# **SOAH DOCKET NO. 582-22-0201 TCEQ DOCKET NO. 2021-0942-AIR**

APPLICATION OF PORT ARTHUR	§	BEFORE THE STATE OFFICE
LNG, LLC FOR NEW STATE AND	§	
PREVENTION OF SIGNIFICANT	§	OF
<b>DETERIORATION AIR QUALITY</b>	§	
PERMITS NOS. 158420, GHGPSDTX198	§	
AND PSDTX1572	§	ADMINISTRATIVE HEARINGS

# PROTESTANT PORT ARTHUR COMMUNITY ACTION NETWORK'S EXCEPTIONS TO THE PROPOSAL FOR DECISION

Protestant Port Arthur Community Action Network (PA-CAN) respectfully submits to the Texas Commission on Environmental Quality (TCEQ) these filed Exceptions to the Proposal for Decision (PFD) entered by the Administrative Law Judges (ALJ) regarding Port Arthur LNG, LLC's (Port Arthur LNG or Applicant) application for Air Quality Permit Nos. 158420, GHGPSDTX198 and PSDTX1572 (Application)<sup>1</sup> and related draft permit (Draft Permit) entered in the above-referenced contested case hearing before the State Office of Administrative Hearings (SOAH).<sup>2</sup> While PA-CAN includes briefing on certain analyses in the PFD that are erroneous in these exceptions, it also incorporates and relies on its closing briefing and arguments for all of the disputed issues in the case.

#### I. INTRODUCTION

Applicant Port Arthur LNG is requesting a permit for a proposed liquefied natural gas (LNG) facility to be constructed in Port Arthur, Texas. The Applicant proposes to build this facility

<sup>&</sup>lt;sup>1</sup> Port Arthur LNG Application dated Sept. 2019 (Port Arthur LNG Application) at PAL\_00001-00668 (PA-CAN Exh. 2).

<sup>&</sup>lt;sup>2</sup> Draft Permit at AR 00061-00108 (Tab B).

with inadequate pollution controls that do not meet Best Available Control Technology (BACT) standards. As shown in the hearing, multiple similar facilities in Texas and elsewhere have achieved stricter pollution limits for the same processes. PA-CAN filed comments and participated in the contested case hearing process to protect the health and safety of its members and to ensure that Port Arthur LNG complies with the Clean Air Act.

Following the evidentiary hearing, the ALJs found that the proposed emissions limits for at least two emission sources did not meet BACT, a fatal flaw in the Draft Permit under applicable state and federal law. Because the Draft Permit does not meet federal or state standards for failing to adhere to BACT, the Commission should deny it. A denial of the Draft Permit would effectively protect the environmental justice community of Port Arthur from decades of burdensome pollution that the health of many in the community cannot afford.

In addition to its general request for the TCEQ to deny the Draft Permit based on its failure to require BACT for two emission sources at the facility, PA-CAN has three other principal exceptions to the PFD for the TCEQ's consideration:

- (a) The ALJs determined that SCR NO<sub>x</sub> control for the refrigeration compression turbines was cost effective. Thus, an emission limit that reflects the use of SCR is BACT. At the hearing, PA-CAN presented evidence that the lowest permitted limits using SCR are in the range of 2 ppmvd to 3.1 ppmvd, and not 5 ppmvd as proposed by the PFD.<sup>3</sup>
- (b) PA-CAN presented sufficient evidence that an oxidation catalyst CO control on the refrigeration compressor turbines is cost-effective if SCR NO<sub>x</sub> control is required on those same turbines. The PFD failed to take this evidence into account in stating a CO limit for this emission

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<sup>&</sup>lt;sup>3</sup> PFD at 18-19.

source. CO BACT for the refrigeration compressor turbines should reflect the use of an oxidation catalyst.

(c) The ALJs found that the Applicant's Top-Down BACT analysis for  $NO_x$  and CO from the power generation turbines was faulty. The Applicant cannot rely on a three-tier analysis to justify a less protective limit. The Applicant's three-tier analysis was also faulty.  $NO_x$  and CO BACT limits should reflect the lower limits identified in the hearing.

Accordingly, PA-CAN respectfully requests that the TCEQ consider these exceptions and deny the Draft Permit, or alternatively, modify the relief in the PFD as discussed further below.

#### II. PROTESTANT'S SPECIFIC EXCEPTIONS TO THE PFD

## A. The TCEQ should deny this Permit for failing to meet BACT for two emission sources.

In the PFD, the ALJs found that the Applicant failed to demonstrate the controls and/or limits in the Draft Permit constitute BACT for two emission sources, the refrigeration compression turbines and the thermal oxidizers.<sup>4</sup> That determination should lead TCEQ to deny the Permit because it fails to comply with the relevant state and federal legal and technical requirements. To be granted a permit, an Applicant must demonstrate that emissions from the proposed facility will "comply with all rules and regulations of the TCEQ and with the intent of the Texas Clean Air Act, including protection of the health and property of the public." 30 Tex. ADMIN. CODE § 116.111(a)(2). Before a permit may be granted, "Best Available Control Technology (BACT) must be evaluated for and applied to all facilities." 30 Tex. ADMIN. CODE § 116(a)(2)(C). For facilities subject to the federal PSD permitting program, like Port Arthur LNG, the federal definition of

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<sup>&</sup>lt;sup>4</sup> PFD at 72.

BACT at 40 C.F.R. § 52.21(b)(12) applies.<sup>5</sup> Here, Port Arthur LNG failed to carry its burden that its Draft Permit satisfies legal requirements, including: (a) that the Application includes an adequate BACT analysis and (b) that the Draft Permit complies with emission limits at least as stringent as BACT. Tex. Gov't Code § 2003.047(i-3). Thus, the Draft Permit should be denied under applicable law.

Instead of denying the Draft Permit outright based on its failure to comply with BACT, the PFD provides for alternative relief and recommends that the Draft Permit be issued after it is "revised to require the Facility's refrigeration compression turbines to achieve NO<sub>x</sub> controls of 5 ppmvd at 15% O<sub>2</sub> and CO controls of 15 ppmvd at 15% O<sub>2</sub>; and the thermal oxidizers to achieve NO<sub>x</sub> controls of 0.053 lb/MMBtu." Because the ALJs found that the Draft Permit fails to require BACT for multiple sources and thus fails to comply with the Clean Air Act, the permit should be denied.

# B. Alternatively, TCEQ should set the $NO_x$ limit for the refrigeration compression turbines at 2.0-3.1 ppmvd as the ALJs determined that SCR was cost effective, and therefore BACT.

In its Application, Port Arthur LNG proposed a NO<sub>x</sub> BACT emission limit of 9 ppmvd for its refrigerant compressor turbines even though several LNG terminals permitted in the last five years have achieved significantly lower limits. <sup>7</sup> Collectively, the eight refrigerant compressor turbines are the largest source of NO<sub>x</sub> emissions at the plant, with proposed emissions of a total of 1,117 tons of NO<sub>x</sub> per year. <sup>8</sup>

<sup>&</sup>lt;sup>5</sup> "All facilities with pollutants subject to regulation under the Federal Clean Air Act (FCAA), Title I, Part C shall evaluate and apply BACT as defined in §116.160(c)(1)(A) of this title (relating to Prevention of Significant Deterioration Requirements)." 30 TEX. ADMIN. CODE §116.111(a)(2).

<sup>&</sup>lt;sup>7</sup> Port Arthur LNG Application at PAL\_000086-87 (PA-CAN Exh. 2); Draft Permit at 00063-64, 00088-92 (Tab B).

<sup>&</sup>lt;sup>8</sup> Draft Permit at AR 00063-65, 00089-92 (Tab B).

The ALJs determined that SCR to control NO<sub>x</sub> was economically reasonable and thus BACT for the refrigeration compressor turbines. In EPA's top down BACT analysis, the lowest previously permitted limit for a control technology should be utilized as the control in the absence of a showing of differences between the proposed source and the previously permitted source. PA-CAN presented evidence of recently permitted facilities showing that many had achieved significantly lower permitted limits from 2 ppmvd to 3.1 ppmvd, and the Applicant failed to show meaningful differences between these sources and its proposed plant. Given that SCR is the control technology that was not only the most effective at reducing pollution, but also cost effective for the project, the Applicant was required to use the lowest previously permitted limit for that technology to conduct a proper BACT analysis. The lowest limits identified at the hearing range from 2.0 to 3.1 ppmvd, significantly lower than the 5 ppmvd recommended by the ALJs. Further, the evidence at the hearing showed that reducing NO<sub>x</sub> to 2 ppmvd is more cost-effective than reducing NO<sub>x</sub> to 5 ppmvd.

EPA's top down analysis ultimately requires the selection of the most effective control option not eliminated in the analysis to be proposed as BACT.<sup>18</sup> The ALJs determined that was SCR.<sup>19</sup> Because achieving a NO<sub>x</sub> limit of 2–3.1 ppmvd using SCR on the refrigerant compressor turbines is both technically feasible and economically reasonable at Port Arthur LNG, it meets the

<sup>9</sup> PFD at 37.

<sup>&</sup>lt;sup>10</sup> NSR Manual at B.24, POWERS 135 (PA-CAN Exh. 8).

<sup>&</sup>lt;sup>11</sup> PFD at 18-19.

<sup>&</sup>lt;sup>12</sup> PDF at 39.

<sup>&</sup>lt;sup>13</sup> PFD at 37; Port Arthur LNG Application at PAL 000207 (PA-CAN Exh. 2); Transcript at 480:12-23 (Higgins);

<sup>&</sup>lt;sup>14</sup> PFD at 37.

<sup>&</sup>lt;sup>15</sup> NSR Manual at B.7-B,8, POWERS 118-119 ( (PA-CAN Exh. 8); Powers Direct Testimony at 16:2-3 (PA-CAN Exh. A).

<sup>&</sup>lt;sup>16</sup> PFD at 18-19.

<sup>&</sup>lt;sup>17</sup> PFD at 37.

<sup>&</sup>lt;sup>18</sup> NSR Manual at B.9, POWERS 120 (PA-CAN Exh. 8); Powers Direct Testimony at 16:5 (PA-CAN Exh. A).

<sup>&</sup>lt;sup>19</sup> PFD at 37.

definition of BACT—the maximum degree of reduction achievable, considering energy, environmental, and economic impacts and other costs.<sup>20</sup> 40 C.F.R. § 52.21(b)(12).

At the hearing, PA-CAN presented evidence that demonstrated there were lower emission limits at other permitted facilities using SCR.<sup>21</sup> However, the ALJs selected a NO<sub>x</sub> limit of 5 ppmvd as BACT instead of lower limits for the same control technology at other permitted facilities.<sup>22</sup> While PA-CAN is encouraged that the PFD recommends a lower limit than proposed in the original Application (9 ppmvd), which will result in a 44% reduction in NO<sub>x</sub> emissions, there was sufficient evidence that SCR is capable of achieving lower limits based on other permitted and operational facilities. For these reasons, PA-CAN excepts to the recommended NO<sub>x</sub> limit of 5 ppmvd as BACT for the refrigeration compression turbines.<sup>23</sup> The limit should be based on limits permitted and achieved at similar sources of 2 ppmvd to 3.1 ppmvd.<sup>24</sup>

C. TCEQ should also require the use of catalytic oxidation for the control of CO from the refrigeration compressor turbines as PA-CAN demonstrated that use of this technology is cost effective, and therefore BACT.

PA-CAN excepts to the ALJ's finding that "PACAN failed to rebut the Prima Facie demonstration that use of an oxidation catalyst to control CO emissions is not cost effective." <sup>25</sup>

At the hearing, PA-CAN did effectively rebut this contention. PA-CAN presented evidence that a CO oxidation catalyst is cost effective if SCR is required for NO<sub>x</sub>. <sup>26</sup> An oxidation catalyst occupies the same housing necessary for SCR. <sup>27</sup> Because the Applicant must install SCR for NO<sub>x</sub>, it must also re-evaluate the cost of using oxidation catalyst to control CO. At the hearing, the

<sup>&</sup>lt;sup>20</sup> NSR Manual at B.5, POWERS 116 (PA-CAN Exh. 8).

<sup>&</sup>lt;sup>21</sup> PFD at 18-19.

<sup>&</sup>lt;sup>22</sup> PFD at 37.

<sup>&</sup>lt;sup>23</sup> PFD at 37.

<sup>&</sup>lt;sup>24</sup> PFD at 18-19.

<sup>&</sup>lt;sup>25</sup> PFD at 39.

<sup>&</sup>lt;sup>26</sup> PA-CAN Closing Argument at 38-39 (citing Powers Direct Testimony at, 49:10-18, 50:6 (PA-CAN Exh. A); Transcript at 502:7-20 (Higgins)).

<sup>&</sup>lt;sup>27</sup> Powers Direct Testimony at 50:6 (PA-CAN Exh. A).

Applicant acknowledged that installing SCR would change the cost of oxidation catalyst, potentially rendering it cost effective.<sup>28</sup>

PA-CAN's evidence further directed the ALJs to other facilities achieving lower limits using catalytic oxidation as a control technology:

- The fully operational GE Frame 7EA refrigerant compressor turbines at Cove Point
   LNG use catalytic oxidation to limit CO emissions to 4 ppm.<sup>29</sup>
- Golden Pass and Lake Charles LNG have permitted BACT emission rates of 6 and 10 ppm CO respectively, also using catalytic oxidation.<sup>30</sup>

The PFD states that SCR is a cost effective on the refrigeration compression turbine.<sup>31</sup> With SCR, the use of an oxidation catalyst is also cost effective because it occupies the same housing necessary for the SCR.<sup>32</sup> Since the ALJs found that SCR is cost-effective as NO<sub>x</sub> BACT for the refrigeration compression turbines, a CO oxidation catalyst can simply be installed in conjunction with the SCR on the compressor turbines in the same manner demonstrated at Cove Point LNG and planned for Golden Pass LNG and Lake Charles LNG.<sup>33</sup> For this reason, the lower limit for the selected control technology that is cost effective must be selected as BACT. Thus, the ALJs erred in this making this finding that PA-CAN did not demonstrate that an oxidation catalyst was cost effective.

For the agency reviewing this permit, PA-CAN recommends that a lower limit for CO is achievable using an oxidation catalyst to control CO on the refrigeration compression turbines

<sup>&</sup>lt;sup>28</sup> Transcript at 502:12-20 (Higgins).

<sup>&</sup>lt;sup>29</sup> Powers Direct Testimony at 49:10-11 (PA-CAN Exh. A).

<sup>&</sup>lt;sup>30</sup> *Id.* at 49:16-18 (PA-CAN Exh. A).

<sup>&</sup>lt;sup>31</sup> PFD at 37.

<sup>&</sup>lt;sup>32</sup> Powers Direct Testimony at 50:6 (PA-CAN Exh. A).

<sup>&</sup>lt;sup>33</sup> *Id.* at 50:7-9 (PA-CAN Exh. A).

with SCR. Based on the evidence presented by PA-CAN, that limit should be in the range of 4 ppmvd at 15% O<sub>2</sub>.

D. TCEQ should require Applicant to reduce  $NO_x$  emissions to 2 ppmvd and CO emissions to 4 ppmvd for its power generation turbines as these limits are both technically feasible and economically reasonable.

PA-CAN excepts to the ALJ's finding that the use of SCR technology with low NO<sub>x</sub> burners to control NO<sub>x</sub> emissions from the power generation turbines to 5 ppmvd at 15% O2 is BACT and that the use of catalytic oxidation and good combustion practices to control CO emissions from the power combustion turbines to 9 ppmvd at 15% O2 is also BACT.<sup>34</sup> While PA-CAN does not object to the proposed technology used to comply with BACT, it maintains BACT limits should be 2 ppmvd for NO<sub>x</sub> and 4 ppmvd for CO. The ALJs' analysis errs in several ways.

First, the ALJs accepted the Applicant's proposed BACT limits despite finding that the Applicant failed to conduct a proper top down analysis.<sup>35</sup> According to the PFD, "Under the top down approach, the Application failed to provide either technical or economic reasons why the lowest identified emission limits for NO<sub>x</sub> and CO are not BACT for the nine electric power generation turbines." Despite this failure, the ALJs accepted the Applicant's proposed BACT based on an alternate analysis following TCEQ's three-tier procedure.

The ALJs' finding is based on a faulty premise that "the TCEQ's approach should lend itself to the same result," when in fact the two methods are considered equivalent and *must arrive* at the same result. As noted in the TCEQ's guidance document, known as "APDG-6110", for air pollution control reviews:

EPA has developed a "top-down" process that permitting authorities can use to ensure that a BACT analysis satisfies the applicable legal criteria. While the TCEQ

<sup>&</sup>lt;sup>34</sup> Proposal for Decision, at 44.

<sup>&</sup>lt;sup>35</sup> Proposal for Decision, at 43.

<sup>&</sup>lt;sup>36</sup> *Id* 

<sup>&</sup>lt;sup>37</sup> Proposal for Decision, at 44.

has followed a different approach (Three Tier), the end result from using either method should be the same.<sup>38</sup>

"Should", in this context, can essentially be read as "must." TCEQ made this clear in response to comments filed regarding APDG-6110's above statement. In those comments, the Texas Chemical Council stated:

TCC suggests revising this statement to "the end results from using either method will likely should be the same." This statement is too broad and might be construed to require proof that Top-Down is met for every Three-Tier evaluation. Top-Down may force other controls beyond what Tier-1 requires.<sup>39</sup>

TCEQ disagreed with the TCC's assertion and declined to change the wording of APDG-6110, stating that the APDG-6110 guidance also explains that EPA considers the three-tier and top methods as "equivalent" and that "equivalent means the same, not "likely" the same." The PFD endorses the view that top down and three-tier should only "likely" end up with the same result and that the EPA's top-down method cannot force controls beyond those required under a three-tier analysis. This view has been rejected by the TCEQ before and should be rejected by the TCEQ for this permit.

Further, as contemplated by APDG-6110<sup>41</sup>, the Applicant nevertheless chose to conduct a top-down analysis and thus should be prepared and required to accept the result of a proper top-down analysis.

Second, the ALJs erred in accepting the results of the Applicant's three-tier analysis.

According to the Applicant, the proposed limits for the power generation turbines are within the

<sup>&</sup>lt;sup>38</sup> PACAN Exh. 10, at POWERS 379 (APDG-6110 at 11).

<sup>&</sup>lt;sup>39</sup> TCEQ's Responses to Texas Chemical Council's Comments on Air Permit Reviewer Reference Guide (APDG 6110) Air Pollution Control: How to Conduct a Pollution Control Evaluation, at 4, available at <a href="https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/rtc-texas-chem.pdf">https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/rtc-texas-chem.pdf</a>.

<sup>40</sup> *Id.* 

<sup>&</sup>lt;sup>41</sup> *Id*.

range identified in review of recent permits. However, the Applicant failed to properly differentiate itself from recent permits with lower emission limits as required by the TCEQ's three-tier analysis.

As part of the Applicant's three-tier analysis, the RBLC was used to identify accepted BACT in recent permit reviews. It was acknowledged by all parties that numerous recent permits have emission limits lower than those proposed by the Applicant, including limits as low as 2 to 2.5 ppmvd NO<sub>x</sub>. <sup>42</sup> Among these facilities, it is uncontroverted that the Freeport LNG facility has emission limits of 2 ppmvd NO<sub>x</sub> and 4 ppmvd CO. <sup>43</sup> However, the ALJs accepted the views of the Applicant and TCEQ's witnesses that it was not clear if the lower emission limits identified in the other permits, including Freeport LNG and other facilities in Texas, were technically feasible. <sup>44</sup>

To justify this finding, the ALJs state that tier one does not require evaluation of the technical feasibility of a possible BACT limit. 45 This view contradicts tier one guidance, which states that while "there may...be some cases when the overall emission reduction performance level of a BACT proposal is less [i.e. a higher emission limit] than those accepted as BACT in recent permit reviews", the applicant should have "demonstrated compelling technical differences between their process and others within the same industry." And TCEQ's guidance further makes clear that during tier one and in determining if further review is necessary, the Applicant must show compelling technical differences and complete further review if it chooses to reject a lower emission limit:

If the overall emission reduction performance level of an applicant's BACT proposal is less than those accepted as BACT in recent permit reviews, but the

<sup>&</sup>lt;sup>42</sup> "Applicant identifies TCEQ's Tier I BACT guidelines for simple-cycle combustion sources to support the limits proposed in the Application (NO<sub>x</sub> to 5 ppmvd at 15% O2; and CO to 9 ppmvd at 15% O2). However, Applicant also identified in its BACT analysis several other facilities operating at lower BACT limits using simple-cycle gas-fired turbines." Proposal for Decision, at 43.

<sup>&</sup>lt;sup>43</sup> Powers Direct Testimony at 51:14-17 (PA-CAN Exh. A).

<sup>&</sup>lt;sup>44</sup> Proposal for Decision, at 44.

<sup>&</sup>lt;sup>45</sup> Proposal for Decision, at 44.

<sup>&</sup>lt;sup>46</sup> PACAN Exh. 10, at POWERS 384. (APDG-6110, at 16)

applicant has demonstrated compelling technical differences between their process and others within the same industry, a Tier II BACT analysis is required.<sup>47</sup>

In this instance, the Applicant's tier one analysis revealed numerous permits with lower emission limits, and the Applicant failed to show compelling technical differences justifying its selection of higher emission limits.<sup>48</sup>

TCEQ guidance is clear that the Applicant cannot select a less protective emission limit from a broad range of previously permitted limits without demonstrating the technical infeasibility of the lower limits. "Failure to consider all potentially applicable control alternatives constitutes an incomplete BACT analysis," according to TCEQ's APDG-6110 guidance. <sup>49</sup> In the case of its power generation turbines, the Applicant and TCEQ failed to complete a sufficient review beyond selecting a number within a range of possible emission limits. Absent such a review—which the ALJs found the Applicant did not perform—a proper three-tier BACT analysis was not completed.

Both the Applicant's top-down and three-tier BACT analyses for NO<sub>x</sub> and CO for its power generation turbines are deficient. Because the Applicant failed to show why it cannot achieve the lower limits achieved at other facilities, those limits should apply to the power generation turbines. For these reasons, BACT limits for the power generation turbines should be 2 ppmvd for NO<sub>x</sub> and 4 ppmvd for CO.

#### III. EXCEPTIONS TO FINDINGS OF FACT AND CONCLUSIONS OF LAW

PA-CAN excepts to the following findings of fact and conclusions of law proposed by the ALJs and respectfully requests they not be adopted by the Commission:

### A. Findings of Fact (74, 76, 78, 79, 85, 86)

<sup>&</sup>lt;sup>47</sup> PACAN Exh. 10, at POWERS 385. (APDG-6110, at 17)

<sup>&</sup>lt;sup>48</sup> Proposal for Decision, at 43. "[T]he Application failed to provide either technical or economic reasons why the lowest identified emission limits for NO<sub>x</sub> and CO are not BACT for the nine electric power generation turbines."

<sup>&</sup>lt;sup>49</sup> Proposal for Decision, at 60, quoting APDG-6110 at 11.

BACT for the Refrigeration Compression Turbines

#74: To meet BACT, the Draft Permit should be revised so that the refrigeration compressor turbines are permitted with a NO<sub>x</sub> emission limit of 5 ppmvd at 15% O<sub>2</sub> on a 24-rolling hour average, except during periods of maintenance, startup, and shutdown (MSS).

*Exception*: Findings of fact nos. 65, 72, and 73 state the use of SCR control technology in combination with DLN technology to reduce NO<sub>x</sub> emissions on refrigeration compression turbines is cost effective, available, demonstrated in practice, technically feasible, economically reasonable, and results in much lower NO<sub>x</sub> emission limits than those proposed by PALNG. Finding of fact no. 64 also acknowledges that permitted LNG facilities have NO<sub>x</sub> limits as low as 2 to 2.5 ppm. Accordingly, to meet BACT, the refrigeration compressor turbines should use SCR control technology to achieve NO<sub>x</sub> emission limits of 2-3.1 ppmvd at 15% O<sub>2</sub>.

**#76**: Without the use of SCR, the use of oxidation catalyst to control CO emissions would cost an estimated \$5,005 per ton of CO controlled.

*Exception*: This proposed finding of fact is irrelevant as the evidence overwhelmingly demonstrates, and the ALJs agree, that the use of SCR technology on gas-fired refrigeration compressor turbines at LNG export facilities is proven, available, demonstrated in practice, technically feasible, and economically reasonable. Therefore, the cost to control CO emissions using an oxidation catalyst *without* SCR is immaterial with respect to Applicant's refrigeration compression turbines. PA-CAN demonstrated when used with SCR technology, an oxidation catalyst is both technically feasible and cost-effective.

<sup>&</sup>lt;sup>50</sup> See ALJs Proposed Finding of Fact nos. 65 and 73.

#78: The most effective control for gas-fired refrigeration compressor combustion turbines that was not eliminated as technically infeasible or economically unreasonable is the use of good combustion practices to control CO emissions to 15 ppmvd at 15% O<sub>2</sub>.

*Exception*: This proposed finding of fact fails to consider the use of SCR technology in combination with an oxidation catalyst to control CO emissions, despite acknowledgment of the technical feasibility and economical reasonableness of using SCR technology on gas-fired refrigerator compressor turbines at LNG facilities.<sup>51</sup> Use of this combination would control CO emissions to 4 ppmvd at 15% O<sub>2</sub>.

**#79**: To meet BACT, the Draft Permit should be revised so that the refrigeration compressor turbines are permitted with a CO emission limit of 15 ppmvd at 15% O2.

*Exception*: The use of SCR technology on gas-fired refrigeration compressor turbines at LNG export facilities is proven, available, demonstrated in practice, technically feasible, and economically reasonable. Accordingly, to meet BACT, the refrigeration compressor turbines should use SCR control technology in combination with an oxidation catalyst to limit CO emissions to 4 ppmvd at 15% O<sub>2</sub>.

BACT for the Power Generation Turbines

#85: The evidence failed to demonstrate that reducing  $NO_x$  to 2-2.5 ppm or CO to 4 ppm is technically feasible.

*Exception*: Finding of fact no. 41 states either EPA's top down methodology or TCEQ's three-tiered BACT review may be used because *both should result in the same BACT determination*. The ALJs found that under the top down approach, PALNG failed to provide either technical or economic reasons why the lowest identified emissions limits for NO<sub>x</sub> (2 ppmvd) and

<sup>&</sup>lt;sup>51</sup> *Id*.

CO (4 ppmvd) are not BACT for the power generation turbines. Furthermore, PA-CAN presented evidence of similarly situated facilities with these low emissions limits, including Freeport LNG and El Paso Electric Company, which the ALJs acknowledged.<sup>52</sup> Accordingly, reducing NO<sub>x</sub> to 2-2.5 ppm or CO to 4 ppm is technically feasible.

#86: The Draft Permit meets BACT for NO<sub>x</sub> and CO emissions from the proposed power generation turbines.

*Exception*: As reducing NO<sub>x</sub> to 2-2.5 ppm and CO to 4 ppm is both technically feasible and economically reasonable under EPA's top-down methodology, the Draft Permit's proposed NO<sub>x</sub> emissions limitation of 5 ppm and CO emissions limitation of 9 ppm from the power generation turbines are not BACT.

## **B.** Conclusions of Law (26, 27, 30)

#26: Consistent with Texas Health and Safety Code § 382.0518 and 30 Texas Administrative Code § 116.111(a)(2)(C), and with the addition of amendments requiring that: (1) the refrigeration compressor turbines be permitted with a NO<sub>x</sub> emission limit of 5 ppm at 15% O<sub>2</sub> on a 24-rolling hour average, and a CO emission limit of 15 ppm at 15% O<sub>2</sub>, except during periods of MSS; and (2) the thermal oxidizers achieve NO<sub>x</sub> emission limits of 0.053 lb/MMBtu, the Facility will use BACT, with consideration given to the technical practicability and economic reasonableness of reducing or eliminating emissions from the Facility.

*Exception*: This conclusion is not supported by the evidence in the record or the findings of fact. The ALJs propose substantial amendments to the permit, specifically with respect to  $NO_x$  and CO emissions limitations from the refrigerator compressor turbines and  $NO_x$  emissions limitations from the thermal oxidizers. Furthermore, the Draft Permit's  $NO_x$  and CO emissions

<sup>&</sup>lt;sup>52</sup> See ALJs Proposed Finding of Fact nos. 81-83.

limitations from the power generation turbines are not BACT. Based on the proposed amendments and findings of fact, the Draft Permit is highly deficient, and the Facility's controls do not constitute BACT.

#27: Consistent with Texas Health and Safety Code § 382.0518 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.

**Exception**: This conclusion is not supported by the evidence in the record or the findings of fact. Considering the substantial proposed amendments to the Draft Permit, there are clear indications that emissions from the Facility will contravene the intent of the TCAA.

#30: In accordance with Texas Health and Safety Code § 382.0518, the Application for Air Quality Permit Nos. 158420, PSDTX1572, and GHGPSDTX198 should be granted under the terms contained in the Draft Permit, with the following modifications:

- An amendment that requires the refrigeration compressor turbines be permitted with a NO<sub>x</sub> emission limit of 5 ppmvd at 15% O2 on a 24-rolling hour average, except during periods of MSS;
- An amendment that requires the refrigeration compressor turbines be permitted with a CO emission limit of 15 ppmvd at 15% O2; and
- An amendment that requires the thermal oxidizers to achieve NO<sub>x</sub> emission limits of 0.053 lb/MMBtu.

**Exception**: This conclusion is not supported by the record. The findings of fact and substantial proposed amendments by the ALJs expose numerous deficiencies in the Draft Permit. Furthermore, as demonstrated above, the proposed amendments still do not constitute BACT with respect to the refrigeration compressor turbines and power generation turbines, and do not address all the inadequacies of the Draft Permit. Accordingly, the Draft Permit should be denied.

#### IV. CONCLUSION

Because the ALJs found that Port Arthur LNG failed to demonstrate that the controls for the refrigeration compression turbines and the thermal oxidizers in the Draft Permit constitute BACT, the TCEQ should deny the Draft Permit for failure comply with state and federal requirements. In the alternative, the TCEQ should consider PA-CAN's stated exceptions and revise the findings in the PFD accordingly to reflect the following:

- (a) Using SCR as the selected control technology for the refrigeration compression turbines will result in a lower limit than  $NO_x$  controls of 5 ppmvd at 15%  $O_2$  specified in the PDF. Based on other permitted LNG facilities using SCR, the BACT  $NO_x$  limit for this emission source using SCR should be 2 2.5 ppmvd at 15%  $O_2$ .
- (b) Because PA-CAN established and the PFD confirmed the cost effectiveness of SCR for the refrigeration compression turbines, an oxidation catalyst is the preferred control technology for CO and is also cost effective. Thus, there should be a lower limit for CO on the refrigeration compression turbines of 4 ppmvd at 15% O<sub>2</sub>.
- (c) Because the Applicant failed to distinguish its facility from similar sources with lower limits, BACT limits on the power generation turbines should be 2 ppmvd for NO<sub>x</sub> and 4 ppmvd for CO.

Further, the TCEQ should consider PA-CAN exceptions to the PFD's Findings of Fact Nos. 74, 76, 78, 79, 85, 86, and Conclusions of Law Nos. 26, 27, 30 that are inconsistent with these determinations as stated above. In furtherance of these determinations, the TCEQ should adopt Protestant's Proposed Findings of Fact and Proposed Conclusions of Law instead. Finally,

Protestant seeks any such other and further relief with respect to the Draft Permit or Application that the TCEQ finds warranted considering the evidence presented and the ALJs' PFD.

Dated: June 9, 2022

Respectfully submitted,

ENVIRONMENTAL INTEGRITY PROJECT

/s/Colin Cox

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ATTORNEYS FOR PORT ARTHUR COMMUNITY ACTION NETWORK

#### CERTIFICATE OF SERVICE

I certify that a copy of Port Arthur Community Action Network's Exceptions to the Proposal for Decision has been electronically filed with SOAH and the Chief Clerk of the TCEQ and served on the following parties as reflected below on June 9, 2022:

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