the approaches is to model the intermittent source's emissions as an average hourly rate rather than the maximum hourly rate, as was done for the SCR MSS NO_x emissions in the air quality analysis (AQA).[203] Rather than excluding intermittent emissions from NAAQS compliance demonstrations altogether, the AQMG states that intermittent emissions scenarios should be included in a model when they can "logically be assumed to be relatively continuous or which occur frequently enough to contribute significantly to the annual distribution of daily maximum 1-hour [NO2] concentrations."[204] For this Application, Exxon states that the ED implicitly determined the SCR MSS scenario to logically occur frequently enough to warrant inclusion in the model.[205] In addition, the ED added a special condition to the Draft Permit to ensure SCR MSS will occur no more than 100 hr/yr.[206]

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[201] Ex. ED-14 (APDG 6232) at 770; *see also, e.g.*, Ex. ED-18 at 905 ("…we are concerned that assuming continuous operations for intermittent emission would effectively impose an additional level of stringency beyond that intended by the level of the standard itself.").

[202] Ex. ED-14 at 770.

[203] Ex. ED-14 at 770.

[204] Ex. ED-14 at 770.

[205] Exxon Reply Closing at 36.

[206] Ex. ED-7 at 576 (special condition 21.G).

Exxon and the ED both maintain that Exxon appropriately used an average hourly NO_x emissions rate of 0.44 lb/hr in the model for emissions from SCR MSS for up to 100 hr/yr from EPN XXIF01-MSS.[207] The ED notes that the Electronic Modeling Evaluation Workbook (EMEW) submitted with the AQA contained all information, including the maximum allowable emission rate, of the proposed MSS operations.[208] Mr. Dumas testified that the calculation of 0.44 lb/hr for SCR MSS for up to 100 hr/yr is performed by multiplying the maximum hourly NO_x emissions rate for the 1-hour NO_2 NAAQS of 38.61 lb/hr times the ratio of 99.6 hours allowed by the Draft Permit for SCR MSS divided by 8,760 hours. He affirmed that this calculation method is consistent with the intermittent source policy.[209] Since Exxon's representation was adequate, the ED states no further inquiry is required.[210]

The ED stresses that the Air Dispersion Modeling Team of the Air Permits Division (ADMT) reviewed Exxon's representation of MSS emissions from the furnace and determined it met the requirements of intermittent guidance.[211] Specifically, that Exxon used intermittent guidance that was established by the EPA for these types of reviews.[212] The ED further notes that EPA's intermittent guidance

[207] ED Reply Closing at 5.

[208] Ex. ED-12 at 8.

[209] Ex. APP-15 at EMC-00406; Tr. Vol. 2 at 72:3-16 (Dumas Cross) (explaining how the calculation is performed).

[210] ED Reply Closing at 4.

[211] Tr. Vol. 2 at 33.

[212] Ex. ED-18 at 9-11.

references the Guideline on Air Quality Models, which emphasizes the exercise of professional judgement by the appropriate reviewing authority.[213]

B. PROTESTANTS' POSITION

Protestant ET argues that Exxon failed to model the "worst-case" emissions scenario allowed in their proposed permit, to demonstrate that the emissions being authorized will not cause impermissible levels of pollution.[214] Specifically, Protestant ET contends that rather than modeling the Draft Permit's allowable NO_x emissions of up to 18 lbs/hr for up to 600 hr/yr, and up to 38.61 lbs/hr for up to 100 hr/yr[215], Exxon's modeling demonstration used an emission rate of 0.44 lbs/hr. By using 0.44 lbs/hr in the model, the Application represents that the emissions from Furnace XXI would result in ambient air concentrations of 7.3 micrograms per cubic meter (m^3), versus a significant impact level of 7.5 micrograms/m^3.[216]

Protestant ET argues that the EPA intermittency policy relied on by Applicant and the ED to support the use of a NO_x emission rate of 0.44 lbs/hr was not properly applied, and that the policy warns applicants not to assume that all intermittent emissions should be treated the same. Specifically, the policy "recommend[s] that compliance demonstrations for the 1-hour NO_2 NAAQS be based on emission scenarios that can logically be assumed to be relatively continuous or which occur

[213] ED Reply Closing at 7.

[214] *See* Tr. Vol. 1 at 131.

[215] Tr. Vol. 1 at 94; Tr. Vol. 2 at 51.

[216] Ex. APP-38 at EMC-00824.

frequently enough to contribute significantly to the annual distribution of daily maximum 1-hour concentrations".[217] Protestant ET urges that as Harris County is in severe nonattainment for ozone, and NO_x is a key ingredient in ozone formation, it is imperative that Exxon's model impacts for NO_2 be scrutinized.

C. OPIC'S POSITION

OPIC takes the position that Exxon failed to carry its burden with respect to ensuring that the permit is protective of health and the environment. Specifically, OPIC notes the errors with the emissions rate used for the modeling performed to support the 1-hour NO_2 de minimis determination. OPIC finds that Protestant ET has demonstrated that had the 18 lb/hr NO_2 emission rate been used, it is more likely than not that NO_2 emissions for the newly proposed furnace would exceed the 1-hour NO_2 de minimis level of 7.5 micrograms/m^3. To arrive at the current application's anticipated NO_2 level of 7.3 micrograms/m^3, Exxon modeled certain furnace emissions as intermittent using a 0.44 lb/hr NO_2 emission rate. In reality, the permit allows Exxon to emit at least 18 lb/hr of NO_2 for at least 100 hours, and possibly up to 600 hours per year.

To arrive at a 0.44 lb/hr emissions rate, Exxon annualized emissions over the 8,760 hours contained in an entire year. However, this does not truly reflect the 18 lb/hr (and possibly 38.61 lb/hr) that the Draft Permit currently authorizes in certain modes. For the 1-hour NO_2 NAAQS, the relevant time period is one hour, and annualizing emissions appears to allow for the possibility that there could be a

[217] Ex. ED-18 at 906.

number of hours that Exxon would exceed the 1-hour NO_2 de minimis level.[218] Further, the ED agrees that ratioing using the 8,760 hours in a year may help in determining compliance with an annual limit, but "it does not come into the 1-hour NO_x."[219]

OPIC notes that when Exxon submitted a renewal application for the existing eight furnaces in 2014, it found that the 1-hr NO_2 GLC was 7.48 micrograms/m^3.[220] However, Exxon did not consider or include emissions from the existing eight furnaces or other background sources in its modeling for the current application.[221] If the proposed Furnace XXI's emissions were combined with emissions from the existing eight furnaces and other background sources, it appears likely that the project will exceed the 1-hr NO_2 de minimis level of 7.5 micrograms/m^3. Considering that in 2014 the GLC_{max} was a mere 0.02 micrograms/m^3 below the de minimis level, it seems doubtful that the addition of another furnace will not result in exceedance of the de minimis level. As such, OPIC finds the application must be remanded to the ED for further technical review, including additional modeling that reflects actual expected emissions during the modes where higher emissions are allowed, including MSS.

[218] Tr. Vol 2 at 52-53.

[219] Tr. Vol. 2 at 58.

[220] Tr. Vol. 1 at 235.

[221] Tr. Vol. 1 at 181; Tr. Vol. 2 at 43.

OPIC states that without further technical review, including additional modeling using a revised emissions rate, OPIC is unable to find that 1-hour NO_2 emissions have been demonstrated to be protective of health and the environment.

D. ALJ'S ANALYSIS

The approval of an applicant's use of EPA's intermittent source policy lies with the TCEQ. It is determined on a case-by case basis relying upon information provided in the AQA and EMEW.[222] In this case, both ED air dispersion modeling experts, Mr. Dumas and Ms. Eldredge, testified that the ED allowed and approved use of the intermittent source policy for the SCR MSS emissions to demonstrate compliance with the 1-hour NO_2 NAAQS. Indeed, the evidence demonstrates that using the intermittent source policy better represents SCR MSS emissions because the Draft Permit limits the NOx emissions from SCR MSS to 38.61 lb/hr for no more than 100 hr/yr. The ALJ finds that the preponderance of the evidence supports that the Applicant's air dispersion modeling of EPN XXIF01-MSS based on TCEQ's intermittent guidance in AQMG for the 1-hour NO_2 NAAQS analysis was proper.

VI. CONCLUSION

Because the Application was directly referred to SOAH for a contested case hearing, Applicant had the burden to prove by a preponderance of the evidence that the Application satisfies all applicable statutory and regulatory requirements. The ALJ finds that Exxon met its burden of proof on all contested issues, and that the Draft Permit should be issued. The uncontested issues are set out in the ALJ's

[222] *See* Ex. APP-15 at EMC_00406 (describing case-by-case approval of reliance on intermittent source policy).

Proposed Order without further discussion in the Proposal for Decision. The ALJ recommends that the TCEQ adopt the attached Proposed Order and deny all findings of fact proposed by the parties that are not contained in the attached Proposed Order.

VII. TRANSCRIPT COSTS

The Commission may assess reporting and transcription costs to one or more of the parties participating in a proceeding, and when doing so, must consider the following factors:

> (A) The party who requested the transcript;
> (B) The financial ability of the party to pay the costs;
> (C) The extent to which the party participated in the hearing;
> (D) The relative benefits of the various parties of having a transcript; . . . and
> (G) Any other factor which is relevant to a just and reasonable assessment of costs.[223]

Additionally, the Commission will not assess reporting or transcription costs against the ED or OPIC because they are statutory parties who are precluded by law from appealing the Commission's decision.[224]

Exxon submitted an invoice from the court-reporting service showing it paid $6,442.00 in reporting and transcription costs for the preliminary hearing,

[223] 30 Tex. Admin. Code § 80.23(d)(1).

[224] 30 Tex. Admin. Code § 80.23(d)(2); *see* Tex. Water Code §§ 5.228, .273, .275, .356.

prehearing conference, and two-day hearing on the merits.[225] Exxon submits that Protestant Theresa Blackwood, who appeared pro se, should not be responsible for any transcript costs. Exxon does request, however, that the cost be equally shared by Exxon and Protestant ET; arguing that they both participated in the hearing on the merits and are relying equally on the transcript. Exxon notes that a party's financial ability to pay is not dispositive and argues there is no evidence that Protestant ET lacks the financial wherewithal to pay its fair share.[226]

Protestant ET stresses that it is a non-profit organization and the attorneys representing it in this matter are from Environmental Integrity Project, a non-profit, public-interest environmental law organization that provides pro bono legal services. Protestant ET contrasts itself with Exxon, a for profit entity. Protestant ET further notes that it litigated a small number of focused issues in this matter, and only offered one witness. In addition, Protestant ET already had to pay $951.56 for a copy of the transcript needed to prepare its closing arguments, and it contends that any other court reporting costs should be borne solely by Exxon.

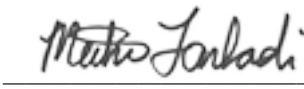
In considering the factors in 30 Texas Administrative Code § 80.23(d)(1), the ALJ finds that no party requested the transcript, because it was required by SOAH; no party has shown a financial inability to pay costs; both parties equally participated in the hearing; and both parties equally benefit from having a transcript. Thus,

[225] Exxon Closing Argument, Attachment A.

[226] *See* 30 Tex. Admin. Code § 80.23(d)(1)(B).

factors (A)-(D) weigh equally for each party's position.[227] and the parties have not shown "any other factor [ ] is relevant to a just and reasonable apportionment of costs."[228] Therefore, the ALJ recommends that the Commission assess Exxon and Protestant ET each one-half of the transcription costs.[229]

Signed March 25, 2024



Meitra Farhadi
Presiding Administrative Law Judge

[227] 30 Tex. Admin. Code § 80.23(d)(1)(A)-(D).

[228] 30 Tex. Admin. Code § 80.23(d)(1)(G).

[229] ($6,442.00 + $951.56) /2 = $3,696.78

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AN ORDER
GRANTING THE APPLICATION BY EXXON MOBIL CORPORATION
TO AMEND AIR QUALITY PERMIT NO. 102982
IN BAYTOWN, HARRIS COUNTY, TEXAS;
TCEQ DOCKET NO. 2023-0649-AIR;
SOAH DOCKET NO. 582-23-22762

On _____, the Texas Commission on Environmental Quality (TCEQ or Commission) considered the application of Exxon Mobil Corporation (Exxon or Applicant) to amend TCEQ Air Quality Permit No. 102982 in Baytown, Harris County, Texas. A Proposal for Decision (PFD) was issued by Meitra Farhadi, Administrative Law Judges (ALJ) with the State Office of Administrative Hearings (SOAH).

After considering the PFD, the Commission makes the following findings of fact and conclusions of law.

I. FINDINGS OF FACT

Background & Procedural History

1. On September 7, 2022, Exxon submitted a New Source Review (NSR) application to the TCEQ to amend its existing TCEQ Permit No. 102982

(Permit 102982) to authorize four new and/or modified facilities at its existing BOP-2X ethylene production unit (the BOP 2X Unit) at the Baytown Olefins Plant (BOP) in Baytown, Harris County, Texas (Application).

2. The Application seeks authorization of: (1) a new ethane cracking furnace (Furnace XXI), (2) a new furnace decoke pot, (3) related piping and equipment changes to distillation, compression, and recovery equipment, (4) increases to the cooling water capacity of the existing cooling tower by adding new cells (collectively, the Project Facilities). In addition, the permit amendment incorporates PBR Registration Nos. 166596, 168286, and 168893 by consolidation and partial incorporation of PBR Registration No. 146579 into Permit No. 102982.

3. On February 14, 2014, TCEQ issued Permit 102982 for the BOP 2X Unit pursuant to 30 Texas Administrative Code Chapter 116, Subchapter B. The permit has been amended once (November 9, 2016) and altered three times (June 7, 2016, May 2, 2019, and January 31, 2022) since initial issuance.

4. The Application includes a complete PI-1 General Application signed by Exxon's authorized representative. The Application included all Project Facilities, and the Applicant supplemented the Application to provide additional supporting information to the Executive Director (ED) of the TCEQ during the ED's technical review of the Application. A complete copy of the Application, including confidential information, was included in the Administrative Record.

5. On September 27, 2022, the ED declared the Application administratively complete and on December 13, 2022, declared the Application technically complete and issued her preliminary decision to approve the Application.

6. The ED issued her Response to Public Comment on June 8, 2023.

Notice and Jurisdiction

7. The Applicant made copies of the Application available for inspection and copying at the TCEQ central office, the TCEQ Houston regional office, and the Sterling Municipal Library in Baytown, Texas, during the entire public notice period.

8. The Applicant posted signs as required for the duration of the initial public comment period and provided appropriate public notice verification of such on January 7, 2023.

9. On September 27, 2022, the TCEQ Chief Clerk issued Notice of Receipt and Application and Intent to Obtain Air Permit and, on September 29, 2022, provided notification by mail to adjacent landowners, public officials, and other persons entitled to receive notice pursuant to TCEQ rules or who requested notice.

10. On October 4, 2022, the ED provided written notification of the Draft Permit to the state senator and state representative who represent the area where the BOP 2X Unit is located.

11. On October 20, 2022, the Applicant published Notice of Receipt and Application and Intent to Obtain Air Permit as required in English in the *Baytown Sun*.

12. On October 20, 2022, the Applicant published Notice of Receipt and Application and Intent to Obtain Air Permit as required in Spanish in *El Perico*.

13. On December 13, 2022, the ED issued a Notice of Completion of Technical Review, Preliminary Decision, and a Draft Permit for the Application.

14. On December 13, 2022, the Chief Clerk mailed a Notice of Application and Preliminary Decision for an Air Quality Permit to interested persons, public officials, and other persons entitled to receive notice pursuant to TCEQ rules or who requested notice.

15. On December 22, 2022, the Applicant published Notice of Application and Preliminary Decision for an Air Quality Permit as required in English in the *Baytown Sun*.

16. On December 22, 2022, the Applicant published Notice of Application and Preliminary Decision for an Air Quality Permit as required in Spanish in *El Perico*.

17. Notice of the Application was made to all agencies, regulatory bodies, and other persons and entities to which notification was required.

18. The ED's technical review of the Application was performed in accordance with standard TCEQ procedures and policies.

19. The ED issued Notice of Deficiency letters to the Applicant during its technical review, and, in response, the Applicant provided updated Application materials on September 26, 2022, October 19, 2022, November 4, 2022, November 6, 2022, and November 29, 2022.

20. The updated information submitted by the Applicant satisfactorily addressed all issues raised in the Notice of Deficiency letters issued by the ED.

21. Applicant complied with the public notice requirements for the Application.

22. The public comment period ended on January 23, 2023.

23. Colin Cox and Gabriel Clark-Leach on behalf of Environment Texas (ET) and the Environmental Integrity Project and Theresa E. Blackwood timely submitted public comments and requested a contested hearing before the end of the public comment period.

24. On February 14, 2023, the Applicant requested that the Application be directly referred to SOAH for a contested case hearing pursuant to 30 Texas Administrative Code section 55.210.

25. On June 8, 2023, the ED issued her Response to Public Comment and made no changes to the Draft Permit in response to public comments.

Proceedings at SOAH

26. On August 29, 2023, the TCEQ Chief Clerk filed with SOAH the Application, the Draft Permit, the Preliminary Decision issued by the ED, and other supporting documentation in the Administrative Record, which are collectively referred to as the "Prima Facie Demonstration."

27. On August 14, 2023, the Chief Clerk mailed the Notice of Public Hearing for the preliminary hearing to interested persons, public officials, and other persons entitled to receive notice pursuant to TCEQ rules or who requested notice.

28. On August 20, 2023, the Applicant published Notice of Public Hearing in English in the *Baytown Sun*.

29. On August 24, 2023, the Applicant published Notice of Public Hearing in Spanish in *El Perico*.

30. On September 28, 2023, SOAH ALJs Rebecca Smith and Meitra Farhadi held a preliminary hearing via the Zoom videoconferencing platform. ALJ Smith found that notice was proper and took jurisdiction over the Application without objection.

31. At the preliminary hearing, the ALJ Smith admitted the Prima Facie Demonstration into evidence and determined that notice of the hearing was timely and adequate and that SOAH had jurisdiction over the proceeding.

32. On September 28, 2023, at the preliminary hearing, ALJ Smith named the following as Parties to the proceeding: the Applicant, the ED, TCEQ's Office of Public Interest Counsel (OPIC), Theresa Blackwood and ET.

33. The Applicant, the ED, Protestant ET and Theresa Blackwood pre-filed direct testimony and exhibits.

34. The Applicant filed Objections to and Motion to Strike the Pre-Filed Direct Testimony of Theresa Blackwood's proposed expert Juan Flores.

35. The prehearing conference was held via the Zoom videoconferencing platform on December 15, 2023, before ALJ Farhadi. ALJ Farhadi verbally granted Applicant's Objections to and Motion to Strike the Pre-Filed Direct Testimony of Juan Flores and ordered that Mr. Flores' testimony and proposed exhibits be struck from the record.

36. On December 18-19, 2023, ALJ Farhadi presided over the hearing on the merits via the Zoom videoconferencing platform. All parties participated in the hearing on the merits through their designated representatives.

37. The record in the contested case hearing closed on January 26, 2024, after the filing of replies to closing arguments.

The Application

38. The Application seeks to amend minor New Source Review (NSR) Permit 102982.

39. The Application includes a complete PI-1 General Application signed by Applicant's authorized representative. The Application was submitted under the seal of a registered Texas Professional Engineer, Mr. Randy Parmley, P.E.

40. The Application is administratively and technically complete and includes all necessary supporting information and appropriate TCEQ forms.

41. The Application addressed all sources of air emissions associated with the Project Facilities within the BOP 2X Unit that are subject to permitting pursuant to TCEQ rules.

42. Based on current TCEQ and U.S. Environmental Protection Agency (EPA) guidance and rules, the Applicant calculated emissions for the Project Facilities using appropriate emission factors and assumptions.

43. EPA's Compilation of Air Pollutant Emission Factors, or AP-42 Factors, are representative emission factors accepted by TCEQ and EPA and widely used to calculate emissions for air permits.

44. The Application provides sufficient information about the design and operation of the emission sources to allow for complete and proper estimation of emissions and to perform Best Available Control Technology (BACT) analyses.

45. The Application seeks to amend ExxonMobil's existing Permit 102982 to authorize construction of the Project Facilities.

46. Flares are not part of the Project Facilities because the Application does not seek to add any new flares nor does the Application seek to modify any existing flares at the BOP 2X Unit.

Emission Sources

47. The Project Facilities may emit the following air contaminants: carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO_2), volatile organic compounds (VOCs), particulate matter (PM), particulate matter with a diameter of 10 microns or less (PM_{10}), particulate matter with a diameter of 2.5 microns less ($PM_{2.5}$), sulfuric acid (H_2SO_4), and ammonia (NH_3).

48. Exxon appropriately represented and properly identified emission sources in accordance with state and federal rules and guidance.

49. The Draft Permit requires the Applicant to install, calibrate, and maintain a continuous emission monitoring system (CEMS) to measure and record the in-stack concentration of NO_x and CO from proposed Furnace XXI.

50. The Applicant is not required to perform initial stack testing for proposed Furnace XXI because Furnace XXI is designed to be as similar as possible to the eight existing furnaces at the BOP 2X Unit. Furnace XXI will use the same proprietary burner design as the existing eight furnaces at the BOP 2X Unit.

51. The Draft Permit requires the Applicant to measure and record the in-stack concentration of the NH_3 concentration in the exhaust stack for proposed Furnace XXI in accordance with one of the methods identified in Special Condition 24.

52. The Draft Permit requires the Applicant to install and operate a fuel flow meter to measure the gas fuel usage for proposed Furnace XXI to comply with the Draft Permit's fuel sulfur content limit.

Plantwide Applicability Limit Permits

53. BOP holds Plant-wide Applicability Limits (PALs) for VOC, NO_x, $PM/PM_{10}/PM_{2.5}$, SO_2, CO, and H_2SO_4 in Permit No. PAL6 issued on August 24, 2005, and renewed on December 23, 2022. BOP did not request an increase in a PAL for any of these criteria pollutants in this Application.

54. PAL6 includes BOP's sitewide applicability limits, such that any expansion within those limits will not trigger major new-source review.

55. Pursuant to the PAL Rules in Texas's federally approved State Implementation Plan, major NSR is not required for a permit application at a major stationary source holding a PAL permit when the proposed emissions from new or modified facilities associated with the project combined with existing emissions at the same major stationary source fall below the PALs in the PAL permit.

56. BOP did not request an increase in a PAL for any pollutants in this Application.

57. The Application was properly reviewed as a minor NSR application because Applicant and the ED offered unrebutted evidence that the combined increased emissions from the Project Facilities and the emissions from the existing facilities at BOP will stay below the PALs in PAL6.

Best Available Control Technology

58. The BACT evaluations for the Project Facilities were conducted using Tier I of the Commission's three-tiered BACT process.

59. The TCEQ BACT evaluation is conducted using a tiered analysis approach, involving three tiers. In the first tier, controls accepted as BACT in recent permit reviews for the same process are approvable as BACT in a current review if no new technical developments have occurred that would justify additional controls as economically or technically reasonable.

60. The Application includes a complete and accurate case-by-case BACT analysis that satisfies TCEQ requirements.

61. The Applicant and the ED relied on TCEQ's guidance document entitled "Air Permit Reviewer Reference Guide, Air Pollution Control (APDG 6110)" to evaluate BACT.

62. EPA's guidance document entitled "1990 NSR Workshop Manual," offers guidance regarding environmental considerations and economic reasonableness in a BACT review for a NSR air permit application.

63. The Applicant's BACT analysis considered information from recent permit reviews of similar facilities in Texas.

64. The BACT analysis for the Application satisfied Tier I BACT for all Project Facilities.

Furnace XXI

65. BACT for all pollutants from proposed Furnace XXI is consistent with BACT for all pollutants from the same or similar furnaces in recent permits, and as determined pursuant to TCEQ guidance documents APDG 6497 and APDG 6110.

Nitrogen Oxide Emissions

66. The Applicant will achieve BACT for NO_x for proposed Furnace XXI using Selective Catalytic Reduction (SCR) to meet a maximum 24-hour average NO_x emission factor of 0.015 pound per million British thermal units of heat input (lb/MMBtu) and an annual 12-month rolling NO_x emission factor of 0.010 lb/MMBtu during routine operations.

67. BACT for hourly emissions of NO_x during planned transient maintenance, startup, and shutdown (MSS) operation modes that include decoke mode, hot steam standby, startup, shutdown, feed in, and feed out operations as defined in Permit 102982 and the Draft Permit is a NO_x emission rate of 18.00 lb/hour.

68. During planned transient MSS operations, a NO_x lb/MMBtu emission factor for proposed Furnace XXI is not practical to assign because the SCR is not in a steady state. Hourly NO_x BACT is met by restricting planned transient MSS operations to no more than 600 hours per year.

69. The annual BACT performance standard of 0.010 lb/MMBtu NO_x for proposed Furnace XXI is based on worst-case potential to emit (PTE) for both routine and planned transient MSS operation modes.

70. NO_x BACT for planned MSS for SCR will allow for online scheduled maintenance of the SCR up to 100 hours per year at a 0.066 lb/MMBtu BACT performance standard.

71. During planned MSS for SCR, proposed Furnace XXI's firing rates will be decreased such that the furnace's hourly and annual emissions will not be exceeded.

72. The ED determined the proposed BACT for MSS for SCR of 0.066 lb/MMBtu up to 100 hours per year constitutes BACT for proposed Furnace XXI.

Particulate Matter Emissions

73. Tier I BACT for PM is good design and combustion practices and gaseous fuel firing based on AP-42 emission factors, for which technical practicability and economic reasonableness have been demonstrated.

74. The Applicant properly used Natural Gas Combustion emission factors in EPA's AP-42 Compilation of Air Pollutant Emission Factors for calculating PM emissions from proposed Furnace XXI, which are the same emission factors used to calculate PM emissions from existing Furnaces XXA-XXH in Permit 102982.

75. AP-42 factors are appropriate to use to calculate PM emissions from natural gas-fired furnaces and are acceptable calculation methodologies to air permitting authorities and which the ED required to evaluate PM emissions from proposed Furnace XXI.

76. The PM emissions limits for proposed Furnace XXI in the Draft Permit are based on the furnace's PTE at its maximum rated capacity on both an hourly and annual basis.

77. TCEQ's established policy is to use AP-42 factors to calculate maximum PM emissions that ensure that the air dispersion modeling protectiveness evaluation conservatively estimates community impacts.

78. EPA and TCEQ require a facility's NSR permit emissions limits to be based on its PTE to ensure protectiveness.

79. To meet BACT, PM emission limits are properly based on a facility's PTE, not emission factors from a stack test, which have a limited operating range and are designed to show compliance with existing allowable limits.

Ammonia Emissions

80. BACT for NH_3 emissions from proposed Furnace XXI are emission limits of 10 parts per million by volume dry (ppmvd) at 3% O_2 on a 12-month rolling basis and 15 ppmvd at 3% O_2 on an hourly basis to allow for short-term operational variations.

81. The federal Clean Air Act (CAA), EPA guidance, and TCEQ guidance contemplate consideration of environmental consequences in making a BACT determination.

82. The 15 ppmvd at 3% O_2 1-hour concentration-based NH_3 limit in existing Permit 102982 and the Draft Permit is consistent with TCEQ and EPA regulatory policy and good judgment considering environmental impacts to local air quality such as an ozone nonattainment area.

83. Setting more restrictive limits on the SCR's NH_3 slip could jeopardize the SCR's control of NO_x emissions.

84. A 1-hour emissions limit for NH_3 of 10 ppmvd at 3% is not technically practicable for proposed Furnace XXI.

85. The 1-hour NH_3 emissions limit of 15 ppmvd at 3% O_2 is properly BACT because it considers environmental impacts of minimizing NO_x emissions and sets reliable, economically reasonable, and technically practicable NH_3 emissions control for proposed Furnace XXI.

Sulfur Content in Fuel

86. BACT for SO_2 and H_2SO_4 from proposed Furnace XXI is Furnace XXI firing imported low sulfur natural gas or blended low sulfur fuel gas.

87. The fuel sulfur content limit of 5 grains total sulfur/100 dry standard cubic feet (dscf) in the Draft Permit meets Tier I BACT and is BACT for Furnace XXI.

88. Furnace XXI will be fired from the same fuel and fuel gas header system that is utilized for the existing furnaces.

89. An annual fuel sulfur content limit of 0.5 grains total sulfur/100 dscf for proposed Furnace XXI, an individual furnace, is technically impracticable at the BOP 2X Unit, and, thus, not BACT.

New Source Performance Standards

90. The BOP 2X Unit is subject to the New Source Performance Standards in 40 C.F.R. Part 60, Subparts A, NNN, RRR, Kb, IIII, and VVa, and the Draft Permit incorporates such requirements.

National Emission Standards for Hazardous Air Pollutants

91. The BOP 2X Unit is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAPS) in 40 C.F.R. Part 61, Subparts A, J, V, and FF, and the Draft Permit incorporates such requirements.

92. The BOP 2X Unit is subject to the NESHAPS for Source Categories in 40 C.F.R. Part 63, Subparts A, XX, and YY, and the Draft Permit incorporates such requirements.

Performance Demonstration

93. The Applicant provided sufficient information to demonstrate that the Project Facilities have been planned to operate, and can and will be operated, so that the performance specified in the Application and in the Draft Permit will be achieved.

94. The Applicant is required by the Draft Permit to demonstrate that it is achieving the performance specified in the Application and the emission limits in the Maximum Allowable Emission Rate Table (MAERT) when the XXI Furnace begins to operate.

95. The Applicant demonstrated that proposed Furnace XXI will be designed to be as similar as possible to existing Furnaces XXA-XXH using the same proprietary burner design as Furnaces XXA-XXH and will fire the same fuel at the same rates as Furnaces XXA-XXH.

National Ambient Air Quality Standards (NAAQS)

96. The NAAQS are set by the EPA at levels protective of public health, welfare, and the environment with an adequate margin of safety.

97. Primary NAAQS are health-based standards set to protect the health of sensitive individuals, such as those with respiratory illnesses, children, and the elderly. Secondary NAAQS are established to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

98. EPA has established NAAQS for six pollutants, referred to as "criteria pollutants": SO_2, ozone, NO2, CO, lead, and PM, including PM10 and PM2.5.

99. The Applicant performed air dispersion modeling as summarized in its September 7, 2022 Air Quality Analysis (AQA), as revised on October 19, 2022.

100. Applicant performed the modeling using the American Meteorological Society/Environmental Protection Agency Regulatory Model Version 22112, the model recommended by both TCEQ and EPA for modeling complex industrial sources like the BOP 2X Unit.

101. The AQA is consistent with the TCEQ Air Quality Modeling Guidelines (AQMG), the TCEQ's primary guidance for air permit modeling audits, and was reviewed by the ED pursuant to the EPA Revision to the Guideline on Air Quality Models.

102. The ED approved the modeled emission point and area sources, source parameters and rates, and source characterizations used to represent the sources.

103. The AQA consisted of modeling the maximum predicted ground level concentrations (GLC_{max}s) of pollutants from new and modified facilities and analysis of the GLC_{max}s to determine whether they are lower than the applicable NAAQS and State Property Line Standards, and a health effects analysis of the GLC_{max}s of non-criteria pollutants through a TCEQ Effects Screening Level (ESL) analysis.

104. The maximum modeled concentrations of contaminants and averaging times for CO, NO_2, PM_{10}, $PM_{2.5}$, and SO_2 proposed to be emitted from the Project Facilities were below their respective Significant Impact Levels (SILs). Thus, a full NAAQS analysis was not required.

105. The maximum 1-hour average CO concentration predicted to result from the proposed Project Facilities is 9 micrograms per cubic meter ($\mu g/m^3$), which is below the EPA SIL and TCEQ de minimis level of 2,000 $\mu g/m^3$, and no further analysis is required for this averaging period.

106. The maximum 8-hour average CO concentration predicted to result from the proposed Project Facilities is 6 $\mu g/m^3$, which is below the EPA SIL and TCEQ de minimis level of 500 $\mu g/m^3$, and no further analysis is required for this averaging period.

107. The maximum 1-hour NO_2 concentration predicted to result from the proposed Project Facilities is 7.3 $\mu g/m^3$, which is below the EPA SIL and TCEQ de minimis level of 7.5 $\mu g/m^3$, and no further analysis is required for this averaging period.

108. The maximum annual NO_2 concentration predicted to result from the proposed Project Facilities is 0.2 $\mu g/m^3$, which is below the EPA SIL and TCEQ de minimis level of 1 $\mu g/m^3$, and no further analysis is required for this averaging period.

109. The maximum 24-hour $PM_{2.5}$ concentration, including secondary $PM_{2.5}$ impacts, predicted to result from the proposed Project Facilities is 0.7 $\mu g/m^3$, which is below the EPA SIL and TCEQ de minimis level of 1.2 $\mu g/m^3$, and no further analysis is required for this averaging period.

110. The maximum annual $PM_{2.5}$ concentration, including secondary $PM_{2.5}$ impacts, predicted to result from the proposed Project Facilities is 0.1, which is below the EPA SIL and TCEQ de minimis level of 0.2 $\mu g/m^3$, and no further analysis is required for this averaging period.

111. The maximum 24-hour PM_{10} concentration predicted to result from the proposed Project Facilities is 1 $\mu g/m^3$, which is below the 24-hour PM_{10} SIL and TCEQ de minimis level of 5 $\mu g/m^3$, and no further analysis is required for this averaging period.

112. The maximum 1-hour SO_2 concentration predicted to result from the proposed Project Facilities is 3.3 µg/m^3, which is below the EPA SIL and TCEQ de minimis level of 7.8 µg/m^3, and no further analysis is required for this averaging period.

113. The maximum 3-hour SO_2 concentration predicted to result from the proposed Project Facilities is 3 µg/m3, which is below the EPA SIL and TCEQ de minimis level of 25 µg/m3, and no further analysis is required for this averaging period.

114. For the 1-hour NO_2 NAAQS analysis of emissions from MSS on the SCR, the AQA modeled an annual average emission rate of 0.44 lb/hr for 100 hours per year consistent with EPA guidance for evaluating intermittent emissions and consistent with the averaging time of the 1-hour NO_2 NAAQS.

115. TCEQ's AQMG specifically incorporates EPA's 2011 guidance that allows qualifying air permit applicants to model impacts from intermittent emissions based on an average hourly rate rather than the maximum hourly emission rate.

116. The AQA met the criteria for reliance on the intermittent source policy and concluded that it is reasonable to apply the intermittent guidance to intermittent emissions from MSS on the SCR for the 1-hour NO_2 NAAQS analysis.

117. Annualized intermittent emissions of 0.44 lb/hr per day in the AQA supports a worst-case demonstration of how the intermittent emissions could contribute to an annual distribution of daily 1-hour maximum NO_2 concentrations.

118. SCR MSS emissions were appropriately modeled in a manner consistent with the AQMG and EPA's intermittent guidance.

119. EPA has established SILs for CO, NO_2, PM10, $PM_{2.5}$, and SO_2. If the highest predicted concentration of a pollutant at or beyond the property line due to an applicant's emissions is below the corresponding EPA SIL for that pollutant and averaging time, then no further analysis is required and compliance with NAAQS has been demonstrated.

120. The maximum 1-hour SO_2 concentration predicted to result from the proposed Project Facilities is 3.3 µg/m^3, which is below TCEQ's 1-hour de minimis level of 14.3 µg/m^3.

121. The maximum 1-hour H_2SO_4 concentration predicted to result from the proposed Project Facilities is 0.30 µg/m^3, which is below TCEQ's 1-hour de minimis level of 1.0 µg/m^3.

122. The maximum 24-hour H_2SO_4 concentration predicted to result from the proposed Project Facilities is 0.12 µg/m^3, which is below TCEQ's 24-hour de minimis level of 0.3 µg/m^3.

Health Effects Analysis

123. TCEQ conducts a health effects review using air dispersion modeling to evaluate the effects of a contaminant for which a NAAQS has not been established, but for which the TCEQ has developed an ESL.

124. The health effects analysis portion of the AQA for non-criteria pollutants properly followed TCEQ's Modeling and Effects Review Applicability guidance (MERA).

125. ESLs are conservative health or welfare-based screening levels used to evaluate the potential for health and welfare effects for constituents without a NAAQS or TCEQ Property Line standard.

126. GLC_{max}s that do not exceed the ESL for a specific chemical will not cause adverse health or welfare effects from the public's exposure to that chemical.

127. Modeled concentrations of the two non-criteria pollutants, NH_3 and light distillates, were below 10% of the ESL values for annual and hourly concentrations at all off-property locations.

128. The GLC_{max} for NH_3 predicted to result from the proposed Project Facilities is 3.41 µg/m^3, which is 1.89% of the ESL.

129. The GLC_{max} for light distillates predicted to result from the proposed Project Facilities is 304.35 µg/m3, which is 8.70% of the ESL.

130. The health effects analysis of the AQA was complete at Step 3 of the TCEQ MERA process because modeled GLC_{max}s of NH_3 and light distillates were each less than 10% of the ESL, below levels at which no further modeling or analysis is merited.

Hazardous Air Pollutants

131. The Project Facilities will comply with all applicable requirements pursuant to 30 Texas Administrative Code Chapter 116, Subchapter E relating to Hazardous Air Pollutants: Regulations Governing Constructed or Reconstructed Major Sources.

Mass Cap and Trade Allowances

132. The BOP 2X Unit will be subject to the Mass Emission Cap and Trade Program, and BOP will obtain NOX allowances, as needed, to operate the proposed project. BOP will comply with all applicable provisions regarding emission monitoring and compliance demonstration, reporting, and level of activity certification in the TCEQ Mass Emission Cap and Trade Program rules.

Protection of Public Health and Welfare

133. Project Facilities' emission of criteria pollutants from the BOP 2X Unit will not cause or contribute to a violation of any NAAQS for any criteria pollutant for any averaging period.

134. Since the proposed emissions will not cause or contribute to an exceedance of the NAAQS, no adverse health or welfare effects will result from Project Facilities' emission of criteria pollutants from the BOP 2X Unit.

135. The Project Facilities' emissions will not exceed any State Property Line standard.

136. The Project Facilities' emissions of non-criteria pollutants NH_3 and light distillates satisfy the MERA process and are protective of human health and the environment.

137. ExxonMobil demonstrated that emissions from the Project Facilities will not adversely affect public health and welfare, which includes NAAQS, additional impacts, minor new source review of regulated pollutants without a NAAQS, and air toxics review. The proposed increases in health effects pollutants will not cause or contribute to any federal or state exceedances. Therefore, emissions from the facility are not expected to have an adverse impact on public health or the environment.

Additional Findings

138. The Project Facilities will be operated in accordance with TCEQ rules in 30 Texas Administrative Code, Chapter 101 relating to circumvention, nuisance, traffic hazard, sampling, sampling ports, emissions inventory requirements, and sampling procedures and terminology, NSPS, NESHAPS, primary and secondary NAAQS, inspection fees, and emissions fees.

139. The MAERT in the Draft Permit accurately identifies all emissions sources and air contaminant emission rates for the BOP 2X Unit, including the Project Facilities.

140. The Applicant will comply with the emission limits specified in the Draft Permit's MAERTs.

Other Remaining Issues

141. With respect to all other contested issues and all uncontested and unrefined issues, the Application and the remainder of the evidentiary record contain sufficient factual information to satisfy all applicable statutory and regulatory requirements.

Transcript Costs

142. Exxon paid $6,442.00 to have the hearing transcribed and two copies of the transcript prepared. Protestant ET paid $951.56 for their own copy of the transcript.

143. The transcript was requested by the ALJ.

144. Exxon and Protestant ET participated equally in the contested case hearing and benefitted from having a transcript to use in preparing written closing arguments and responses.

145. Transcript costs cannot be assessed against the ED or OPIC because they are statutory parties who are precluded from appealing the decision of the Commission.

146. Neither Exxon nor Protestant ET indicated a financial inability to pay transcript costs.

147. Exxon and Protestant ET were each represented by attorneys in connection with the contested case hearing. Protestant Theresa Blackwood represented herself pro se.

148. Exxon and Protestant ET presented testimony and exhibits.

149. Exxon and Protestant ET should bear the cost of transcription equally.

II. CONCLUSIONS OF LAW

Jurisdiction

1. The Commission has jurisdiction over the emission of air contaminants and the authority to issue a permit under Texas Health & Safety Code §§ 382.011, .0518, and Texas Water Code § 5.013.

2. The Application was directly referred to SOAH pursuant to Texas Water Code § 5.557 and 30 Texas Administrative Code § 55.210(a).

3. SOAH has jurisdiction to conduct a hearing and to prepare a PFD in contested cases referred by the Commission. Tex. Gov't Code § 2003.047; Tex. Water Code § 5.311.

4. Notice was provided in accordance with Texas Water Code § 5.5553; Texas Health & Safety Code §§ 382.0516, .0517, and .056; Texas Government Code §§ 2001.051 and .052; and 30 Texas Administrative Code chapter 39.

5. Exxon properly submitted the Application pursuant to Texas Health & Safety Code §§ 382.0515, .0518 and 30 Texas Administrative Code §§ 116.110, .111, and .140.

Burden of Proof

6. The Application was submitted to TCEQ for a minor NSR air permit on September 7, 2022. As such, the Application is subject to the legal and regulatory provisions that are applicable to applications submitted to TCEQ after September 1, 2015. Tex. Gov't Code § 2003.047(i-1)-(i-3).

7. The filing of the Application, the Draft Permit, the ED's preliminary decision, and other supporting documentation in the administrative record of the Application established a prima facie case that: (i) the Draft Permit meets all state and federal legal and technical requirements; and (ii) the permit, if issued consistent with the Draft Permit, would protect human health and safety, the environment, and physical property. Tex. Gov't Code § 2003.047(i-1).

8. A party may rebut the prima facie demonstration by presenting evidence that: (1) relates to an issue directly referred; and (2) demonstrates that one or more provisions in the Draft Permit violates a specifically applicable state or federal requirement. Tex. Gov't Code § 2003.047(i-2); 30 Tex. Admin. Code §§ 80.17(c)(2), .117(c)(3).

9. If a party rebuts the prima facie demonstration, the applicant and the ED may present additional evidence to support the draft permit. Tex. Gov't Code § 2003.047(i-3).

10. The Applicant retains the burden of proof on the issues regarding sufficiency of the Application and compliance with the necessary statutory and regulatory requirements. 30 Tex. Admin. Code § 80.17(a).

11. The burden of proof on the issues referred to SOAH is on the Applicant by a preponderance of the evidence. 30 Tex. Admin. Code § 80.17(a).

TCAA Standards

12. Under Texas law, the Applicant may not commence construction of the new and modified facilities until it has obtained a permit from the Commission. Tex. Health & Safety Code § 382.0518(a); 30 Tex. Admin. Code § 116.110(a).

13. The responsibility for obtaining authorization for a new emission source or facility is on the person planning the construction or modification of a facility that may emit air contaminants. Tex. Health & Safety Code § 382.0518(a); 30 Tex. Admin. Code § 116.110(a).

14. Representations in the Application are conditions upon which the Draft Permit is issued. 30 Tex. Admin. Code § 116.116(a)(1).

15. The Commission shall issue a permit for a facility that may emit air contaminants upon finding that: (1) the proposed facility will use at least BACT, considering the technical practicability and economic reasonableness of reducing or eliminating the emissions resulting from the facility; and (2) there is no indication that the emissions from the facility will contravene the intent of the TCAA, including protection of the public's health and physical property. Tex. Health & Safety Code § 382.0518(b).

16. The TCAA and the Commission's rules define the term "facility" as "[a] discrete or identifiable structure, device, item, equipment, or enclosure that constitutes or contains a stationary source, including appurtenances other than emission control equipment. A mine, quarry, well test, or road is not a facility." Tex. Health & Safety Code § 382.003(6); 30 Tex. Admin. Code § 116.10(4).

17. The TCAA and the Commission's rules define the term "source" is "[a] point of origin of air contaminants, whether privately or publicly owned or operated." Tex. Health & Safety Code § 382.003(12); 30 Tex. Admin. Code § 116.10(15).

18. BACT is "[a]n air pollution control method for a new or modified facility that through experience and research, has proven to be operational, obtainable, and capable of reducing or eliminating emissions from the facility, and is considered technically practical and economically reasonable for the facility. The emissions reduction can be achieved through technology such as the use

of add-on control equipment or by enforceable changes in production processes, systems, methods, or work practice." 30 Tex. Admin. Code § 116.10(1).

19. An increase in emissions from operational or physical changes at a facility, or emissions unit at a major stationary source, covered by a PAL permit is insignificant, for the purposes of major new source review under this subchapter, if the increase does not exceed the PAL. 30 Tex. Admin. Code § 116.190(a).

20. A federal permitting applicability review is not required for the Application in accordance with 30 Texas Administrative Code 116.190, which evidences that the Application complies with 30 Texas Administrative Code § 116.111(a)(2)(H).

21. Through its prima facie demonstration and additional evidence in the record, Exxon has made all demonstrations required under federal and state laws and regulations to be issued the Draft Permit, including each of the requirements in 30 Texas Administrative Code §§ 116.111(a)(2)(A)-(L), and .111(b).

22. The Project Facilities will utilize BACT, with consideration given to the technical practicability and economic reasonableness of reducing or eliminating emissions from the facilities, in accordance with Texas Health & Safety Code § 382.0518(b)(1), 30 Texas Administrative Code § 116.111(a)(2)(C), and applicable Commission policies.

23. Consistent with Texas Health and Safety Code § 382.0518(b) and 30 Texas Administrative Code § 116.111(a)(2)(A), there is no indication that emissions from the Facility will contravene the intent of the TCAA, including the protection of the public's health and physical property.

24. The special conditions in the Draft Permit are appropriately imposed under 30 Texas Administrative Code § 116.115(c)(1) and are consistent with the TCAA.

25. ExxonMobil conducted an AQA in accordance with applicable EPA and TCEQ guidelines, which demonstrates that allowable emissions from the Project Facilities will not cause or contribute to a violation of any applicable NAAQS as required by 30 Texas Administrative Code chapter 116.

26. Exxon has made all demonstrations required under applicable statutes and regulations, including 30 Texas Administrative Code § 116.111 regarding air permit applications, to be issued an air quality permit with conditions as set out in the Draft Permit. The Draft Permit will not cause or contribute to exceedances of the NAAQS and PSD increments. 42 U.S.C. § 7475(a)(3).

27. In accordance with Texas Health & Safety Code § 382.0518(b), the Application to amend Air Quality Permit No. 102982 should be granted, pursuant to the terms contained in the Draft Permit.

Transcript Costs

28. No transcript costs may be assessed against the ED or OPIC because the TCEQ's rules prohibit the assessment of any cost to a statutory party who is precluded by law from appealing any ruling, decision, or other act of the Commission. 30 Tex. Admin. Code § 80.23(d)(2).

29. Factors to be considered in assessing transcript costs include: the party who requested the transcript; the financial ability of the party to pay the costs; the extent to which the party participated in the hearing; the relative benefits to the various parties of having a transcript; and any other factor which is relevant to a just and reasonable assessment of the costs. 30 Tex. Admin. Code § 80.23(d)(l).

30. Considering the factors in 30 Texas Administrative Code § 80.23(d)(l), Exxon and Protestant ET should each pay one-half ($3,696.78) of the court reporting and transcription costs for this case.

NOW, THEREFORE, BE IT ORDERED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY, IN ACCORDANCE WITH THESE FINDINGS OF FACT AND CONCLUSIONS OF LAW, THAT:

1. The Application by Exxon for amended Air Quality Permit No. 102982 is granted and the attached permit is issued.

2. Exxon and Protestant ET shall each pay one half ($3,696.78) of the court reporting and transcription costs for this case.

3. The Commission adopts the ED's Response to Public Comment in accordance with 30 Texas Administrative Code § 50.117. If there is any conflict between the Commission's Order and the ED's Responses to Public Comments, the Commission's Order prevails.

4. All other motions, requests for entry of specific Findings of Fact or Conclusions of Law, and any other requests for general or specific relief, if not expressly granted herein, are hereby denied.

5. The effective date of this Order is the date the Order is final, as provided by Texas Government Code § 2001.144 and 30 Texas Administrative Code § 80.273.

6. TCEQ's Chief Clerk shall forward a copy of this Order to all parties and issue the attached permit.

7. If any provision, sentence, clause, or phrase of this Order is for any reason held to be invalid, the invalidity of any provision shall not affect the validity of the remaining portions of this Order.

ISSUED:

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

_____

Jon Niermann, Chairman for the Commission