ORDER NO. 88565

IN THE MATTER OF THE APPLICATION OF DOMINION COVE POINT, LNG, LP FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT A GENERATING STATION WITH A NAME-PLATE CAPACITY OF 130 MW AT THE DOMINION COVE POINT LIQUIFIED NATURAL GAS TERMINAL IN CALVERT COUNTY, MARYLAND MODIFICATION TO CPCN	*	BEFORE THE PUBLIC SERVICE COMMISSION OF MARYLAND CASE NO. 9318

Issue Date: February 6, 2018

To All Parties of Record:

On August 10, 2017, Dominion Energy Cove Point LNG, LP ("DECP" or "Dominion") filed a motion with the Maryland Public Service Commission ("Commission") seeking to amend certain conditions of its Certificate of Public Convenience and Necessity ("CPCN") (hereinafter "Motion to Amend").[1] The Commission previously granted DECP's CPCN for a 130-megawatt generating station to serve its liquefied natural gas export facility at Cove Point ("LNG Facility") (together with generating station, the "Project") in Case No. 9318, on May 30, 2014.[2] In its Motion to Amend, DECP seeks to modify its CPCN to remove certain limits set forth in CPCN Condition A-IX-3 and to revise Condition A-I-3(g) to expand its operational flexibility. By Letter Order dated August 23, 2017, the Commission determined that the proposed revisions to the CPCN constitute a modification to the CPCN and that a Public

[1] ML# 216448, DECP Motion to Amend Certain Conditions of Its Certificate of Public Convenience and Necessity and Request for Expedited Consideration ("DECP Motion to Amend").
[2] Order No. 86372 (May, 30, 2014).

Comment Hearing was required. The Commission delegated the matter of conducting the Public Comment Hearing in this matter to the Public Utility Law Judge ("PULJ") Division.[3] DECP's Motion to Amend requests the following revisions to the CPCN:

- **Condition A-IX-3 and related revision to Condition A-III-4:** Remove the volatile organic compound (VOC) numeric limit in Condition A-IX-3 to reflect the infeasibility of applying a measurement methodology to the piping and equipment components, while retaining the work practice (leak detection and repair program) emission limitation. Eliminating the VOC numeric limit will not change in any way how the Project is constructed and operated, or how leaks are identified and repaired. The project-wide VOC emissions limit in Condition A-III-4 will be decreased to reflect the change.[4]

- **Condition A-I-3(g):** Revise the air permitting definition of the Project in Condition A-I-3(g) to allow for use of the existing three GE Frame 3 and the Solar Titan combustion turbines to supply power for the project as an alternative to the already approved GE Frame 5 combustion turbines if and as needed. No increase in emission limits is requested or needed for this revision.[5]

In response to a Motion by Accokeek, Mattawoman, Piscataway Creeks Communities Council, Inc. ("AMP Creeks Council" or "AMP") to expand the scope of the proceedings and opposition to DECP's request for expedited consideration, the Commission issued an order denying AMP's request to expand the scope of these proceedings and adopted a schedule setting this matter for consideration at the

[3] As directed by the Chief Public Utility Law Judge ("PULJ"), Notice of Comment and Hearing was published by DECP in various newspapers in Calvert County, Washington DC and Baltimore from September 2 through September 30, 2017, as noted in DECP's Certificate of Publication, which was filed with the Commission on October 2, 2017 (ML# 217162). DECP filed another Certificate of Publication on October 18, 2017, for notices published in Calvert County on October 11 and October 18 (ML# 217435).
[4] DECP Motion to Amend at 1-2.
[5] *Id*. at 2.

Commission's November 15, 2017 Administrative Meeting.[6] The Commission requested comments on DECP's requested modification from the Maryland Department of Natural Resources Power Plant Research Program ("PPRP") and other interested parties. PPRP along with the Maryland Department of the Environment ("MDE") Air Radiation Administration ("ARA") (collectively the "State Agencies") filed written Comments on October 30, 2017,[7] discussing their independent evaluation of DECP's request and recommendations ("State Agencies Recommendations").[8] AMP filed Opposing Comments through the Opening Testimony of William E. Powers the same day.[9] DECP and the State Agencies filed Replies to AMP's Opposing Comments on November 13, 2017,[10] while AMP concurrently responded to the State Agencies Recommendations, again through the Reply Testimony of Mr. Powers.[11] DECP also responded to the State Agencies Recommendations,[12] accepting their proposed changes. Additionally, AMP filed a Motion for Partial Summary Judgment, seeking to summarily dismiss DECP's

[6] The Public Comment Hearing in this matter was conducted on October 2, 2017, and continued on October 19, 2017, to accommodate individuals who wished but were unable to speak at the October 2nd hearing due to the venue's closing time. In response to the Commission's Notice of Public Hearing, the Commission received 65 written comments as of November 6, 2017, including comments filed by the Sierra Club ("SC") opposing DECP's Motion to Amend. ML# 217398, Comments of the Sierra Club, Case No. 9318 (Oct. 16, 2017) ("SC Comments"). Among other concerns, the SC emphasizes that rather than offset increased emissions by on-site emissions reductions, DECP requests that the Commission "jettison" Dominion's current emissions limit for volatile organic compounds ("VOCs") and allow DECP to rely on off-site emissions reduction credits ("ERCs") already in Dominion's possession. SC Comments at 1.

[7] ML# 217580, DNR/PPRP Secretarial Letter – State Agencies Comments Regarding DECP's Motion to Amend Certain Conditions of its CPCN and Request for Expedited Consideration (Oct. 30, 2017) ("State Agencies Secretarial Letter").

[8] ML# 217580, Attachment A to DNR/PPRP Secretarial Letter – State Agencies Evaluation and Recommendations ("State Agencies Recommendations").

[9] ML# 217583, Opening Testimony of William Powers and Exhibits on Behalf of AMP Creeks Council (Oct. 30, 2017) ("Powers Opening").

[10] ML# 217759, DECP Reply to Comments on its August 10, 2017 Motion to Amend Certain Conditions of its Certificate of Public Convenience and Necessity (Nov. 13, 2017) ("DECP Reply"); ML# 217768, DNR/PPRP State Agencies Reply Comments (Nov. 13, 2017) ("State Agencies Reply").

[11] ML# 217763, Reply Testimony of William Powers and Exhibits on Behalf of AMP Creeks Council (Nov. 13, 2017) ("Powers Reply").

[12] DECP Reply at 2-3.

request to remove the numeric limit for fugitive VOC emissions from CPCN Condition A-IX-3.[13] DECP filed a response in opposition, arguing substantive and procedural flaws with AMP's Motion.[14]

At the November 15, 2017 Administrative Meeting, Commission Staff recommended that the Commission accept the recommendations of the State Agencies, and representatives from the State Agencies, DECP, and AMP responded to Commission questions. Several community members were also in attendance and presented comments in opposition to the Motion to Amend and to the Project generally. The Commission took the matter under advisement and on November 22, 2017, issued Bench Data Requests ("BDR") seeking information on opportunities for additional emissions reduction facility-wide, volatile organic compound ("VOC") emissions monitoring, and air quality impacts from the GE Frame 3 and Solar Titan turbines. DECP responded to the Bench Data Requests on December 4, 2017,[15] and thereafter supplemented its response to Bench Data Request No. 1-1.[16] DECP also replied to separate comments filed by AMP concerning DECP's BDR responses.[17]

In sum, the State Agencies recommend that the Commission modify DECP's CPCN as proposed by DECP except the proposal to exclude any project sources from the

[13] ML# 217691, AMP Creeks Motion for Partial Summary Judgment (Nov. 6, 2017) ("AMP Mot. Part. Summ. J.").
[14] ML# 217769, DECP Response to AMP Creeks Council's Motion for Partial Summary Judgment (Nov. 13, 2017).
[15] ML# 218068, DECP Response to Bench Data Requests (Dec. 4, 2017) ("DECP BDR Responses").
[16] ML# 218161, DECP Supplemental Response to Bench Data Request No. 1-1 (Dec. 12, 2017) ("DECP Supp. BDR No. 1-1").
[17] ML# 218169, AMP Creeks Council Comments on DECP, PSC Case No. 9318, December 4, 2017 Response to Bench Data Requests Dated November 22, 2017 (Dec. 13, 2017) ("AMP BDR Comments"); ML# 218241, DECP Supplemental Response to Bench Data Request (Dec. 18, 2017) ("DECP Supp. BDR Responses"). The State Agencies did not file comments to DECP's responses to the Bench Data Requests.

project-wide 12-month rolling annual emission limits.[18] On the other hand, AMP opposes DECP's proposal unless certain of witness Power's recommendations are adopted. For the reasons set forth below, the Commission grants the Motion to Amend as recommended by the State Agencies, subject to further modification as set forth in this Order.[19]

DISCUSSION

A. The Proposed Amendments

Dominion's Motion to Amend comes as construction of the Project is nearing completion.[20] In its original CPCN application ("Application"), DECP estimated that the Project would comprise 15,000 piping and equipment components, based on initial piping design and vendor-supplied equipment drawings.[21] Upon delivery and installation of the Project equipment, however, DECP determined that thousands of components were not accounted for in the original Application. And once it began developing and implementing its Leak Detection and Repair ("LDAR") monitoring program under the CPCN, DECP expanded its understanding of the definition of "piping components" to include a number of additional small components. Dominion now estimates the total number of piping and equipment components is approximately 162,700, with most of the

[18] State Agencies Recommendations at 1.

[19] On October 17, 2017, several individuals and organizations filed a joint request seeking the recusal of Commissioner Anthony J. O'Donnell from all matters related to Dominion Energy's Application in Case No. 9318, based on certain contributions to his political career as a legislator prior to his appointment to the Maryland Public Service Commission, as well as public statements previously made regarding the proposed LNG export facility. Commissioner O'Donnell addressed each concern in a decision issued on November 6, 2017, in which he affirmed both personal and legal grounds for his impartiality. Commissioner O'Donnell denied the general recusal request but, in the interest of preserving the public trust, voluntarily declined to participate in the Commission's decision concerning the instant Motion to Amend. ML# 217696, Decision of Commissioner Anthony J. O'Donnell Regarding a Request for Recusal (Nov. 6, 2017).

[20] A detailed description of the Project is provided in Order No. 86372.

[21] ML# 216448, Exhibit to DECP Motion to Amend – Direct Testimony of Robert McKinley on Behalf of Dominion Energy Cove Point LNG, LP at 3 ("McKinley Direct").

increase attributable primarily to small diameter components such as instrument valves, tubing connectors, and access plugs on air cooled heat exchangers.[22] In this request, DECP seeks to reconcile the differences in the estimated, potential VOC fugitive emissions between the as-built configuration and the original Application.[23] DECP also seeks to expand its operational flexibility by adding its GE Frame 3 and Solar Titan combustion turbines as supplemental back-up power sources for the Project during an abnormal or emergency event. The material issues of concern in DECP's requests are related to air quality.[24] However, DECP claims that the proposed amendments "will not have a significant impact on air quality" or adversely impact public health.[25]

1. The Numeric Limitation for VOC Leak Emissions

By its first request, Dominion seeks to amend Condition A-IX-3 and make a related revision to Condition A-III-4. Specifically, DECP asks the Commission to remove the numeric limit of 2.53 tons per year ("tpy") for VOC fugitive emissions and define the requisite Lowest Achievable Emissions Rate ("LAER") solely in terms of a work practice emission limitation program aimed at controlling piping and equipment component fugitive VOC emissions, based on the Texas Commission on Environment Quality ("TCEQ") 28LAER LDAR program (hereinafter the "28LAER LDAR").[26] DECP argues that the VOC numeric limit is unnecessary and, more importantly,

[22] McKinley Direct at 4.
[23] DECP Motion to Amend at 3.
[24] None of the parties have raised issues concerning noise or substantive impacts to water, terrestrial, ecological, or other resources.
[25] *Id*. at 4.
[26] *Id*. at 3.

unenforceable because it is technically infeasible to measure actual fugitive emissions from piping and equipment components.[27]

Although DECP estimates that the potential VOC fugitive emissions from piping and equipment components have now increased from 2.53 tpy to 20.1 tpy,[28] DECP maintains that the VOC fugitive emissions would remain subject to the 28LAER LDAR and emissions reduction credits ("ERC") requirements under the CPCN.[29] DECP states that according to the U.S. Environmental Protection Agency's ("EPA") New Source Review Workshop Manual ("EPA NSR Manual"), a work practice like LDAR may be imposed "where enforcement of a numerical limitation is judged to be technically infeasible…."[30] LDAR provides "a methodical and disciplined process that requires owners to identify and evaluate the leaks in their facility using leak detection monitoring equipment and to take quantifiable steps to reduce and maintain lower fugitive emissions from their piping and equipment components."[31] DECP therefore attests that the 28LAER LDAR can satisfy the Project's LAER requirement for VOC emissions, and Condition A-IX-3 can be amended to remove the numeric limit for VOC fugitive emissions.

In line with the request to remove the VOC numeric limit, DECP initially proposed in its Motion to Amend to reduce the 12-month rolling project-wide emission

[27] *Id*. DECP explains that the original VOC emissions numeric limit of 2.53 tpy was based on the original potential to emit ("PTE") as provided in DECP's Application for the purpose of determining how many emission reduction credits Dominion needed to offset the emission under the non-attainment program requirements. ML# 216448, Exhibit to DECP Motion to Amend – Direct Testimony of Elizabeth H. Gayne on Behalf of Dominion Energy Cove Point LNG, LP at 4-5 ("Gayne Direct").
[28] DECP notes that 20.1 tpy is an estimate that "reflects the best available data and standard industry practice for estimating such emissions…." DECP Motion to Amend at 10. DECP does not believe it to be sufficiently accurate for enforcement purposes, however.
[29] *Id*. at 3.
[30] *Id*. at 7 & n.3 (quoting EPA NSR Manual at G.4 (Draft Oct. 1990)).
[31] *Id*. at 9.

limit for VOCs under Condition A-III-4 from 33.3 tpy to 30.8 tpy to reflect the exclusion of VOC fugitive emissions from the piping and equipment components.[32] As described in further detail later in the next section, the State Agencies recommend that the Commission increase the project-wide limit to 50.9 tpy to account for the 17.6 tpy increase in VOC PTC. DECP has since agreed to this recommendation.

2. Flexibility to Use GE Frame 3 and Solar Titan Turbines

Dominion seeks to amend Condition A-I-3(g) to allow it to operate the three existing GE Frame 3 combustion turbines and the Solar Titan combustion turbine currently serving the LNG import operations, to provide supplemental, backup power to the Project—up to 25 MW—during an abnormal or an emergency event.[33] DECP agrees to limit its operation of the GE Frame 3 and Solar Titan turbines to only those times when both of the GE Frame 5 turbines are unavailable due to an abnormal or emergency event.[34] DECP does not request an increase in the project-wide emission limits under Condition A-III-4. Rather, the amended Condition would impose the same project-wide restrictions on the GE Frame 3 and Solar Titan turbines, when used for the Project, as are currently imposed on the GE Frame 5 turbines.[35]

DECP updated its Project emissions modeling to include the GE Frame 3 and Solar Titan turbines operating at maximum, full-load hourly and annual rates for

[32] *Id*. at 11.
[33] The import facility already utilizes one Solar Titan, two GE Frame 5, and three GE Frame 3 combustion turbines. DECP Motion to Amend at 11.
[34] DECP BDR Responses at 4.
[35] DECP Motion to Amend at 15.

cumulative NAAQS, along with other existing sources at the facility.[36] DECP contends that the updated modeling demonstrates compliance with the NAAQS and PSD increment.[37] In fact, DECP anticipates that use of the Frame 3 and Solar Titan turbines could decrease overall air emissions during abnormal operating scenarios as it would facilitate more orderly startup and shutdown while minimizing the flaring of LNG, propane, and mixed refrigerant.[38] Such operational flexibility would allow the Project to draw power directly from the online Frame 3 and Solar Titan turbines, instead of waiting for the Frame 5 turbines to start, and allow DECP to maintain full operation of the Project with a single operating steam turbine.[39]

B. <u>The State Agencies' Evaluation and Recommendations</u>

Dominion provided the State Agencies with updated emissions inventories, toxic air pollutant analyses, and air dispersion modeling analyses reflecting the as-built changes to the Project. PPRP and MDE-ARA examined DECP's proposals and performed their own independent evaluation for air quality-related impacts. The State Agencies concluded from their independent modeling that the Project, as built, would not: adversely impact public health; contribute to any violation of the NAAQS or PSD increment standard; or exceed any toxic air pollutant ("TAP") air quality screening level.

[36] In its BDR Responses, DECP further explains that ordinarily one Frame 5 combustion turbine and at least one Frame 3 turbine or the Solar Titan turbine are online at all times. DECP BDR Responses at 18. Because the Frame 3 and Solar Titan turbines are authorized under Permit V to operate continuously at full load—i.e., 8,760 hours/yr—to power import operations, all four turbines could be operating at any given time without exceeding federal and State air quality standards. *Id.* at 22.
[37] DECP Motion to Amend at 15.
[38] DECP states that when both steam turbines are unavailable, the system is designed to shut down safely with the assistance of the Frame 5 turbines. If both Frame 5 turbines are also offline, the system would take longer to shut down and potentially release vapors to the flares as equipment heats up over the longer period of time. If, however, the facility can draw power from the Frame 3 and Solar Titan turbines, the potential for flaring would be reduced. *Id.* at 13-14.
[39] *Id.* at 13-14.

They recommend that the Commission modify the CPCN, incorporating their recommended changes to the Conditions.

With respect to amending Condition A-IX-3, the State Agencies have determined, based on available guidance, recent permit determinations, and consultation with the EPA, that a VOC numeric limit for piping and equipment components is practically unenforceable due to the lack of available technology that can directly quantify actual VOC fugitive emissions from these components.[40] They therefore recommend that the numerical limitation be removed. The State Agencies further point out that the estimated VOC potential to emit ("PTE")—from which the numeric limit was derived—was calculated using best available facility-specific data and methodologies from the EPA.[41] While these methodologies are useful for estimating potential fugitive emissions from piping and equipment components, they are highly conservative and can potentially overestimate the fugitive emissions actually emitted from component sources.[42]

In lieu of the numeric limit, the State Agencies conclude that implementing the 28LAER LDAR would meet the EPA's Nonattainment New Source Review ("NA-NSR") LAER requirement for VOC emissions from piping and equipment components.[43] Citing the EPA NSR Manual, the State Agencies state that DECP may use a design, operational, or equipment standard such as the 28LAER LDAR to satisfy LAER, and it

[40] State Agencies Recommendations at 7.
[41] U.S. EPA Protocol for Equipment Leak Emission Estimates (Nov. 1995), *available at* https://www3.epa.gov/ttnchie1/efdocs/equiplks.pdf (last visited Jan. 19, 2018).
[42] State Agencies Recommendations at 6.
[43] Because the project-wide potential VOC emissions exceed a 25 tpy threshold under the U.S. EPA's Nonattainment New Source Review, the Project must comply with all NA-NSR requirements. This means the facility must implement LAER pollutant control levels on all VOC emission sources and obtain emission reduction credits for projected potential emissions. *See id*. at 9.

would be consistent with recent permit determinations for similar facilities in the United States.[44]

The State Agencies have determined that removing the numeric limit will neither alter the operation of the Project nor impact the surrounding environment. The CPCN already requires DECP to satisfy LAER for piping and equipment components through the implementation of a VOC LDAR Monitoring Plan and Program.[45] They explain that "LDAR programs entail routine leak monitoring of components on specified schedules and specif[y] time intervals for when leaks must be repaired."[46] Furthermore, the 28LAER LDAR, in their view, is one of the most stringent programs in the country, using "the most restrictive options defined within federal and state regulations for the monitoring of leaks from piping and equipment components."[47] It requires more frequent monitoring of connectors for leaks than the monitoring requirements under federal and State regulations and also instructs how certain components must be installed to minimize VOC leaks.[48] To ensure proper oversight over the implementation of the LDAR program, the State Agencies recommend that DECP be required to submit its site-specific 28LAER LDAR monitoring plan to MDE-ARA for review and approval within 30 days of a Commission Order accepting the amendments.[49]

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[44] *Id*. at 7 (quoting EPA NSR Manual at G.4). The State Agencies refer to the following recent permit determinations elsewhere in the country: 1) South Louisiana Methanol LP, St. James Methanol Plant, Permit No. PSD-LA-780(M-1), issued on June 30, 2017, by the Louisiana Department of Environmental Quality; 2) Lyondell Chemical Company, Lyondell Chemical Bayport Cholate Plant, Permit No. 137789 and N244, issued on June 7, 2017, by the Texas Commission on Environmental Quality; and 3) Cameron LNG LLC, Cameron LNG Facility, Permit No. PSD-LA-766(M-3), issued on February 17, 2017, by the Louisiana Department of Environmental Quality. *Id*. at 7-8 n.4.
[45] *Id.* at 3.
[46] *Id*.
[47] *Id*.
[48] *Id*. at 4.
[49] *Id*. at 2.

Given the 17.6 tpy increase in potential VOC fugitive emissions from piping and equipment components, the State Agencies object to removing VOC component emissions from the project-wide 12-month rolling VOC emission limit under Condition A-III-4. The State Agencies reason that project-wide emission limits should include potential emissions from all sources associated with the Project. To that end, they recommend increasing the current rolling VOC limit from 33.3 tpy to 50.9 tpy and that Condition A-IX-3 include an additional sentence expressly stating that VOC emissions from piping and equipment components be included in the project-wide 12-month rolling emission limit for VOCs.[50] Accordingly, the State Agencies recommend increasing the number of VOC emissions offset credits, or ERCs, required for the Project under CPCN Condition A-I-2 to 66 tpy.[51]

On the matter of amending Condition A-I-3(g) to add the three existing GE Frame 3 combustion turbines and the existing Solar Titan combustion turbine to be used as additional sources of backup power during an abnormal or emergency event, the State Agencies conclude there will be no adverse impacts associated with granting DECP this operational flexibility.[52] The State Agencies note that DECP's existing Title V Operating Permit for Cove Point's LNG import operations covers the two GE Frame 5 turbines, three GE Frame 3 turbines, and one Solar Titan turbine. The Title VI permit already specifies short-term emission limits for the six existing turbines.[53]

The State Agencies reviewed DECP's revised emission calculations incorporating all six existing CTs to generate up to 25 MW of backup power for the Project. As part of

[50] *Id*. at 10.
[51] *See id.* at 9.
[52] *Id*. at 12.
[53] *Id*. at 10.

these revised calculations, DECP increased the usage rate for the Frame 5 turbines from 43 million British thermal units per hour (MMBtu/hr) to 158 MMBtu/hr to correct an incorrect assumption in the CPCN Application that the heat input required to produce 25 MW of power was equal to the heat output equivalent to 25 MW.[54] And while the Frame 3 and Solar Titan turbines have higher short-term emission limits and, consequently, higher hourly emission rates than the corrected Frame 5 rates, the State Agencies emphasize the fact that DECP is not proposing to increase any permitted emission levels. Thus, DECP will need to restrict its usage of the Frame 3 and Solar Titan turbines in order to comply with the project-wide annual emission limits.[55]

C. AMP Creeks Council Recommendations

AMP Creeks Council alleges material defects with DECP's proposed amendments and makes specific recommendations to mitigate the air quality impacts associated with DECP's requests. With regard to the VOC numerical limitation under Condition A-IX-3, AMP objects to removing the limit and contends that fugitive VOC emissions from piping and equipment components are quantifiable using the EPA's correlation method or the site-specific correlation method.[56] AMP explains that while DECP appropriately used the EPA's average emission factor method, based on factors published in the EPA's 1995 Protocol for Equipment Leak Emission Estimates ("EPA 1995 Protocol"), to calculate the potential VOC fugitive emissions from piping and equipment components, this method "is the least accurate of the four fugitive VOC

[54] *Id.* at 11.
[55] *Id.* at 12.
[56] Powers Reply at 7-8.

emission estimating techniques defined by the EPA…."[57] According to AMP, once the Project enters service, EPA's correlation method or the site-specific correlation method can be used to accurately quantify VOC emissions from individual components.[58] AMP states that VOC leak rate concentrations measured with LDAR can be accurately correlated to leak rates measured in American Petroleum Institute ("API") test programs.[59] Thus, AMP recommends that the Commission retain the numeric limit for VOC fugitive emissions and require DECP to use either the EPA's correlation method or site-specific correlation method to demonstrate compliance with the numeric limit.[60]

AMP disagrees that the 28LAER LDAR sufficiently meets the NA-NSR LAER requirement. Instead, AMP believes that the Bay Area Air Quality Management District Regulation 8, Rule 18 fugitive VOC emission monitoring program ("BAAQMD 8-18 Program") is superior to the 28LAER LDAR and should therefore be the applicable LAER fugitive VOC monitoring protocol for the Project. The BAAQMD 8-18 Program applies to existing VOC-emitting sources in California's San Francisco Bay Area and requires facility owners and operators to make a first attempt to repair a component leak within 24 hours of detection and fully repair the leak within 7 days of detection.[61] By contrast, the first repair and full repair requirements under the 28LAER LDAR are 5 days and 15 days, respectively.[62]

AMP further argues that DECP has an obligation to offset the previously undisclosed VOC emissions, but the 17.6 tpy increase in VOC fugitive emissions cannot

[57] *Id*. at 6.
[58] *Id*. at 4.
[59] Powers Opening at 6.
[60] Powers Reply at 4.
[61] *Id*. at 2.
[62] *Id*.

simply be "covered" by ERCs; instead, they should be mitigated on-site.[63] AMP recommends that DECP either add VOC controls to sources already included in the original CPCN—to stay within the current 33.3 tpy project-wide limit—or further reduce the project-wide NOx limit by 17.6 tpy to fully offset the increase in potential VOC emissions.[64] AMP offers three specific recommendations: 1) DECP should add flare gas vapor recovery systems to the North and South Flares, which purportedly can reduce project-wide VOC emissions by as much as 15 tpy; 2) DECP should reduce the GE Frame 7EA gas turbine NOx limit from 2.5 ppm to 2.0 ppm, which purportedly can reduce NOx by as much as 20 tpy; 3) DECP can similarly reduce the NOx limit for the Project's auxiliary boilers from 8.2 ppm to 5 ppm, which would allegedly reduce NOx emissions by as much as 15 tpy.[65]

On the matter of the GE Frame 3 and Solar Titan turbines, AMP objects to the inclusion of the Frame 3 and Solar Titan turbines as backup power sources for the Project, arguing that the older turbines do not meet the 2.5 ppm NOx LAER determination for the gas turbines in the CPCN and, consequently, will increase onsite NOx and VOC emissions unless additional control technologies are applied. AMP argues that the Frame 3 turbines will emit approximately five times more NOx on a unit basis than the GE Frame 5 turbines, while the Solar Titan turbine will emit twice as much. Additionally, the Solar Titan will emit approximately 70 percent more VOCs than a single GE Frame 5 turbine.[66] AMP disagrees with the State Agencies that use of the Frame 3 and Solar Titan turbines to directly power the Project during startup operations

[63] Powers Opening at 11.
[64] Powers Reply at 9.
[65] Powers Opening at 12.
[66] *Id*. at 15.

will reduce flaring emissions during startup. AMP notes that DECP has not affirmatively committed to lowering flaring emissions if it is allowed to use the Frame 3 and Solar Titan turbines.[67] AMP insists that "[t]he most effective way to reduce flaring emissions would be to install flare gas recovery with the North and South Flares"[68]

To mitigate emissions from the Frame 3 and Solar Titan turbines, AMP contends that the selective catalytic reduction ("SCR") systems on the turbines should be upgraded to achieve the same LAER standard as the GE Frame 5 turbines. According to AMP, this would ensure that their usage "does not also increase the actual emissions of ozone precursors at the facility."[69] AMP also notes that the Solar Titan turbine does not meet the same VOC emissions limit applied to the Frame 5 turbines. Thus, AMP recommends that the Solar Titan turbine be equipped with an oxygen catalyst system to reduce VOC emissions to a level at or below the Frame 5 limit of 0.003 lb/MMBtu.[70]

COMMISSION DECISION

Dominion's Motion to Amend concerns modifications to certain air quality conditions of the DECP CPCN,[71] following a significant change in the number of piping and equipment components for the as-built Project in the original CPCN Application. DECP's original estimate of approximately 15,000 components failed to include a substantial number of small diameter components, such as tubing components and small plugs, including heat exchanger access plugs. DECP's revised estimate now includes

[67] Powers Reply at 10-11.
[68] *Id.* at 11.
[69] Powers Opening at 16.
[70] *Id.*
[71] The parties do not ask the Commission to reopen the CPCN nor does the Commission reconsider arguments previously addressed in the CPCN proceeding. The Commission's discussion of the due consideration factors under PUA §7-207(e)(2) and related findings remain unchanged. The Motion to Amend does not implicate any of the other § 7-207(e)(2) factors save for air pollution.

those previously omitted components, as well as components considered exempt from LDAR regulations but which DECP has voluntarily included in its 28LAER LDAR program, bringing the approximate total to 162,700 piping and equipment components. These components are potential sources of fugitive VOC emissions, a precursor of ozone, GHG emissions, and Toxic Air Pollutant emissions and their potential impact on the air quality conditions of the CPCN is discussed further below.[72]

Pursuant to Section 7-208 of the Public Utilities Article of the Maryland Annotated Code (hereinafter "PUA"), the Commission must determine whether amending the DECP CPCN, as requested, would satisfy "(i) the requirements of federal and state environmental laws and standards identified by the Department of the Environment and (ii) the methods and conditions that the Commission determines are appropriate to comply with those environmental laws and standards."[73] The Commission "may not adopt a method or condition [in the CPCN] . . . that the Department of the Environment determines is inconsistent with federal and State environmental laws and standards."[74] In this regard, the Commission has historically looked to the State Agencies—PPRP and MDE-ARA—for the necessary technical expertise to understand and apply the relevant environmental regulations in CPCN matters.[75] Based on the record, which includes the State Agencies' independent evaluation of the requested CPCN modifications and recommendations, we find that amending the DECP CPCN as provided in this Order is appropriate and in the public interest.

[72] Motion to Amend at 4.
[73] PUA § 7-208(g)(1).
[74] *Id*. § 7-208(g)(2).
[75] Order No. 86372 at 28 (quotation marks omitted).

A. Numeric Standard and LAER Under Condition A-IX-3

We turn first to DECP's request to remove the numeric limit for VOC emissions under Condition A-IX-3,[76] which provides:

> VOC emissions from component leaks shall not exceed 2.53 tpy from all components associated with the project on a 12-month rolling basis through the implementation of the VOC LDAR Monitoring Plan and Program.[77]

The DECP Liquefaction Project is located in Calvert County, which is situated in a non-attainment area for ozone. As such the Project is subject to an "emission limitation" for fugitive emissions of VOC, an ozone precursor.[78] Maryland Department of the Environment Regulations, COMAR 26.11.17.03.B(2), requires that the emission limitation specify the "lowest achievable emissions rate," or LAER. The Clean Air Act defines an emission limitation as "a requirement established by the State or the Administrator which limits the quantity, rate, or concentration or emissions of air pollutants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction, and any design, equipment, work practice or operational standard promulgated under this chapter."[79] The EPA recognizes that:

> Where technically feasible, LAER generally is specified as both a numerical emissions limit (e.g. lb/MMBtu) and an emissions rate (e.g., lb/hr). Where numerical levels reflect

[76] In its Motion for Partial Summary Judgment, AMP argues that DECP agreed during the original CPCN proceeding that a numerical limitation could be complied with and, therefore, is judicially estopped from asserting that enforcement of that limit is technologically infeasible. AMP Mot. Part. Summ. J. at 10. Notwithstanding the procedural nature of AMP's motion, which we note is based on legal argument, we find the record devoid of any concession by DECP that actual fugitive emissions could be measured accurately or that estimated emissions could be used to reflect actual fugitive emissions for the purpose of enforcing a numeric limit. The motion is denied accordingly.
[77] Attachment A to Order No. 86372 – Final License Conditions, Condition A-IX-3.
[78] COMAR 26.11.17.03.
[79] 42 U.S.C. § 7602(k).

> assumptions about the performance of a control technology, the permit should specify both the numerical emissions rate and the control technology. In some cases *where enforcement of a numerical limitation is judged to be technically infeasible*, the permit may specify a design, operational, or equipment standard; however, such standards must be clearly enforceable, and the reviewing agency must still make an estimate of the resulting emissions for offset purposes.[80]

Under the Clean Air Act, LDAR, as a work practice, can satisfy the LAER requirement for VOC emissions where enforcement of a numerical limitation is technically infeasible.

1. The Numerical Limitation for VOC Fugitive Emissions

We begin by examining why the numerical limitation was included as part of Condition A-IX-3. The State Agencies explain that at the time of the CPCN proceeding in 2014, there were few permitted LNG facilities, and EPA's NSR Manual had not been applied to VOC fugitive emissions from piping and equipment components at those facilities. Instead, those few facilities were subject to a VOC numeric limit and were required to implement an LDAR program as LAER for component leaks. As a result, the State Agencies included in their proposed CPCN conditions a numeric limit along with LDAR to remain consistent with similar permit determinations of that time. Since then, the interpretation of VOC LAER for piping and equipment components at LNG and other

[80] EPA NSR Manual at G.4 (emphasis added). Additional guidance from the EPA on VOC emissions from hydrotreaters and hydrogen units at gasoline refineries provides that: "it is EPA's belief that for VOC emissions from hydrotreaters and hydrogen units, at both large and small refiners, compliance with an equipment leak control program (equipment modifications, and leak detection and repair) equivalent to the Hazardous Organic National (HON) Emission Standards for Hazardous Air Pollutants . . . would generally represent [Best Available Control Technology. This is the most stringent control level achievable for VOCs from these units. * * * The control option represents the most stringent control level achieved or contained in a [State Implementation Plan], it therefore also represents LAER for those units." Memorandum from John Seitz, EPA OAQPS, to Air Division Directors, Regions I-IX-BACT and LAER for Emissions of Nitrogen Oxides and Volatile Organic Compounds at Tier 2/Gasoline Refinery Projects (Jan. 19, 2001).

similar facilities has evolved to address practical concerns arising out of enforcement challenges.[81]

Fugitive emissions are "those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening."[82] The State Agencies explain that fugitive VOC emissions from piping and equipment components easily and immediately dissipate into the ambient air, and there is no available technology that can directly and accurately quantify actual fugitive emissions from these components. While the 28LAER LDAR includes methods for measuring VOC concentration from components to determine the presence of a leak, those methods do not measure the leak rate for VOC emissions. According to the State Agencies, "there is no way to calculate the mass of VOCs emitted from a leaking component without also knowing the flowrate of the leak."[83] Thus, the State Agencies conclude that a VOC numerical limitation for fugitive emissions from piping and equipment components is practically unenforceable and should be removed.

Although AMP contends that VOC fugitive emissions are quantifiable using EPA correlation methods, these correlation protocols rely on calculations, much like estimates, and utilize factors developed specifically for the petroleum industry. While we do not dismiss the use of these factors for estimation purposes,[84] we are persuaded by the State Agencies' response that these factors are neither appropriate nor sufficient to accurately demonstrate compliance with a LAER emissions limitation. Nothing in the record

[81] State Agencies Recommendations at 8.
[82] 40 C.F.R. § 70.2.
[83] State Agencies Recommendations at 4.
[84] AMP provides several examples of projects for which DECP's consultant, Trinity Consultants, used EPA's VOC emission factors to estimate VOC PTE at similar LNG facilities and processing plants.

establishes that the use of correlation factors formulated for the petroleum industry can produce accurate measurements of VOC leak rates from piping and equipment components at a LNG facility. We find that the lack of available methods and technology, at present, to directly and accurately measure leaking VOC emissions from piping and equipment components makes it difficult—if not impossible—to determine whether DECP has complied with any specific or associated numerical limitation, which makes enforcement infeasible. Where "enforcement of a numerical limitation is judged to be technically infeasible," the Clean Air Act and the EPA allow the use of LDAR to satisfy LAER.

2. The TCEQ 28LAER LDAR Program

DECP and the State Agencies agree that removing the VOC numerical limitation will not change how the Project is constructed and operated. Nor will it affect how VOC leaks are identified and repaired. The State Agencies identify the 28LAER LDAR as one of the most stringent programs applied to similar LNG facilities. For example, the State Agencies note that the 28LAER LDAR applies the most stringent definition of a "leak" as "any instrument reading above 500 ppmv…."[85] It also provides for how certain components must be installed (e.g., piping connections must be welded or flanged; pumps and compressors must be equipped with shaft sealing systems that prevent or detect VOC emissions).[86] To limit fugitive VOC emissions, the 28LAER LDAR requires

[85] State Agencies Recommendations at 3. According to the EPA, every LDAR program will include a definition of "leak" that establishes a threshold standard, which can vary by regulation, component type, service (i.e., light or heavy liquid, gas or vapor), and monitoring interval. U.S. EPA Leak Detection and Repair Compliance Assistance Guidance: A Best Practices Guide at 11 (Oct. 2007) ("EPA LDAR Best Practices"). EPA guidance provides that most New Source Performance Standards have a leak definition of 10,000 ppm, and many National Emission Standards for Hazardous Air Pollutants use a leak definition of 500 ppm or 1,000 ppm. *Id*.

[86] State Agencies Recommendations at 4.

DECP to make a first attempt at repair within 5 days of any detected leak. The leak must be fully repaired no later than 15 days following detection, and repaired components must be re-monitored to confirm that the repair stopped the leak.[87]

AMP, on the other hand, contends that the BAAQMD 8-18 program is more rigorous because it requires a shorter time frame in which a repair must be first attempted and then completed, from the time the leak is detected. Furthermore, AMP highlights the fact that the EPA NSR Manual recognizes California air districts as necessary sources of information for evaluating appropriate Best Available Control Technology ("BACT") and LAER. While the BAAQMD 8-18 Program may require that component leaks be repaired within a shorter time frame, the Commission observes, however, that the BAAQMD 8-18 Program appears to be specific to the petroleum industry and chemical industry, and includes those facilities situated in California's nonattainment air quality profile. As with the questioned propriety of using petroleum industry-derived correlation factors to quantify VOC leak emissions at LNG facilities, the State Agencies likewise conclude it would be inappropriate to impose rules created specifically for the petroleum industry onto natural gas facilities.[88] We need not decide the question of appropriateness here. Rather, we interpret the EPA NSR Manual as requiring DECP to consider the California air districts as an information source. We do not read the NSR Manual or other EPA guidance as mandating that DECP must adopt the same BACT and LAER standards as the California air districts. Indeed, the State Agencies point to three recent permitting determinations in 2017 where implementing the TCEQ 28LAER LDAR

[87] *Id.*
[88] AM Hr'g Tr. 30-31.

monitoring program was deemed sufficient to satisfy LAER level of pollution control for piping and equipment controls at similar facilities.[89]

We concur with the State Agencies and find the 28LAER LDAR to be a leak detection and repair program capable of satisfying VOC LAER for the Project. We further note that Condition A-IX-1(c) requires DECP to "[t]ake immediate action to repair all observed VOC leaks that can be repaired within 48 hours." Thus, to minimize the local impacts of VOC component leaks to the best extent possible, we direct DECP to make every effort to make a first attempt to repair a component leak as soon as possible after it is detected, ideally, within 24 hours but no later than the permitted 5 days under the 28LAER LDAR, and a full repair within 15 days.[90] We further direct DECP to submit its 28LAER LDAR monitoring plan to MDE-ARA for review and approval. This will further allow the State Agencies to provide necessary oversight to ensure that VOC fugitive emissions are minimized.

3. Monitoring and Reporting Requirements under LDAR

Pursuant to the 28LAER LDAR program, DECP will implement a more stringent monitoring procedure than routine photoionization detection ("PID") quarterly monitoring.[91] DECP will perform monthly imaging of the majority of the Project's piping and equipment components using an optical gas imaging ("OGI") camera and

[89] AMP argues that the Commission should not give any weight to these examples insofar as the State Agencies did not attach any verifiable samples of these permits and, therefore, the examples are hearsay. Powers Reply at 8. As provided in the Public Utilities Article, the Commission is not bound by traditional rules of evidence. PUA § 3-101(b). Consequently, the Commission can in its discretion consider the State Agencies' proffered evidence for its probative value. Here, some of the permits identify potential fugitive emissions from piping and equipment components but specifically state that the emissions values are estimates; the applicable requirement is to demonstrate compliance with LAER through the implementation of a TCEQ 28LAER LDAR program. State Agencies Reply at 3.

[90] *See* EPA LDAR Best Practices at 13, 23.

[91] State Agencies Recommendations at 4.

annually using a handheld gas analyzer. The use of OGI camera technology will allow DECP to cover greater distances and monitor difficult-to-monitor or unsafe-to-monitor leaking components.[92] DECP will also be required to monitor on a quarterly basis, using an approved gas analyzer, probing the surface of all accessible components with the potential for fugitive emissions. Finally, DECP will conduct weekly audible, visible, and olfactory ("AVO") walkthrough inspections of the connectors in the facility, and monthly AVO inspections of all components, to identify evidence of VOC leaks.[93] DECP will record any observed fugitive emissions from piping and equipment components in the LDAR monitoring database and designate each component for repair using a unique identification number.

DCEP agrees to generate monthly, quarterly, and annual reports, which it will submit to the State Agencies. The monthly reports will show the total calculated monthly mass-based fugitive VOC and GHG emissions from piping and equipment components under its LDAR program. The quarterly reports will document LDAR-related deviations from permit conditions in additional monthly and 12-month rolling mass emissions for VOCs and GHGs. Given the public attention concerning this Project, transparency with regard to DECP's monitoring efforts and compliance with the 28LAER LDAR plan is in the public interest. To that end, we further direct DECP to make publicly available, upon request, any monitoring report filed with the State Agencies. Additionally, to provide further transparency and ease of access, we encourage DECP to consider voluntarily making any monitoring reports filed publicly also available on its website and through other company communications mediums.

[92] *Id.*
[93] DECP BDR Responses at 13-14.

4. Air Quality Impacts and Mitigation of VOC Emissions

Regarding the air quality impacts of the proposed amendments, we are guided by the State Agencies' independent evaluation of the as-built design changes. The State Agencies developed their own revised potential emissions calculations and toxic air pollutant emission calculations to reflect the Project's as-built changes and the proposed amendments.[94] Differences in the State Agencies' revised emission calculations and those provided by DECP were largely within acceptable ranges, and where the variation exceeded acceptable ranges, DECP's calculations were more conservative than the Agencies' calculations. Based on these revised calculations, the State Agencies determined that "the project-wide potential emissions, including all as-built changes, remain *below* the project-wide annual emission limits established in the 2014 CPCN, with the exception of VOC."[95] The State Agencies performed additional air dispersion modeling analysis for 21 toxic air pollutants ("TAP") and similarly concluded that all pollutants' modeled impacts fell below their respective allowable ambient levels.[96] While the as-built changes resulted in an increase in short-term potential emissions from certain sources, the resultant impacts on ambient air quality "do not cause or contribute to a violation of any EPA-established [NAAQS] or [PSD] increment standard, and that

[94] The State Agencies' revised potential emissions calculations and toxic air pollutant emission calculations included: the approximately 162,700 piping and equipment components; the increase in project-wide VOC emissions to 50.9 tpy; revisions to the usage rate of the existing GE Frame 5 combustion turbines; additional emission calculations for adding the existing Frame 3 and Solar Titan turbines to provide supplemental backup power; the revision of the MMBtu/hr rate for the auxiliary boilers from 435 MMBtu/hr to 427MMBtu/hr (each); the revision of the emergency generator horsepower from 1550 hp to 1502 hp; the addition of the use of propane as a backup fuel for the flare pilots; updated high heat values for various gas streams; and minor updates to several stack parameters resulting in slight changes to stack flowrate. State Agencies Recommendations at 12-13.
[95] *Id*. at 13 (emphasis added).
[96] *Id*.

applicable emissions will not exceed ambient screening levels for TAPs established by MDE-ARA."[97]

DECP informs us that it has taken steps to minimize the potential for leaks from piping and equipment—e.g., it purchased piping components with specifications requiring that components either not leak or be appropriately sealed for their intended use, and welded together over 45,000 connections at the facility.[98] Responding to AMP's three specific on-site recommendations to further reduce project-wide VOC and NOx emissions, DECP states that:

> 1) DECP has already included flare gas recovery on units throughout the Project to minimize the use of the North and South Flares;
>
> 2) the Commission previously considered and rejected witness Powers' recommendation during the CPCN proceeding that a NOx limit of 2.0 ppm be applied to the GE Frame 7EA and auxiliary boilers; and
>
> 3) in order to achieve AMP's suggested 2.0 ppm limit, DECP would require the sole use of pipeline quality natural gas, which would result in increased flaring and higher emissions of VOC and NOx.[99]

DECP has identified six separate features of the Project designed to minimize flaring and reduce emissions: feed gas recycling; LNG vaporizer system; propane recovery; low pressure vent collection; mixed refrigerant recovery, and ship cooldown boil off gas recovery.[100] Furthermore, its normal operations and startup operations do not appear to require flaring. While it has been suggested that the Project's Frame 7EA and

[97] *Id*. at 14.
[98] McKinley Direct at 4-5.
[99] DECP BDR Responses at 6-7.
[100] *Id*. at 7-8.

auxiliary boilers can achieve a lower NOx limit of 2.0 ppm,[101] the Commission previously determined that a NOx limit of 2.5 ppm was the LAER for this system. During the CPCN proceedings, the parties extensively discussed the feasibility of achieving a NOx limit of 2.0 ppm for the GE Frame 7EA and auxiliary boilers. It was explained that the Project, as designed, uses recovered process gas, which has higher nitrogen content, to fuel the Frame 7EA combustion turbines and auxiliary boilers. Notwithstanding the higher nitrogen content, process gas results in lower overall NOx emissions by reducing the need to flare gas on-site.[102] We do not reconsider the issue here, as the Commission's decision has been affirmed by the appellate courts.

5. Emission Reduction Credits

The ten-fold increase in piping and equipment components raises the potential for VOC fugitive emission leaks from these components and requires more offsets, or emission reduction credits ("ERCs").[103] Condition A-I-2 identifies the amount of ERCs, or offsets, that DECP is required to purchase because its project-wide potential VOC emissions will exceed 25 tpy:

> The CPCN serves as the Prevention of Significant Deterioration (PSD) approval, Nonattainment New Source Review (NA-NSR) approval, and air quality construction permit for the DCP Project and does not constitute the permit to construct or approvals until such time as DCP has provided documentation demonstrating that nitrogen oxides (NOx) emission offsets totaling at least 375 tons and volatile organic compound (VOC) emission offsets totaling

[101] AMP argues that the South Coast Air Quality Management District ("SCAQMD") promulgated Best Available Retrofit Control Technology ("BARCT") emission limits for existing gas turbines and boilers burning process gas at refineries in the district. Accordingly, the 2016 NOx BARCT limit for such gas turbines and auxiliary boilers is 2.0 ppm, which AMP states is achievable and demonstrated through additional commercially available control technologies. AMP BDR Comments at 3-4. This argument was presented and addressed at the original CPCN proceeding. *See* Order No. 86372 at 67-69.
[102] *See* Order No. 86372 at 67-69.
[103] DECP Motion to Amend at 3.

> at least 45 tons, each based on an offset ratio of 1.3 to 1.0 have been obtained and approved by MDE-ARMA and are federally enforceable.[104]

The State Agencies estimate that, based on 162,700 piping and equipment components, the project-wide VOC PTE will increase to 50.9 tpy. DECP is required under COMAR 26.11.17 to obtain 66 tons of offset credits, and Condition A-I-2 is amended to reflect this new ERC calculation. We note that DECP has obtained 166 tons of VOC ERCs, well in excess of the COMAR requirement.[105]

6. Additional Commitments to Reduce Emissions Facility-wide

We are cognizant that Cove Point is a large facility with a significant impact on the surrounding community. Therefore, we sought opportunities to further minimize adverse impacts on environmental quality. In our Bench Data Request, we asked DECP, "[W]hat additional measures could the Company implement to reduce the project-wide emissions from the Liquefaction Facility ("Project") in a localized, meaningful way . . . . ?" DECP's response identified two additional measures which we direct it to implement. The first measure, which we discuss immediately below, mitigates the 17.6 tpy increase in potential VOC emissions by further reducing ozone precursor emissions facility-wide. The second measure pertains to DECP's operation of the Frame 3 and Solar Titan combustion turbines for the Project, which we address later in this Order.

DECP proposes to place one of two existing water ethylene glycol ("WEG") heaters on standby and not operate both, except when necessary to provide FERC-

[104] Attachment A to Order No. 86372 – Final License Conditions, Condition A-I-2. The offset ratio under Condition A-I-2 is based on COMAR 26.11.17.
[105] State Agencies Recommendations at 9.

authorized service for which DECP is contractually bound.[106] Prior to reactivating the heater, DECP will first provide written notification to MDE.[107] DECP states that placing one WEG heater on standby would yield reductions in overall NOx potential emissions between 4.33 tpy and 17.7 tpy, as well as reductions in overall VOC potential emissions between 0.72 tpy and 1.94 tpy.[108] We note the caveat, however, that the WEG heater would be reinstated if needed for the FERC-certified service. Nevertheless, we will accept this additional condition and further direct DECP to make every effort to achieve the maximum reductions in overall NOx and VOC potential emissions—i.e., 17.7 tpy and 1.94 tpy, respectively.

We are also encouraged by DECP's commitment to reduce facility-wide potential emissions through other state programs. Under the Limited Industrial Exemption Set-Aside Account of the Maryland CO_2 Budget Trading Program, DECP is committed to implementing a separate greenhouse gas monitoring and repair process at the Cove Point Import Facility,[109] as well as evaluating opportunities to replace its equipment and vehicle fleet with cleaner burning equipment and hybrid or electric vehicles.[110] We encourage DECP to make its greenhouse gas monitoring and repair process publicly

[106] DECP Supp. BDR No. 1-1 at 1-2.
[107] *Id*. at 2. DECP operates two WEG heaters as part of the process for converting LNG back to a gaseous state when sending gas through the natural gas pipeline system. DECP BDR Responses at 5. Pursuant to its federal contract with the Federal Energy Regulatory Commission ("FERC") for certain services, DECP must ensure the WEG heaters are available if called upon for that service. DECP Supp. BDR No. 1-1 at 1. The lower projected reductions of 4.33 tpy and 0.72 tpy in NOx and VOC potential emissions, respectively, are based on vendor guarantees per heater, while the upper projected reductions of 17.7 tpy of NOx and 1.94 tpy of VOC are based on EPA's AP-42 emission factors used in DECP's Title V permit renewal application submitted to MDE in June 2017. DECP Supp. BDR No. 1-1 at 2.
[108] DECP Supp. BDR No. 1-1 at 1.
[109] DECP BDR Responses at 2.
[110] *Id*. at 5.

available, and share its progress in replacing its equipment vehicle fleet with cleaner burning models with the community.

B. Project-wide VOC Emissions Limit under Condition A-III-4

Condition A-III-4 specifies project-wide emissions limits for all types of pollutants that are expected from the Project and currently requires DECP to comply with a project-wide 12-month rolling emission limit for VOCs of 33.3 tpy. None of the parties dispute the State Agencies' recommendation that Condition A-III-4 be amended to include the increase in potential VOC fugitive emissions from piping and equipment components. We find no reason in the record to reject the State Agencies' recommendation on this point and hereby amend the 12-month rolling emission limitation for VOCs in Condition A-III-4 to 50.9 tpy.

C. Additional Operational Flexibility Under Condition A-I-3(g)

Condition A-I-3(g) currently identifies two existing GE Frame 5 combustion turbines as sources of back-up power—up to 25 MW on a continuous basis—for the Project's primary power units, which consist of two 65 MW heat recovery steam turbines. DECP assures us that in most cases the Frame 5 turbines will be sufficient and are the preferred backup power sources for the Project's power needs because they are more efficient than the GE Frame 3 and Solar Titan turbines. However, the GE Frame 5 turbines, unlike the Frame 3 and Solar Titan turbines, are incapable of starting up after a power loss without any support power. Regardless, in response to our Bench Data Request DECP agreed not to operate the Frame 3 or Solar Titan turbines for the Project, except in the case of an abnormal or emergency event. Such an event would involve a scenario where one or both steam turbines are unavailable and both Frame 5 turbines are

also offline. In those instances, it would be necessary to operate the Frame 3 and Solar Titan turbines to power up the GE Frame 5 turbines, as well as advantageous to provide supplemental power to the Project for auxiliary loads—e.g., lighting, control system power, lube oil pumps and air compressors—until the Frame 5 turbines are restored.[111]

The Frame 3 and Solar Titan turbines have higher hourly emission rates than the Frame 5 turbines, which could lead to short-term increases in NOx emissions at certain times. However, DECP does not request, nor do we find reason, to increase the project-wide NOx emission limit in Condition A-III-4. The existing project-wide emission limits would force DECP to be judicious in operating the less efficient turbines. Moreover, the State Agencies concluded in their independent air dispersion modeling that operating the Frame 3 and Solar Titan turbines as proposed will not result in any adverse impact to public health. Specifically, their modeling "demonstrated that there will be no exceedance of any EPA-established National Ambient Air Quality Standard (NAAQS) or Prevention of Significant Deterioration (PSD) increment standard."[112]

Although AMP suggests that Frame 3 and Solar Titan turbines can, through additional control technologies, achieve the same NOx emission controls as the Frame 5 turbines, the Commission notes that the Frame 3 and Solar Titan turbines are different turbines with different control efficiencies, emission rates, and emission limits. These turbines are not without NOx control technologies. They are already equipped with NOx continuous emission monitoring systems and add-on SCR controls to reduce NOx emissions. While we appreciate AMP's suggestion that additional control technologies exist that can be employed to achieve even greater NOx emissions reductions, AMP has

[111] DECP Motion to Amend at 13.
[112] State Agencies Reply at 4.

not pointed us to evidence in the record establishing that the suggested control technologies are compatible with the Frame 3 and Solar Titan turbines, specifically, and can be combined with already present systems to demonstrably achieve NOx limits of 2.5 ppm or better.

To the extent that AMP's comments are based in part on a perceived attempt by DECP to circumvent subjecting the Frame 3 and Solar Titan turbines to the same LAER review for the Project as with the other turbines, we agree with the State Agencies that no LAER re-evaluation is required in this instance. DECP does not propose to modify these turbines. The State Agencies point out that the Frame 5 turbines were not subjected to a LAER re-evaluation during the CPCN proceeding for the Project because DECP did not propose to modify them. They explain that the LAER NOx emission limit of 2.5 ppm for each Frame 5 turbine was previously established in the Title V permitting process in 2009.[113] DECP agreed to operate the Frame 5 turbines with respect to the Project "within their permitted emission rates and at or below their permitted maximum MMBtu/hr rating under the Title V permit.[114] Similarly, DECP confirms that it will continue to operate the Frame 3 and Solar Titan turbines within their permitted emission rates and at or below their permitted maximum MMBtu/hr rating as specified in the current Title V permit. Their usage to support the Project, as requested, does not constitute a change in their method of operation. Whereas the State Agencies have determined that allowing DECP the operational flexibility to use the Frame 3 and Solar Titan turbines for the stated

[113] *Id*. at 4.
[114] *Id*.

limited purpose will not result in any change in their operation or any increase in their already allowable emissions,[115] we concur and grant DECP's request accordingly.

D. Conclusion

Based on the record, the Commission concludes that modifying the DECP CPCN in accordance with the findings discussed herein is in the public interest and would not adversely impact public health or cause any violation of federal or State environmental laws and standards.

IT IS THEREFORE, this 6th day of February, in the year Two Thousand and Eighteen, by the Public Service Commission of Maryland,

ORDERED: (1) that the Motion of Dominion Energy Cove Point LNG, LP to Amend Certain Conditions of its Certificate of Public Convenience and Necessity is hereby granted as modified by the findings and decisions rendered herein;

(2) that the Recommended Licensing Condition Amendments to Order No. 86372, provided in Attachment C to the State Agencies' Comments Regarding DECP's Motion to Amend Certain Conditions of its CPCN and Request for Expedited Consideration (ML# 217580), are accepted herein for the purpose of making typographical corrections to the Final License Conditions of the Certificate of Public Convenience and Necessity attached to Order No. 86372 as Appendix A, where appropriate, and said Final License Conditions shall be modified accordingly;

(3) that the Final License Conditions in Appendix A attached to Order No. 86372

[115] *Id*. at 5.

in this case are further modified to substitute Conditions A-IX-3, A-III-4, A-I-2, and A-I-3(g), which Conditions are included as licensing conditions of the Certificate of Public Convenience and Necessity granted in Order No. 86372, in accordance with the findings in this Order and are attached hereto as Appendix One;

(4) that Condition A-IX-3 of the Final License Conditions in Appendix A attached to Order No. 86372 is further modified to include the requirement that Dominion Energy Cove Point LNG, LP shall submit a copy of its 28LAER LDAR monitoring plan to the appropriate State Agencies, in accordance with the findings in this Order, within 30 days of the date of this Order;

(5) that the Final License Conditions in Appendix A attached to Order No. 86372 in this case are further modified to include the requirement that Dominion Energy Cove Point LNG, LP shall not operate both existing Water Ethylene Glycol Heaters at the same time, except when necessary to provide contracted, FERC-authorized services and, in that event, DECP shall provide prior written notification to MDE;

(6) that the remaining Final License Conditions in Appendix A attached to Order No. 86372 in this case, where not so expressly modified herein, which said Final License Conditions are included as licensing conditions of the Certificate of Public Convenience and Necessity granted in Order No. 86372, shall remain intact and in effect;

(7) that Dominion Energy Cove Point LNG, LP shall make publicly available, upon request, any monitoring report filed with the appropriate State Agencies pursuant to

its LDAR monitoring plan; and

(8) that all motions not specifically granted by action taken herein are denied.

W. Kevin Hughes

Michael T. Richard

Odogwu Obi Linton

Mindy L. Herman
Commissioners*

**Commissioner Anthony J. O'Donnell voluntarily removed himself from participating in the Commission's decision concerning Dominion Energy Cove Point LNG, LP's Motion to Amend Certain Conditions of its CPCN and Request for Expedited Consideration.*

Appendix One - Revised Certificate of Public Convenience and Necessity Licensing Conditions

CPCN Case No. 9318 Condition A-IX-3 states:

> VOC emissions from component leaks shall not exceed 2.53 tons per year from all components associated with the project on a 12-month rolling basis through the implementation of the VOC LDAR Monitoring Plan and Program.

Revised Condition A-IX-3:

> **VOC emissions from component leaks shall comply with LAER requirements through the implementation of a Site-Specific VOC LDAR Monitoring Plan and Program following the procedures outlined in the 28LAER Program specified in TCEQ's Control Efficiencies for TCEQ Leak Detection and Repair Programs, as amended. Within 30 days of issuance of the CPCN, DECP shall submit its Site-Specific LDAR Monitoring Plan to MDE-ARA for review and approval. Starting in 2019, by April 1st of each year DECP shall notify MDE-ARA of any updates to or deviations from its Site-Specific LDAR Monitoring Plan occurring during the previous calendar year unless an alternative reporting schedule is approved by MDE-ARA. VOC emissions shall be calculated per Condition A-IX-5 and included in the project-wide VOC 12-month rolling limit. (Based on a total component count of 162,700 piping and equipment components, as provided by DECP, the VOC potential to emit is 20.1 tons per year.)**

CPCN Case 9318 Condition A-III-4 states:

Emissions for all sources identified as part of the DECP Project, including emissions during periods of startup and shutdown, shall be limited to the following, in tons per year, in any consecutive 12-month rolling period:

Pollutant	**Project-Wide Emission Limit (tons per year)**
Particulate Matter (PM) – Filterable	55.7
Particulate Matter less than 10 microns (PM10) – Filterable and Condensable	124.2
Particulate Matter less than 2.5 microns (PM2.5) – Filterable and Condensable	124.2
Nitrogen Oxides (NOx)	279.3
Carbon Monoxide (CO)	146.6
Volatile Organic Compounds (VOCs)	33.3
Greenhouse Gas (GHG) as Carbon Dioxide Equivalent (CO_2e)	2,030,988
Formaldehyde	6.2

Revised Condition A-III-4:

Pollutant	Project-Wide Emission Limit (tons per year)
Particulate Matter (PM) – Filterable	55.7
Particulate Matter less than 10 microns (PM10) – Filterable and Condensable	124.2
Particulate Matter less than 2.5 microns (PM2.5) – Filterable and Condensable	124.2
Nitrogen Oxides (NOx)	279.3
Carbon Monoxide (CO)	146.6
Volatile Organic Compounds (VOCs)	**50.9**
Greenhouse Gas (GHG) as Carbon Dioxide Equivalent (CO_2e)	2,030,988
Formaldehyde	6.2

CPCN Case 9318 Condition A-I-3(g) states:

For air permitting purposes, the DECP Project shall be defined as the following:

(g) Two existing GE MS5001 Frame 5 combustion turbines providing a total maximum of 25 MW on a continuous basis

Revised Condition A-I-3(g):

For air permitting purposes, the DECP Project shall be defined as the following:

(g) Two existing GE MS5001 Frame 5 combustion turbines (S009 214 JA, S010 214 JB), three existing GE MS3142 Frame 3 combustion turbines (S001 111JA, S002 111JB, S003 111JC), and the existing Solar Titan combustion turbine (S021 311J) providing a total maximum of 25 MW on an as needed basis. For purposes of this definition, the term "as needed" as applied to the Frame 3 and Solar Titan combustion turbines means there is not a Frame 5 combustion turbine available due to an abnormal or emergency event to provide power to the Project.

CPCN Case 9318 Condition A-I-2 states:

> The CPCN serves as the Prevention of Significant Deterioration (PSD) approval, Nonattainment New Source Review (NA-NSR) approval, and air quality construction permit for the DCP Project and does not constitute the permit to construct or approvals until such time as DCP has provided documentation demonstrating that nitrogen oxides (NOx) emission offsets totaling at least 375 tons and volatile organic compound (VOC) emission offsets totaling at least 45 tons, each based on an offset ratio of 1.3 to 1.0, have been obtained and approved by MDE-ARMA and are federally enforceable.

Revised Condition A-I-3(g):

> **The CPCN serves as the Prevention of Significant Deterioration (PSD) approval, Nonattainment New Source Review (NA-NSR) approval, and air quality construction permit for the DECP Project and does not constitute the permit to construct or approvals until such time as DECP has provided documentation demonstrating that nitrogen oxides (NOx) emission offsets totaling at least 375 tons and volatile organic compound (VOC) emission offsets totaling at least 66 tons, each based on an offset ratio of 1.3 to 1.0, have been obtained and approved by MDE-ARA and are federally enforceable.**

New Condition XI: EXISTING WATER ETHYLENE GLYCOL HEATER

> **DECP shall not operate both existing Water Ethylene Glycol Heaters (EU-S024 and S025) at the same time, except when necessary to provide contracted, FERC-authorized services and, in that event, DECP shall provide prior written notification to MDE.**

Condition XII (Original Condition XI): NOTIFICATION REQUIREMENTS

A-XII-1 All air quality notifications and reports required by this CPCN shall be submitted to:

Administrator, Compliance Program
Air and Radiation Administration 1800
Washington Boulevard
Baltimore, Maryland 21230

A-XII-2 All notifications and reports required by 40 CFR §60 Subpart KKKK, Subpart IIII, Subpart Db, Subpart Kb, and 40 CFR §63 Subpart ZZZZ shall be submitted to:

Director, Air Protection Division
U.S. EPA – Region 3
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

A-XII-3 Information copies of the reports regarding air quality requirements as described in the conditions of Case 9318 (A-I-2, A-I-5, A-I-6, A-III-2b, A-III-7, A-III-8, AIII-9, A-III-10, A-IV-7, A-IV-18, A-V-7, A-V-20, A-VII-6, A-VII-14) shall be submitted to the Power Plant Research Program at:

Director
Power Plant Assessment Division
Department of Natural Resources
Tawes State Office Building, B-3
580 Taylor Avenue
Annapolis, Maryland 21401