



**Maryland**  
Department of  
the Environment

Wes Moore, Governor  
Aruna Miller, Lt. Governor

Serena McIlwain, Secretary  
Suzanne E. Dorsey, Deputy Secretary

Mr. Terence A. Fletcher, Sr., Plant Manager  
KMC Thermo, LLC Brandywine Power Facility  
16400 Mattawoman Drive  
Brandywine, MD 20613

**JUL 19 2024**

Dear Mr. Fletcher:

RE: Title VI/ Part 70 Operating Permit #24-033-2200 Issuance

Enclosed, please find the renewal Part 70/Title V Operating Permit and Fact Sheet for the KMC Thermo Brandywine facility located in Prince George's County, MD. The permit will expire on January 31, 2029.

The Code of Maryland Regulations (COMAR) 26.11.03.11 states the following:

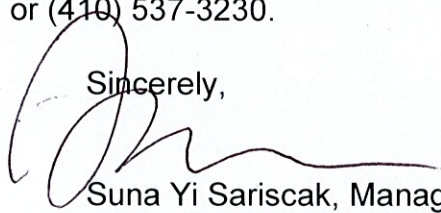
If the Department denies a Part 70 permit or issues it with terms and conditions that are objectionable to the applicant, the applicant may request that a contested case hearing be held regarding the permit. This request shall be made to the Department in writing not later than 15 days after the applicant receives notice that the permit has been denied or of the objectionable terms and conditions. The request shall include the basis for the request and refer to any objectionable terms and conditions.

Please note the following revised condition in the Permit under Section II, General Conditions, Number 5, Permit Renewal:

The Permittee shall submit to the Department a completed application for renewal of this Part 70 permit 12 months before the expiration of the permit. Upon submitting a complete application, the Permittee may continue to operate this facility pending final action by the Department on the renewal.

If you have any questions, please feel free to contact Mr. George Ikhinmwin, at [George.Ikhinmwin@maryland.gov](mailto:George.Ikhinmwin@maryland.gov), or (410) 537-3230.

Sincerely,

  
Suna Yi Sariscak, Manager  
Air Quality Permits Program  
Air & Radiation Administration

SYS/jm  
Enclosures  
cc: EPA Region III (w/encl)

Wes Moore  
Governor

State of

Serena McIlwain  
Secretary

## DEPARTMENT OF THE ENVIRONMENT

Air and Radiation Administration  
1800 Washington Boulevard, Suite 720  
Baltimore, MD 21230☐ Construction PermitPart 70  
☒ Operating Permit

PERMIT NO. 24-033-2200

DATE ISSUED JUL 19 2024

PERMIT FEE To be paid in accordance  
with COMAR 26.11.02.19BEXPIRATION  
DATE January 31, 2029

## LEGAL OWNER &amp; ADDRESS

KMC Thermo, LLC  
16400 Mattawoman Drive  
Brandywine MD 20613  
Attn: Mr. Terrence Fletcher

## SITE

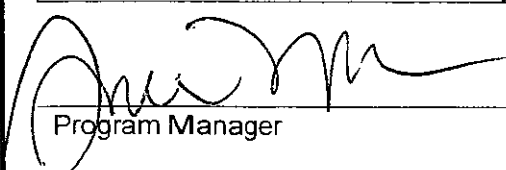
Brandywine Power Facility  
16400 Mattawoman Drive  
Brandywine, MD 20613-8089  
Prince George's County  
033-02200  
AI# 9909

## SOURCE DESCRIPTION

Combined Cycle Facility.

This source is subject to the conditions described on the attached pages.

Page 1 of 63

  
Program Manager  
Director, Air and Radiation Administration

**BRANDYWINE POWER FACILITY  
16400 MATTAWOMAN DRIVE  
BRANDYWINE, MD 20613  
PART 70 OPERATING PERMIT 24-033-2200**

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**SECTION I SOURCE IDENTIFICATION**

**1. DESCRIPTION OF FACILITY**

Brandywine Power Facility (Brandywine), formerly known as Panda Brandywine Power Plant, was acquired from Panda Brandywine, LLC on June 1, 2014, by KMC Thermo, LLC. KMC is located in Houston Texas. The Brandywine facility is a nominal 230 megawatts (MW) electric co-generation facility located two miles south of Brandywine in Prince George's County. The facility consists of two combined-cycle units (Emissions Units 1 and 2 [EU-1 and EU-2]). Each unit is comprised of a General Electric (GE) Frame 7EA-DLN1 combustion turbine (CT) rated at 84 MW and an unfired heat recovery steam generator (HRSG). Steam produced by the HRSGs is routed to a common steam turbine (ST) for generation of additional electricity. Brandywine also installed an emergency generator as part of making the facility Black Start capable (Emissions Unit 3[EU-3]), which is a Caterpillar diesel engine Model C175-20 rated at 4000 kW. The EU-3 will be fired exclusively on Ultra Low-Sulfur Diesel fuel. The unit is fully installed and operational.

The Maryland Public Service Commission (PSC) issued a Certificate of Public Convenience and Necessity (CPCN) to Panda Brandywine, LLC on September 5, 1994; PSC Case #8488. The facility began commercial operation on October 31, 1996. The facility produces electricity for distribution by the Potomac Electric Power Company (PEPCO). The applicable SIC Code for the facility is 4911 - Electric Services. The project was subject to major New Source Review (NSR), including Prevention of Significant Deterioration (PSD), and Non-Attainment NSR. Approval requirements pertaining to those air quality programs were specified in CPCN. In February 2014, Brandywine applied for a CPCN to add "Black Start" capability. To make the facility Black Start capable an emergency generator was installed (EU-3). This request was docketed as PSC Case # 9341. The PSC order incorporated all previous conditions from Case # 8488. The CPCN was issued on July 10, 2014.

Ancillary facilities include a two million gallon Ultra Low-Sulfur Diesel (ULSD) fuel storage tank, a re-circulating cooling water system, and miscellaneous support equipment. The facility utilizes pipeline natural gas (NG) or liquefied natural gas (LNG) as its primary fuel source with ULSD (0.0015 weight percent) fuel serving as a backup fuel. The combustion turbines are equipped with dry low NOx burners for natural gas firing and water injection for controlling NOx emissions when firing ULSD fuel. Brandywine uses natural gas or liquefied natural gas ninety-nine percent of the time and uses ULSD fuel occasionally to ascertain the reliability and availability of the combustion turbines when burning ULSD fuel and during Black Start Events. Brandywine will likely continue this pattern of fuel use.

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**2. FACILITY INVENTORY LIST**

Brandywine has identified the following emissions units shown in Table 1 as subject to the Title V Operating Permit program.

**Table 1 - Emissions Units**

<b>MDE Registration No.</b>	<b>Emissions Unit No</b>	<b>Emission Unit Description</b>	<b>Date Installed</b>
033-2200-5-0844	EU-1	One (1) GE Frame 7EA CT rated at 84 MW.	June 1996
033-2200-5-0845	EU-2	One (1) GE Frame 7EA CT rated at 84 MW.	June 1996
033-2200-9-1465	EU-3	One (1) Caterpillar diesel engine Model C175-20 rated at 4000 kW	May 2015

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**SECTION II     GENERAL CONDITIONS**

**1.     DEFINITIONS**

**[COMAR 26.11.01.01] and [COMAR 26.11.02.01]**

The words or terms in this Part 70 permit shall have the meanings established under COMAR 26.11.01 and .02 unless otherwise stated in this permit.

**2.     ACRONYMS**

ARA	Air and Radiation Administration
BACT	Best Available Control Technology
Btu	British thermal unit
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEM	Continuous Emissions Monitor
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COMAR	Code of Maryland Regulations
EPA	United States Environmental Protection Agency
FR	Federal Register
gr	grains
HAP	Hazardous Air Pollutant
MACT	Maximum Achievable Control Technology
MDE	Maryland Department of the Environment
MVAC	Motor Vehicle Air Conditioner
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NO <sub>x</sub>	Nitrogen Oxides
NSPS	New Source Performance Standards
NSR	New Source Review
OTR	Ozone Transport Region
PM	Particulate Matter
PM10	Particulate Matter with Nominal Aerodynamic Diameter of 10 micrometers or less
ppm	parts per million
ppb	parts per billion
PSD	Prevention of Significant Deterioration
PTC	Permit to construct
PTO	Permit to operate (State)
SIC	Standard Industrial Classification
SO <sub>2</sub>	Sulfur Dioxide

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TAP	Toxic Air Pollutant
tpy	tons per year
VE	Visible Emissions
VOC	Volatile Organic Compounds

**3. EFFECTIVE DATE**

The effective date of the conditions in this Part 70 permit is the date of permit issuance, unless otherwise stated in the permit.

**4. PERMIT EXPIRATION**

**[COMAR 26.11.03.13B (2)]**

Upon expiration of this permit, the terms of the permit will automatically continue to remain in effect until a new Part 70 permit is issued for this facility provided that the Permittee has submitted a timely and complete application and has paid applicable fees under COMAR 26.11.02.16.

Otherwise, upon expiration of this permit the right of the Permittee to operate this facility is terminated.

**5. PERMIT RENEWAL**

**[COMAR 26.11.03.02B (3)] and [COMAR 26.11.03.02E]**

The Permittee shall submit to the Department a completed application for renewal of this Part 70 permit at least 12 months before the expiration of the permit. Upon submitting a completed application, the Permittee may continue to operate this facility pending final action by the Department on the renewal.

The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall submit such supplementary facts or corrected information no later than 10 days after becoming aware that this occurred. The Permittee shall also provide additional information as necessary to address any requirements that become applicable to the facility after the date a completed application was submitted, but prior to the release of a draft permit. This information shall be submitted to the Department no later than 20 days after a new requirement has been adopted.



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**6. CONFIDENTIAL INFORMATION**

**[COMAR 26.11.02.02G]**

In accordance with the provisions of the State Government Article, Sec. 10-611 et seq., Annotated Code of Maryland, all information submitted in an application shall be considered part of the public record and available for inspection and copying unless the Permittee claims that the information is confidential when it is submitted to the Department. At the time of the request for inspection or copying, the Department will make a determination with regard to the confidentiality of the information. The Permittee, when requesting confidentiality, shall identify the information in a manner specified by the Department and, when requested by the Department, promptly provide specific reasons supporting the claim of confidentiality. Information submitted to the Department without a request that the information be deemed confidential may be made available to the public. Subject to approval of the Department, the Permittee may provide a summary of confidential information that is suitable for public review. The content of this Part 70 permit is not subject to confidential treatment.

**7. PERMIT ACTIONS**

**[COMAR 26.11.03.06E (3)] and [COMAR 26.11.03.20(A)]**

This Part 70 permit may be revoked or reopened and revised for cause. The filing of an application by the Permittee for a permit revision or renewal; or a notification of termination, planned changes or anticipated noncompliance by the facility, does not stay a term or condition of this permit.

The Department shall reopen and revise, or revoke the Permittee's Part 70 permit under the following circumstances:

- a. Additional requirements of the Clean Air Act become applicable to this facility and the remaining permit term is 3 years or more;
- b. The Department or the EPA determines that this Part 70 permit contains a material mistake, or is based on false or inaccurate information supplied by or on behalf of the Permittee;
- c. The Department or the EPA determines that this Part 70 permit must be revised or revoked to assure compliance with applicable requirements of the Clean Air Act; or
- d. Additional requirements become applicable to an affected source under the Federal Acid Rain Program.

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**8. PERMIT AVAILABILITY**

**[COMAR 26.11.02.13G]**

The Permittee shall maintain this Part 70 permit in the vicinity of the facility for which it was issued, unless it is not practical to do so, and make this permit immediately available to officials of the Department upon request.

**9. REOPENING THE PART 70 PERMIT FOR CAUSE BY THE EPA**

**[COMAR 26.11.03.20B]**

The EPA may terminate, modify, or revoke and reissue a permit for cause as prescribed in 40 CFR §70.7(g)

**10. TRANSFER OF PERMIT**

**[COMAR 26.11.02.02E]**

The Permittee shall not transfer this Part 70 permit except as provided in COMAR 26.11.03.15.

**11. REVISION OF PART 70 PERMITS – GENERAL CONDITIONS**

**[COMAR 26.11.03.14] and [COMAR 26.11.03.06A (8)]**

- a. The Permittee shall submit an application to the Department to revise this Part 70 permit when required under COMAR 26.11.03.15 -.17.
- b. When applying for a revision to a Part 70 permit, the Permittee shall comply with the requirements of COMAR 26.11.03.02 and .03 except that the application for a revision need include only information listed that is related to the proposed change to the source and revision to the permit. This information shall be sufficient to evaluate the proposed change and to determine whether it will comply with all applicable requirements of the Clean Air Act.
- c. The Permittee may not change any provision of a compliance plan or schedule in a Part 70 permit as an administrative permit amendment or as a

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minor permit modification unless the change has been approved by the Department in writing.

- d. A permit revision is not required for a change that is provided for in this permit relating to approved economic incentives, marketable permits, emissions trading, and other similar programs.

**12. SIGNIFICANT PART 70 OPERATING PERMIT MODIFICATIONS**

**[COMAR 26.11.03.17]**

The Permittee may apply to the Department to make a significant modification to its Part 70 Permit as provided in COMAR 26.11.03.17 and in accordance with the following conditions:

- a. A significant modification is a revision to the federally enforceable provisions in the permit that does not qualify as an administrative permit amendment under COMAR 26.11.03.15 or a minor permit modification as defined under COMAR 26.11.03.16.
- b. This permit does not preclude the Permittee from making changes, consistent with the provisions of COMAR 26.11.03, that would make the permit or particular terms and conditions of the permit irrelevant, such as by shutting down or reducing the level of operation of a source or of an emissions unit within the source. Air pollution control equipment shall not be shut down or its level of operation reduced if doing so would violate any term of this permit.
- c. Significant permit modifications are subject to all requirements of COMAR 26.11.03 as they apply to permit issuance and renewal, including the requirements for applications, public participation, and review by affected states and EPA, except:
  - (1) An application need include only information pertaining to the proposed change to the source and modification of this permit, including a description of the change and modification, and any new applicable requirements of the Clean Air Act that will apply if the change occurs;
  - (2) Public participation, and review by affected states and EPA, is limited to only the application and those federally enforceable terms and conditions of the Part 70 permit that are affected by the significant permit modification.

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- d. As provided in COMAR 26.11.03.15B(5), an administrative permit amendment may be used to make a change that would otherwise require a significant permit modification if procedures for enhanced preconstruction review of the change are followed that satisfy the requirements of 40 CFR 70.7(d)(1)(v).
- e. Before making a change that qualifies as a significant permit modification, the Permittee shall obtain all permits-to-construct and approvals required by COMAR 26.11.02.
- f. The Permittee shall not make a significant permit modification that results in a violation of any applicable requirement of the Clean Air Act.
- g. The permit shield in COMAR 26.11.03.23 applies to a final significant permit modification that has been issued by the Department, to the extent applicable under COMAR 26.11.03.23.

**13. MINOR PERMIT MODIFICATIONS**

**[COMAR 26.11.03.16]**

The Permittee may apply to the Department to make a minor modification to the federally enforceable provisions of this Part 70 permit as provided in COMAR 26.11.03.16 and in accordance with the following conditions:

- a. A minor permit modification is a Part 70 permit revision that:
  - (1) Does not result in a violation of any applicable requirement of the Clean Air Act;
  - (2) Does not significantly revise existing federally enforceable monitoring, including test methods, reporting, record keeping, or compliance certification requirements except by:
    - (a) Adding new requirements,
    - (b) Eliminating the requirements if they are rendered meaningless because the emissions to which the requirements apply will no longer occur, or
    - (c) Changing from one approved test method for a pollutant and source category to another;

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- (3) Does not require or modify a:
    - (a) Case-by-case determination of a federally enforceable emissions standard,
    - (b) Source specific determination for temporary sources of ambient impacts, or
    - (c) Visibility or increment analysis;
  - (4) Does not seek to establish or modify a federally enforceable permit term or condition for which there is no corresponding underlying applicable requirement of the Clean Air Act, but that the Permittee has assumed to avoid an applicable requirement to which the source would otherwise be subject, including:
    - (a) A federally enforceable emissions standard applied to the source pursuant to COMAR 26.11.02.03 to avoid classification as a Title I modification; and
    - (b) An alternative emissions standard applied to an emissions unit pursuant to regulations promulgated under Section 112(i)(5) of the Clean Air Act
  - (5) Is not a Title I modification; and
  - (6) Is not required under COMAR 26.11.03.17 to be processed as a significant modification to this Part 70 permit.
- b. Application for a Minor Permit Modification

The Permittee shall submit to the Department an application for a minor permit modification that satisfies the requirements of COMAR 26.11.03.03 which includes the following:

- (1) A description of the proposed change, the emissions resulting from the change, and any new applicable requirements that will apply if the change is made;
- (2) The proposed minor permit modification;
- (3) Certification by a responsible official, in accordance with COMAR 26.11.02.02F, that:

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- (a) The proposed change meets the criteria for a minor permit modification, and
  - (b) The Permittee has obtained or applied for all required permits-to-construct required by COMAR 26.11.03.16 with respect to the proposed change;
- (4) Completed forms for the Department to use to notify the EPA and affected states, as required by COMAR 26.11.03.07-.12.
- c. Permittee's Ability to Make Change
  - (1) For changes proposed as minor permit modifications to this permit that will require the applicant to obtain a permit to construct, the permit to construct must be issued prior to the new change.
  - (2) During the period of time after the Permittee applies for a minor modification but before the Department acts in accordance with COMAR 26.11.03.16F(2):
    - (a) The Permittee shall comply with applicable requirements of the Clean Air Act related to the change and the permit terms and conditions described in the application for the minor modification.
    - (b) The Permittee is not required to comply with the terms and conditions in the permit it seeks to modify. If the Permittee fails to comply with the terms and conditions in the application during this time, the terms and conditions of both this permit and the application for modification may be enforced against it.
- d. The Permittee is subject to enforcement action if it is determined at any time that a change made under COMAR 26.11.03.16 is not within the scope of this regulation.
- e. Minor permit modification procedures may be used for Part 70 permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, but only to the extent that the minor permit modification procedures are explicitly provided for in regulations approved by the EPA as part of the Maryland SIP or in other applicable requirements of the Clean Air Act.

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**14. ADMINISTRATIVE PART 70 OPERATING PERMIT AMENDMENTS**

**[COMAR 26.11.03.15]**

The Permittee may apply to the department to make an administrative permit amendment as provided in COMAR 26.11.03.15 and in accordance with the following conditions:

- a. An application for an administrative permit amendment shall:
  - (1) Be in writing;
  - (2) Include a statement certified by a responsible official that the proposed amendment meets the criteria in COMAR 26.11.03.15 for an administrative permit amendment, and
  - (3) Identify those provisions of this part 70 permit for which the amendment is requested, including the basis for the request.
- b. An administrative permit amendment:
  - (1) Is a correction of a typographical error;
  - (2) Identifies a change in the name, address, or phone number of a person identified in this permit, or a similar administrative change involving the Permittee or other matters which are not directly related to the control of air pollution;
  - (3) requires more frequent monitoring or reporting by the Permittee;
  - (4) Allows for a change in ownership or operational control of a source for which the Department determines that no other revision to the permit is necessary and is documented as per COMAR 26.11.03.15B(4);
  - (5) Incorporates into this permit the requirements from preconstruction review permits or approvals issued by the Department in accordance with COMAR 26.11.03.15B(5), but only if it satisfies 40 CFR 70.7(d)(1)(v);
  - (6) Incorporates any other type of change, as approved by the EPA, which is similar to those in COMAR 26.11.03.15B(1)—(4);
  - (7) Notwithstanding COMAR 26.11.03.15B(1)—(6), all modifications to acid rain control provisions included in this Part 70 permit are

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governed by applicable requirements promulgated under Title IV of the Clean Air Act; or

- (8) Incorporates any change to a term or condition specified as State-only enforceable, if the Permittee has obtained all necessary permits-to-construct and approvals that apply to the change.
- c. The Permittee may make the change addressed in the application for an administrative amendment upon receipt by the Department of the application, if all permits-to-construct or approvals otherwise required by COMAR 26.11.02 prior to making the change have first been obtained from the Department.
- d. The permit shield in COMAR 26.11.03.23 applies to administrative permit amendments made under Section B (5) of COMAR 26.11.03.15, but only after the Department takes final action to revise the permit.
- e. The Permittee is subject to enforcement action if it is determined at any time that a change made under COMAR 26.11.03.15 is not within the scope of this regulation.

**15. OFF-PERMIT CHANGES TO THIS SOURCE**

**[COMAR 26.11.03.19]**

The Permittee may make off-permit changes to this facility as provided in COMAR 26.11.03.19 and in accordance with the following conditions:

- a. The Permittee may make a change to this permitted facility that is not addressed or prohibited by the federally enforceable conditions of this Part 70 permit without obtaining a Part 70 permit revision if:
  - (1) The Permittee has obtained all permits and approvals required by COMAR 26.11.02 and .03;
  - (2) The change is not subject to any requirements under Title IV of the Clean Air Act;
  - (3) The change is not a Title I modification; and
  - (4) The change does not violate an applicable requirement of the Clean Air Act or a federally enforceable term or condition of the permit.



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- b. For a change that qualifies under COMAR 26.11.03.19, the Permittee shall provide contemporaneous written notice to the Department and the EPA, except for a change to an emissions unit or activity that is exempt from the Part 70 permit application, as provided in COMAR 26.11.03.04. This written notice shall describe the change, including the date it was made, any change in emissions, including the pollutants emitted, and any new applicable requirements of the Clean Air Act that apply as a result of the change.
- c. Upon satisfying the requirements of COMAR 26.11.03.19, the Permittee may make the proposed change.
- d. The Permittee shall keep a record describing:
  - (1) Changes made at the facility that result in emissions of a regulated air pollutant subject to an applicable requirement of the Clean Air Act , but not otherwise regulated under this permit; and
  - (2) The emissions resulting from those changes.
- e. Changes that qualify under COMAR 26.11.03.19 are not subject to the requirements for Part 70 revisions.
- f. The Permittee shall include each off-permit change under COMAR 26.11.03.19 in the application for renewal of the part 70 permit.
- g. The permit shield in COMAR 26.11.03.23 does not apply to off-permit changes made under COMAR 26.11.03.19.
- h. The Permittee is subject to enforcement action if it is determined that an off-permit change made under COMAR 26.11.03.19 is not within the scope of this regulation.

**16. ON-PERMIT CHANGES TO SOURCES**

**[COMAR 26.11.03.18]**

The Permittee may make on-permit changes that are allowed under Section 502(b) (10) of the Clean Air Act as provided in COMAR 26.11.03.18 and in accordance with the following conditions:

- a. The Permittee may make a change to this facility without obtaining a revision to this Part 70 permit if:

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- (1) The change is not a Title I modification;
  - (2) The change does not result in emissions in excess of those expressly allowed under the federally enforceable provisions of the Part 70 permit for the permitted facility or for an emissions unit within the facility, whether expressed as a rate of emissions or in terms of total emissions;
  - (3) The Permittee has obtained all permits and approvals required by COMAR 26.11.02 and .03;
  - (4) The change does not violate an applicable requirement of the Clean Air Act;
  - (5) The change does not violate a federally enforceable permit term or condition related to monitoring, including test methods, record keeping, reporting, or compliance certification requirements;
  - (6) The change does not violate a federally enforceable permit term or condition limiting hours of operation, work practices, fuel usage, raw material usage, or production levels if the term or condition has been established to limit emissions allowable under this permit;
  - (7) If applicable, the change does not modify a federally enforceable provision of a compliance plan or schedule in this Part 70 permit unless the Department has approved the change in writing; and
  - (8) This permit does not expressly prohibit the change under COMAR 26.11.03.18.
- b. The Permittee shall notify the Department and the EPA in writing of a proposed on-permit change under COMAR 26.11.03.18 not later than 7 days before the change is made. The written information shall include the following information:
- (1) A description of the proposed change;
  - (2) The date on which the change is proposed to be made;
  - (3) Any change in emissions resulting from the change, including the pollutants emitted;
  - (4) Any new applicable requirement of the Clean Air Act; and

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- (5) Any permit term or condition that would no longer apply.
- c. The responsible official of this facility shall certify in accordance with COMAR 26.11.02.02F that the proposed change meets the criteria for the use of on-permit changes under COMAR 26.11.03.18.
- d. The Permittee shall attach a copy of each notice required by condition b. above to this Part 70 permit.
- e. On-permit changes that qualify under COMAR 26.11.03.18 are not subject to the requirements for part 70 permit revisions.
- f. Upon satisfying the requirements under COMAR 26.11.03.18, the Permittee may make the proposed change.
- g. The permit shield in COMAR 26.11.03.23 does not apply to on-permit changes under COMAR 26.11.03.18.
- h. The Permittee is subject to enforcement action if it is determined that an on-permit change made under COMAR 26.11.03.18 is not within the scope of the regulation or violates any requirement of the State air pollution control law.

**17. FEE PAYMENT**

**[COMAR 26.11.02.16A (2) & (5) (b)]**

- a. The fee for this Part 70 permit is as prescribed in Regulation .19 of COMAR 26.11.02.
- b. The fee is due on and shall be paid on or before each 12-month anniversary date of the permit.
- c. Failure to pay the annual permit fee constitutes cause for revocation of the permit by the Department.

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**18. REQUIREMENTS FOR PERMITS-TO-CONSTRUCT AND APPROVALS**

**[COMAR 26.11.02.09.]**

The Permittee may not construct or modify or cause to be constructed or modified any of the following sources without first obtaining, and having in current effect, the specified permits-to-construct and approvals:

- a. New Source Review source, as defined in COMAR 26.11.01.01, approval required, except for generating stations constructed by electric companies;
- b. Prevention of Significant Deterioration source, as defined in COMAR 26.11.01.01, approval required, except for generating stations constructed by electric companies;
- c. New Source Performance Standard source, as defined in COMAR 26.11.01.01, permit to construct required, except for generating stations constructed by electric companies;
- d. National Emission Standards for Hazardous Air Pollutants source, as defined in COMAR 26.11.01.01, permit to construct required, except for generating stations constructed by electric companies;
- e. A stationary source of lead that discharges one ton per year or more of lead or lead compounds measured as elemental lead, permit to construct required, except for generating stations constructed by electric companies;
- f. All stationary sources of air pollution, including installations and air pollution control equipment, except as listed in COMAR 26.11.02.10, permit to construct required;
- g. In the event of a conflict between the applicability of (a. — e.) above and an exemption listed in COMAR 26.11.02.10, the provision that requires a permit applies.
- h. Approval of a PSD or NSR source by the Department does not relieve the Permittee obtaining an approval from also obtaining all permits-to-construct required by (c. — g.) above.

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**19. CONSOLIDATION OF PROCEDURES FOR PUBLIC PARTICIPATION**

**[COMAR 26.11.02.11C] and [COMAR 26.11.03.01K]**

The Permittee may request the Department to authorize special procedures for the Permittee to apply simultaneously, to the extent possible, for a permit to construct and a revision to this permit.

These procedures may provide for combined public notices, informational meetings, and public hearings for both permits but shall not adversely affect the rights of a person, including EPA and affected states, to obtain information about the application for a permit, to comment on an application, or to challenge a permit that is issued.

These procedures shall not alter any existing permit procedures or time frames.

**20. PROPERTY RIGHTS**

**[COMAR 26.11.03.06E (4)]**

This Part 70 permit does not convey any property rights of any sort, or any exclusive privileges.

**21. SEVERABILITY**

**[COMAR 26.11.03.06A (5)]**

If any portion of this Part 70 permit is challenged, or any term or condition deemed unenforceable, the remainder of the requirements of the permit continues to be valid.

**22. INSPECTION AND ENTRY**

**[COMAR 26.11.03.06G (3)]**

The Permittee shall allow employees and authorized representatives of the Department, the EPA, and local environmental health agencies, upon presentation of credentials or other documents as may be required by law, to:

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- a. Enter at a reasonable time without delay and without prior notification the Permittee's property where a Part 70 source is located, emissions-related activity is conducted, or records required by this permit are kept;
- b. Have access to and make copies of records required by the permit;
- c. Inspect all emissions units within the facility subject to the permit and all related monitoring systems, air pollution control equipment, and practices or operations regulated or required by the permit; and
- d. Sample or monitor any substances or parameters at or related to the emissions units at the facility for the purpose of determining compliance with the permit.

**23. DUTY TO PROVIDE INFORMATION**

**[COMAR 26.11.03.06E (5)]**

The Permittee shall furnish to the Department, within a reasonable time specified by the Department, information requested in writing by the Department in order to determine whether the Permittee is in compliance with the federally enforceable conditions of this Part 70 permit, or whether cause exists for revising or revoking the permit. Upon request, the Permittee shall also furnish to the Department records required to be kept under the permit.

For information claimed by the Permittee to be confidential and therefore potentially not discloseable to the public, the Department may require the Permittee to provide a copy of the records directly to the EPA along with a claim of confidentiality.

The Permittee shall also furnish to the Department, within a reasonable time specified by the Department, information or records requested in writing by the Department in order to determine if the Permittee is in compliance with the State-only enforceable conditions of this permit.

**24. COMPLIANCE REQUIREMENTS**

**[COMAR 26.11.03.06E (1)] and [COMAR 26.11.03.06A (11)] and [COMAR 26.11.02.05]**

The Permittee shall comply with the conditions of this Part 70 permit. Noncompliance with the permit constitutes a violation of the Clean Air Act,

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and/or the Environment Article Title 2 of the Annotated Code of Maryland and may subject the Permittee to:

- a. Enforcement action,
- b. Permit revocation or revision,
- c. Denial of the renewal of a Part 70 permit, or
- d. Any combination of these actions.

The conditions in this Part 70 permit are enforceable by EPA and citizens under the Clean Air Act except for the State-only enforceable conditions.

Under Environment Article Section 2-609, Annotated Code of Maryland, the Department may seek immediate injunctive relief against a person who violates this permit in such a manner as to cause a threat to human health or the environment.

**25. CREDIBLE EVIDENCE**

Nothing in this permit shall be interpreted to preclude the use of credible evidence to demonstrate noncompliance with any term of this permit.

**26. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE**

**[COMAR 26.11.03.06E (2)]**

The need to halt or reduce activity in order to comply with the conditions of this permit may not be used as a defense in an enforcement action.

**27. CIRCUMVENTION**

**[COMAR 26.11.01.06]**

The Permittee may not install or use any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total weight of emissions, conceals or dilutes emissions which would otherwise constitute a violation of any applicable air pollution control regulation.

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**28. PERMIT SHIELD**

**[COMAR 26.11.03.23]**

A permit shield as described in COMAR 26.11.03.23 shall apply only to terms and conditions in this Part 70 permit that have been specifically identified as covered by the permit shield. Neither this permit nor COMAR 26.11.03.23 alters the following:

- a. The emergency order provisions in Section 303 of the Clean Air Act, including the authority of EPA under that section;
- b. The liability of the Permittee for a violation of an applicable requirement of the Clean Air Act before or when this permit is issued or for a violation that continues after issuance;
- c. The requirements of the Acid Rain Program, consistent with Section 408(a) of the Clean Air Act;
- d. The ability of the Department or EPA to obtain information from a source pursuant to Maryland law and Section 114 of the Clean Air Act; or
- e. The authority of the Department to enforce an applicable requirement of the State air pollution control law that is not an applicable requirement of the Clean Air Act.

**29. ALTERNATE OPERATING SCENARIOS**

**[COMAR 26.11.03.06A (9)]**

For all alternate operating scenarios approved by the Department and contained within this permit, the Permittee, while changing from one approved scenario to another, shall contemporaneously record in a log maintained at the facility each scenario under which the emissions unit is operating and the date and time the scenario started and ended.



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**SECTION III PLANT WIDE CONDITIONS**

**1. PARTICULATE MATTER FROM CONSTRUCTION AND DEMOLITION**

**[COMAR 26.11.06.03D]**

The Permittee shall not cause or permit any building, its appurtenances, or a road to be used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne.

**2. OPEN BURNING**

**[COMAR 26.11.07]**

Except as provided in COMAR 26.11.07.04, the Permittee shall not cause or permit an open fire from June 1 through August 31 of any calendar year. Prior to any open burning, the Permittee shall request and receive approval from the Department.

**3. AIR POLLUTION EPISODE**

**[COMAR 26.11.05.04]**

When requested by the Department, the Permittee shall prepare in writing standby emissions reduction plans, consistent with good industrial practice and safe operating procedures, for reducing emissions creating air pollution during periods of Alert, Warning, and Emergency of an air pollution episode.

**4. REPORT OF EXCESS EMISSIONS AND DEVIATIONS**

**[COMAR 26.11.01.07] and [COMAR 26.11.03.06C (7)]**

The Permittee shall comply with the following conditions for occurrences of excess emissions and deviations from requirements of this permit, including those in Section VI – State-only Enforceable Conditions:

- a. Report any deviation from permit requirements that could endanger human health or the environment, by orally notifying the Department immediately upon discovery of the deviation;

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- b. Promptly report all occurrences of excess emissions that are expected to last for one hour or longer by orally notifying the Department of the onset and termination of the occurrence;
- c. When requested by the Department the Permittee shall report all deviations from permit conditions, including those attributed to malfunctions as defined in COMAR 26.11.01.07A, within 5 days of the request by submitting a written description of the deviation to the Department. The written report shall include the cause, dates and times of the onset and termination of the deviation, and an account of all actions planned or taken to reduce, eliminate, and prevent recurrence of the deviation;
- d. The Permittee shall submit to the Department semi-annual monitoring reports that confirm that all required monitoring was performed, and that provide accounts of all deviations from permit requirements that occurred during the reporting periods. Reporting periods shall be January 1 through June 30 and July 1 through December 31, and reports shall be submitted within 30 days of the end of each reporting period. Each account of deviation shall include a description of the deviation, the dates and times of onset and termination, identification of the person who observed or discovered the deviation, causes and corrective actions taken, and actions taken to prevent recurrence. If no deviations from permit conditions occurred during a reporting period, the Permittee shall submit a written report that so states.
- e. When requested by the Department, the Permittee shall submit a written report to the Department within 10 days of receiving the request concerning an occurrence of excess emissions. The report shall contain the information required in COMAR 26.11.01.07D (2).

**5. ACCIDENTAL RELEASE PROVISIONS**

**[COMAR 26.11.03.03B (23)] and [40 CFR 68]**

Should the Permittee become subject to 40 CFR 68 during the term of this permit, the Permittee shall submit risk management plans by the date specified in 40 CFR 68.150 and shall certify compliance with the requirements of 40 CFR 68 as part of the annual compliance certification as required by 40 CFR 70.

The Permittee shall initiate a permit revision or reopening according to the procedures of 40 CFR 70.7 to incorporate appropriate permit conditions into the Permittee's Part 70 permit.

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**6. GENERAL TESTING REQUIREMENTS**

**[COMAR 26.11.01.04]**

The Department may require the Permittee to conduct, or have conducted, testing to determine compliance with this Part 70 permit. The Department, at its option, may witness or conduct these tests. This testing shall be done at a reasonable time, and all information gathered during a testing operation shall be provided to the Department.

**7. EMISSIONS TEST METHODS**

**[COMAR 26.11.01.04]**

Compliance with the emissions standards and limitations in this Part 70 permit shall be determined by the test methods designated and described below or other test methods submitted to and approved by the Department.

Reference documents of the test methods approved by the Department include the following:

- a. 40 CFR 60, appendix A
- b. 40 CFR 51, appendix M
- c. The Department's Technical Memorandum 91-01 "Test Methods and Equipment Specifications for Stationary Sources", (January 1991), as amended through Supplement 3, (October 1, 1997)

**8. EMISSIONS CERTIFICATION REPORT**

**[COMAR 26.11.01.05-1] and [COMAR 26.11.02.19C] and  
[COMAR 26.11.02.19D]**

The Permittee shall certify actual annual emissions of regulated pollutants from the facility on a calendar year basis.

- a. The certification shall be on forms obtained from the Department and submitted to the Department not later than April 1 of the year following the year for which the certification is required;

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- b. The individual making the certification shall certify that the information is accurate to the individual's best knowledge. The individual shall be:
  - (1) Familiar with each source for which the certifications forms are submitted, and
  - (2) Responsible for the accuracy of the emissions information;
- c. The Permittee shall maintain records necessary to support the emissions certification including the following information if applicable:
  - (1) The total amount of actual emissions of each regulated pollutant and the total of all regulated pollutants;
  - (2) An explanation of the methods used to quantify the emissions and the operating schedules and production data that were used to determine emissions, including significant assumptions made;
  - (3) Amounts, types and analyses of all fuels used;
  - (4) Emissions data from continuous emissions monitors that are required by this permit, including monitor calibration and malfunction information;
  - (5) Identification, description, and use records of all air pollution control equipment and compliance monitoring equipment including:
    - (a) Significant maintenance performed,
    - (b) Malfunctions and downtime, and
    - (c) Episodes of reduced efficiency of all equipment;
  - (6) Limitations on source operation or any work practice standards that significantly affect emissions; and
  - (7) Other relevant information as required by the Department.

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**9. COMPLIANCE CERTIFICATION REPORT**

**[COMAR 26.11.03.06G (6) and (7)]**

The Permittee shall submit to the Department and EPA Region III a report certifying compliance with each term of this Part 70 permit including each applicable standard, emissions limitation, and work practice for the previous calendar year by April 1 of each year.

- a. The compliance certification shall include:
  - (1) The identification of each term or condition of this permit which is the basis of the certification;
  - (2) The compliance status;
  - (3) Whether the compliance was continuous or intermittent;
  - (4) The methods used for determining the compliance status of each source, currently and over the reporting period; and
  - (5) Any other information required to be reported to the Department that is necessary to determine the compliance status of the Permittee with this permit.
- b. The Permittee shall submit the compliance certification reports to the Department and EPA simultaneously.

**10. CERTIFICATION BY RESPONSIBLE OFFICIAL**

**[COMAR 26.11.02.02F]**

All application forms, reports, and compliance certifications submitted pursuant to this permit shall be certified by a responsible official as to truth, accuracy, and completeness. The Permittee shall expeditiously notify the Department of an appointment of a new responsible official.

The certification shall be in the following form:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information

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submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

**11. SAMPLING AND EMISSIONS TESTING RECORD KEEPING**

**[COMAR 26.11.03.06C (5)]**

The Permittee shall gather and retain the following information when sampling and testing for compliance demonstrations:

- a. The location as specified in this permit, and the date and time that samples and measurements are taken;
- b. All pertinent operating conditions existing at the time that samples and measurements are taken;
- c. The date that each analysis of a sample or emissions test is performed and the name of the person taking the sample or performing the emissions test;
- d. The identity of the Permittee, individual, or other entity that performed the analysis;
- e. The analytical techniques and methods used; and
- f. The results of each analysis.

**12. GENERAL RECORDKEEPING**

**[COMAR 26.11.03.06C (6)]**

The Permittee shall retain records of all monitoring data and information that support the compliance certification for a period of five (5) years from the date that the monitoring, sample measurement, application, report or emissions test was completed or submitted to the Department.

These records and support information shall include:

- a. All calibration and maintenance records;

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- b. All original data collected from continuous monitoring instrumentation;
- c. Records which support the annual emissions certification; and
- d. Copies of all reports required by this permit.

**13. GENERAL CONFORMITY – Not Applicable**

**[COMAR 26.11.26.09]**

The Permittee shall comply with the general conformity requirements of 40 CFR 93, Subpart B and COMAR 26.11.26.09.

**14. ASBESTOS PROVISIONS – Not Applicable**

**[40 CFR 61, Subpart M]**

The Permittee shall comply with 40 CFR 61, Subpart M when conducting any renovation or demolition activities at the facility.

**15. OZONE DEPLETING REGULATIONS**

**[40 CFR 82, Subpart F]**

The Permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR 82, Subpart F, except as provided for MVACs in subpart B:

- a. Persons opening appliances for maintenance, service, repair, or disposal shall comply with the prohibitions and required practices pursuant to 40 CFR 82.154 and 82.156.
- b. Equipment used during the maintenance, service, repair or disposal of appliances shall comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- c. Persons performing maintenance, service, repairs or disposal of appliances shall be certified by an approved technician certification program pursuant to 40 CFR 82.161.

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- d. Persons performing maintenance, service, repairs or disposal of appliances shall certify with the Administrator pursuant to 40 CFR 82.162.
- e. Persons disposing of small appliances, MVACS, and MVAC-like appliances as defined in 40 CFR 82.152, shall comply with record keeping requirements pursuant to 40 CFR 82.166.
- f. Persons owning commercial or industrial process refrigeration equipment shall comply with the leak repair requirements pursuant to 40 CFR 82.156.
- g. Owners/operators of appliances normally containing 50 or more pounds of refrigerant shall keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR 82.166.

**16. ACID RAIN PERMIT**

The facility is an affected source under the 1990 CAAA, Title IV Acid Rain Program and must comply with the renewal Acid Rain Permit being issued in conjunction with this permit. See Appendix A.



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**SECTION IV PLANT-SPECIFIC CONDITIONS**

This section provides tables that include the emissions standards, emissions limitations, and work practices applicable to each emissions unit located at this facility. The Permittee shall comply with all applicable emissions standards, emissions limitations and work practices included herein.

The tables also include testing, monitoring, record keeping and reporting requirements specific to each emissions unit. In addition to the requirements included here in **Section IV**, the Permittee is also subject to the general testing, monitoring, record keeping and reporting requirements included in **Section III – Plant Wide Conditions** of this permit.

Unless otherwise provided in the specific requirements for an emissions unit, the Permittee shall maintain at the facility for at least five (5) years, and shall make available to the Department upon request, all records that the Permittee is required under this section to establish. [Authority: COMAR 26.11.03.06C (5) (g)]

Table IV – 1	
<b>1.0</b>	<b><u>Emissions Unit:</u></b> EU-1 and EU-2 Combined cycle electric generating units consisting of two GE Frame 7EA combustion turbines (CTs) rated at 84 MW each; two (2) unfired HRSGs; and one (1) SG rated at 80 MW for a total generating electric capacity of 248 MW. The primary fuel is natural gas. Ultra low-sulfur diesel fuel oil is used as a back-up fuel.
<b>1.1</b>	<b><u>Applicable Standards/Limits:</u></b>  <u>Control of Visible Emissions</u> A. <b>COMAR 26.11.09.05A (2)</b> - Visible Emissions. “In Areas III and IV, a person may not cause or permit the discharge of emissions from any fuel burning equipment, other than water in an uncombined form, which is visible to human observers.”  <u>Exceptions.</u> “Section A (1) and (2) does not apply to emissions during load changing, soot blowing, startup, Black Start Events, or occasional cleaning of control equipment if:  (a) The visible emissions are not greater than 40 percent opacity; and (b) The visible emissions do not occur for more than 6 consecutive minutes in any sixty-minute period.”  <u>Control of Sulfur Dioxide and Sulfuric Acid Mist Emissions</u> B1. <b>CPCN Case No. 9341 Air Quality Section, Condition No. 8</b> , which limits the sulfur content in ULSD fuel oil to 0.0015 wt %.

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**Table IV – 1**

**B2. CPCN Case No. 9341, Air Quality Section, Condition No. 5,** which limits sulfur dioxide emissions from each combustion turbine to the limits shown below, as hourly emissions expressed in pounds per hour, except during periods of start-up, shut-down, malfunction, and Black Start Events:

	Natural Gas	LNG	ULSD Fuel Oil
Sulfur Oxides (as SO <sub>2</sub> )	29	29	54

**B3. CPCN Case No. 9341, Air Quality Section, Condition No. 5,** which limits sulfuric acid mist from each combustion turbine to the limits shown below, as hourly emissions expressed in pounds per hour, except during periods of start-up, shut-down, malfunction, and Black Start Events:

	Natural Gas	LNG	ULSD Fuel Oil
Sulfuric Acid Mist	3	3	6

**B4. NSPS Limitation - 40 CFR 60.333 - Subpart GG,** which limits sulfur content in any fuel burned in a gas turbine to 0.8 wt. %.

**B5. Phase II Acid Rain Requirement**

The Permittee shall comply with the provisions and all applicable requirements of the Phase II Acid Rain program. See Appendix A for the renewal of the Acid Rain Permit.

**B6. Cross-State Air Pollution Rule**

**TR SO<sub>2</sub> Group 1 Trading Program 40 CFR Part 97 Subpart CCCCC**

The Permittee shall comply with the provisions and requirements of §97.601 through §97.635

**Note: §97.606(c) SO<sub>2</sub> emissions requirements.** For TR SO<sub>2</sub> Group 1 emissions limitation: As of the allowance transfer deadline for a control period in a given year, the owners, and operators of each TR SO<sub>2</sub> Group 1 source and each TR SO<sub>2</sub> Group 1 unit at the source shall hold, in the source's compliance account, TR SO<sub>2</sub> Group 1 allowances available for deduction for such control period under §97.624(a) in an amount not less than the tons of total SO<sub>2</sub> emissions for such control period from all TR SO<sub>2</sub> Group 1 units at the source.

Allowance transfer deadline means, for a control period in a given year, midnight of March 1 (if it is a business day), or midnight of the first business day thereafter (if March 1 is not a business day), immediately after such control period and is the deadline by which a TR SO<sub>2</sub> Group 1 allowance transfer must be submitted for recordation in a TR SO<sub>2</sub> Group 1 source's compliance account in order to be

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**Table IV – 1**

available for use in complying with the source's TR SO<sub>2</sub> Group 1 emissions limitation for such control period in accordance with §§97.606 and 97.624.

**Control of Nitrogen Oxides Emissions**

**PSD Limitations**

- C1. **CPCN No. 9341 Air Quality Section, Condition No. 4**, which limits nitrogen oxides (NO<sub>x</sub>) emissions for each turbine, except during start-up period, shut-down, malfunction, and Black Start Events when burning natural gas, ULSD fuel oil, or LNG, as follows:

- (a) Natural gas: the outlet concentration of NO<sub>x</sub> shall not exceed 9 parts per million by volume on a dry basis (ppmvd) at 15 percent excess oxygen on an hourly basis.
- (b) ULSD fuel oil: the outlet concentration of NO<sub>x</sub> shall not exceed 54 ppmvd at 15 percent excess oxygen on an hourly basis.
- (c) LNG: the outlet concentration of NO<sub>x</sub> shall not exceed 10 ppmvd at 15 percent excess oxygen on an hourly basis.

- C2. **CPCN Case No. 9341, Air Quality Section, Condition No. 5.**

Each combustion turbine, except during start-up period, shut-down, malfunction, and during Black Start Events, shall be limited to no more than the following hourly emissions expressed in units of pounds per hour:

	Natural Gas	LNG	ULSD Fuel Oil
Nitrogen Oxides (as NO <sub>2</sub> )	35	39	239

- C3. **CPCN Case No. 9341, Air Quality Section, Condition No. 6.**

Annual facility-wide NO<sub>x</sub> emissions shall be limited to no more than 437 tons per year (as NO<sub>2</sub>), excluding emissions during periods of start-up, shutdown, malfunction or PJM system emergency or Black Start Events as defined in Condition No. 11 of the CPCN. Under no circumstance shall facility-wide emissions exceed 518 tons per year

**NSPS Limitations**

- C4. **40 CFR 60.332 - NSPS Subpart GG**, which limits NO<sub>x</sub> emissions for each turbine when burning natural gas, ULSD Fuel oil, and LNG as derived by the following formula:

$$\text{STD} = 0.0075 (14.4/Y) + F$$

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Where:

STD = Allowable NO<sub>x</sub> emissions (percent by volume at 15 percent oxygen and on dry basis).

Y = Manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour (kj/wh) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kj/wh.

F = NO<sub>x</sub> emissions allowance for fuel bound nitrogen as defined in paragraph (a) (4) of 40 CFR 60.332.

The value of Y (for the combustion turbines) used with the above formula is 11.160 kj/kwh while the weight percent of the fuel bound nitrogen used in deriving the value of F for: natural gas is 0.21 percent; LNG is 0.21 percent; and ULSD fuel oil is 0.021 percent.

Calculated NSPS NO<sub>x</sub> emissions limit for each turbine using the respective fuels are as follows:

(a) Nat gas: the outlet concentration of NO<sub>x</sub> shall not exceed 144 parts per million by volume on a dry basis (ppmvd) at 15 percent excess oxygen on an hourly basis.

(b) ULSD fuel oil: the outlet concentration of NO<sub>x</sub> shall not exceed 101 parts per million by volume on a dry basis (ppmvd) at 15 percent excess oxygen on an hourly basis.

(c) LNG: the outlet concentration of NO<sub>x</sub> shall not exceed 144 parts per million by volume on a dry basis (ppmvd) at 15 percent excess oxygen on an hourly basis.

**C5. NO<sub>x</sub> RACT Limitation**

**COMAR 26.11.09.08G (2)**, which requires the owner or Permittee of combustion turbines with a capacity factor greater than 15 percent to meet an hourly average NO<sub>x</sub> emission rate as follows: not more than 42 ppm when burning gas; 65 ppm when burning fuel oil (dry volume at 15 percent oxygen) or meet applicable Prevention of Significant Deterioration limits, whichever is more restrictive. (Note that the PSD limit is more restrictive.)

**C6. Cross-State Air Pollution Rule**

**TR NO<sub>x</sub> Annual Trading Program 40 CFR Part 97 Subpart AAAAA**

The Permittee shall comply with the provisions and requirements of §97.401 through

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**Note: §97.406(c) NOx emissions requirements.** For TR NOx Annual emissions limitation: As of the allowance transfer deadline for a control period in a given year, the owners and operators of each TR NOx Annual source and each TR NOx Annual unit at the source shall hold, in the source's compliance account, TR NOx Annual allowances available for deduction for such control period under §97.424(a) in an amount not less than the tons of total NOx emissions for such control period from all TR NOx Annual units at the source.

Allowance transfer deadline means, for a control period in a given year, midnight of March 1 (if it is a business day), or midnight of the first business day thereafter (if March 1 is not a business day), immediately after such control period and is the deadline by which a TR NOx Annual allowance transfer must be submitted for recordation in a TR NOx Annual source's compliance account in order to be available for use in complying with the source's TR NOx Annual emissions limitation for such control period in accordance with §§97.406 and 97.424.

**TR NOx Ozone Season Trading Program 40 CFR Part 97 Subpart BBBBB**

The Permittee shall comply with the provisions and requirements of §97.501 through §97.535

**Note: §97.506(c) NOx emissions requirements.** For TR NOx Ozone Season emissions limitation: As of the allowance transfer deadline for a control period in a given year, the owners and operators of each TR NOx Ozone Season source and each TR NOx Ozone Season unit at the source shall hold, in the source's compliance account, TR NOx Ozone Season allowances available for deduction for such control period under §97.524(a) in an amount not less than the tons of total NOx emissions for such control period from all TR NOx Ozone Season units at the source.

Allowance transfer deadline means, for a control period in a given year, midnight of December 1 (if it is a business day), or midnight of the first business day thereafter (if December 1 is not a business day), immediately after such control period and is the deadline by which a TR NOx Ozone Season allowance transfer must be submitted for recordation in a TR NOx Ozone Season source's compliance account in order to be available for use in complying with the source's TR NOx Ozone Season emissions limitation for such control period in accordance with §§97.506 and 97.524.

Control of Carbon Monoxide Emissions

**D. CPCN No.9341 Air Quality Section, Condition No. 5.**

Each combustion turbine, except during start-up period, shut-down, malfunction, and Black Start Events, shall be limited to no more than the following hourly emissions expressed in units of pounds per hours:

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	Natural Gas	LNG	ULSD Fuel Oil
Carbon Monoxide	59	59	71
<u>Control of Volatile Organic Compounds</u>			
<b>E. CPCN No. 9341 Air Quality Section, Condition No. 5.</b>			
Each combustion turbine, except during start-up period, shut-down, malfunction, and Events, shall be limited to no more than the following hourly emissions expressed in units of pounds per hours:			
	Natural Gas	LNG	ULSD Fuel Oil
Volatile Organic Compounds	2	2	5
<u>Control of Particulate Matter Emissions</u>			
<b>F. CPCN No. 9341 Air Quality Section, Condition No. 5.</b>			
Each combustion turbine, except during start-up period, shut-down, malfunction, and Events, shall be limited to no more than the following hourly emissions expressed in units of pounds per hours:			
	Natural Gas	LNG	ULSD Fuel Oil
PM <sub>10</sub>	7	7	15
Total d Particulate	7	7	15
<u>Operational Limitation</u>			
<b>G1. CPCN Case No. 9341, Air Quality Section, Condition No. 9</b>			
The combustion turbines shall generate electricity using only natural gas or LNG except as otherwise provided for in these conditions:			
(a)	When the fuel delivery to the turbines is interrupted or curtailed, the facility may burn ULSD fuel oil but shall be limited to 143 tons of NO <sub>x</sub> per year, when burning ULSD fuel oil;		
(b)	If the facility has reached its 143-ton limit and there is a PJM system emergency as defined in Condition No. 11 and natural gas is unavailable, or there is Black Start event and natural gas is unavailable, the facility may burn ULSD fuel oil; and		
(c)	Under no circumstance, however, may the facility burn ULSD fuel oil for more than 2,400 turbine hours per year.		

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	<p>For the purposes of this condition, a year is defined as November 1 through October 31. Natural gas/LNG service interruptions shall be verified by a letter each year from Brandywine's natural gas/LNG supplier identifying the dates on which service was restricted. Brandywine will ensure that the Department receives a copy of this letter within 60 days of the start of each new year. <b>[Reference: CPCN No. 9341 condition 9, Air Quality Section].</b></p> <p><b>G2. CPCN Case No. 9341, Air Quality Section, Condition No. 11.</b></p> <p>For the purposes of Conditions Nos. 6 and 9 of the CPCN, a PJM system emergency is operation during reserve shortages and refers to Maximum Generation Emergency, as defined in Section 2.0 of PJM Manual 35: Definitions and Acronyms, Revision 22 Effective date 2/28/2013.</p> <p><b>G3. CPCN Case No. 9341, Air Quality Section, Condition No. 7.</b></p> <p>Except for start-up and shutdown periods, and except during Black Start Events, each combustion turbine unit shall operate only when the unit, for natural gas or LNG firing, is in DLN premix mode, or when firing ULSD fuel oil, water injection is engaged. <b>[Reference: CPCN No.9341, Air Quality Section].</b></p> <p>Note that after the initiation of premix steady state while firing natural gas or LNG and upon initiation of water injection while firing ULSD fuel oil, an emissions monitoring stabilization period of up to 17 minutes is required to accommodate exhaust gas transit time from the exit of the combustion system to the CEMS.</p>
<b>1.2</b>	<p><b><u>Testing Requirements:</u></b></p> <p><b>A. <u>Visible Emissions Limitation</u></b> See monitoring requirements.</p> <p><b>B. <u>Sulfur Oxide and Sulfuric Acid Mist Emissions</u></b> The Permittee shall comply with the CPCN requirements by performing sampling and analysis of the “as fired” ULSD fuel oil to determine the percentage of sulfur by weight in the ULSD fuel oil as prescribed in 40 CFR 75 Appendix D <b>[Reference: CPCN No. 9341, Conditions No. 5 and No. 8, Air Quality Section].</b> The Permittee shall perform QA/QC procedures for the SO<sub>2</sub> monitoring system in accordance with 40 CFR Part 75 Appendix D. <b>[Reference: CPCN No. 9341, Conditions No. 5 and No. 8, NSPS 40 CFR 60.334(h), and Acid Rain 40 CFR Part 75.21].</b></p> <p><b>C. <u>Nitrogen Oxide Emissions</u></b> The Permittee shall perform QA/QC procedures for the NO<sub>x</sub> monitoring system in accordance with 40 CFR Part 75 Appendix D. <b>[Reference: CPCN No. 9341, Condition 8, NSPS 40 CFR 60.334(h), COMAR 26.11.09.08B(2)(c) and Acid</b></p>

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	<p><b>Rain 40 CFR Part 75.70(e) ].</b></p> <p>D. <u>Carbon Monoxide Emissions</u> See monitoring requirements.</p> <p>E. <b>Volatile Organic Compound</b> See monitoring requirements.</p> <p>F. <b>Particulate Matter Emissions</b> See monitoring requirements.</p> <p>G. <b>Operational Limitation</b> See record keeping requirements.</p>
<b>1.3</b>	<p><b><u>Monitoring Requirements:</u></b></p> <p>A. <u>Visible Emissions Limitation</u> The Permittee shall:            (a) Properly operate and maintain the combustion turbines;            (b) Maintain an operations manual and preventive maintenance plan; and            (c) Verify no visible emissions when burning ULSD fuel oil. An observer shall perform at least one EPA Reference Method 9 observation of stack emissions for a 6-minute period once for every 168 hours that each of the combustion turbines burns ULSD fuel oil. If a turbine operates on ULSD fuel oil for less than 168 hours in a year, this observation requirement is waived for that calendar year.</p> <p>The Permittee shall perform the following if visible emissions are observed:            (a) Inspect combustion turbine operations;            (b) Perform all necessary adjustments and/or repairs to the turbines within 48 hours that visible emissions are eliminated;            (c) Document in writing the results of the inspections, adjustments and/or repairs to the turbines; and            (d) If the required adjustments and/or repairs have not eliminated the visible emissions within the stipulated 48 hours, perform a Method 9 observation once daily for 18 minutes until corrective action has eliminated the visible emissions. [Reference: COMAR 26.11.03.06C].</p> <p>B. <u>Sulfur Oxide and Sulfuric Acid Mist Emissions</u>  <b>CPCN</b>            The Permittee shall perform sampling and analysis of the “as fired” sulfur content of the ULSD fuel oil to determine the percentage of sulfur by weight in the ULSD fuel oil. The sampling procedures shall follow the requirements of CPCN No. 9341, Conditions # 5 and # 8 as prescribed in 40 CFR 75 Appendix D, Sec. 2.2.</p>



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**[Reference: CPCN No. 9341, Condition Nos. 5 and 8, Air Quality Section].**

**NSPS Subpart GG - Monitoring Requirements**

**Natural Gas**

Notwithstanding the provisions of paragraph (h) (1) of this section, the Permittee may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in §60.331(u), regardless of whether an existing custom schedule approved by the administrator for subpart GG requires such monitoring. The owner or operator shall use one of the following sources of information to make the required demonstration.

- a. The gas quality characteristics in a current valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the ULSD fuel oil is 20.0 grains /100 scf or less; or
- b. Representative fuel sampling data, which show that the sulfur content of the gaseous fuel does not exceed 20-grains/100 scf. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to Part 75 of this chapter is required. **[Reference: 40 CFR 60.334(h)(3)(i) and (ii)].**

**ULSD Fuel Oil**

The frequency of determining the sulfur (and nitrogen) content of the ULSD fuel oil is as follows:

Use one of the total sampling options and associated sampling frequency described in sections 2.2.3, 2.2.4.1, 2.2.4.2, and 2.2.2.4.3 of appendix D to part 75 of this chapter (i.e., flow proportional sampling, daily sampling, sampling from the unit's storage tank after each addition of the fuel to the tank, or sampling each delivery prior to combining it with ULSD fuel oil already in the intended storage tank **[Reference: 40 CFR 60.334(i)(1)]**).

**Cross-State Air Pollution Rule**

The Permittee shall comply with the monitoring requirements found in §97.606, §97.630, §97.631, §97.632, and §97.633.

**C. Nitrogen Oxide Emissions**

**CPCN**

The Permittee shall operate and maintain a CEMS to monitor and demonstrate compliance with the NO<sub>x</sub> emissions limitations of the CPCN. **[Reference: CPCN No. 9341, Air Quality Section, Condition No. 13].**

**NSPS Subpart GG (40 CFR 60.334(a))**

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Except as provided in paragraph (b) of this section, the Permittee who owns a stationary gas turbine subject to the provisions of this subpart and uses water or steam injection to control NO<sub>x</sub> emissions shall install, calibrate, maintain, and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine [Reference: 40 CFR 60.334(a)].

**NSPS Subpart GG (40 CFR 60.334 (b))**

The owner or operator of any stationary gas turbine that commenced construction, reconstruction, or modification after October 3, 1977, but before July 8, 2004, and which uses water or steam injection to control NO<sub>x</sub> emissions may, as an alternative to operating the continuous monitoring system described in paragraph (a) of this section, install, certify, maintain, operate, and quality-assure a continuous emission monitoring system (CEMS) consisting of NO<sub>x</sub> and O<sub>2</sub> monitors. If the option to use a CEMS is chosen, the CEMS shall be installed, certified, maintained and operated as follows:

Each CEMS must be installed and certified according to PS 2 and 3 (for diluent) of 40 CFR part 60, appendix B, except that the 7-day calibration drift is based on unit operating days, not calendar days. Appendix F, Procedure 1 is not required. The relative accuracy test audit (RATA) of the NO<sub>x</sub> and diluent monitors may be performed individually or on a combined basis, *i.e.*, the relative accuracy tests of the CEMS may be performed either:

- (i) On a ppm basis (for NO<sub>x</sub>) and a percent O<sub>2</sub> basis for oxygen; or
- (ii) On a ppm at 15 percent O<sub>2</sub> basis; or
- (iii) On a ppm basis (for NO<sub>x</sub>) and a percent CO<sub>2</sub> basis (for a CO<sub>2</sub> monitor that uses the procedures in Method 20 to correct the NO<sub>x</sub> data to 15 percent O<sub>2</sub>).

[Reference: 40 CFR 60.334(b)].

**NO<sub>x</sub> RACT**

The Permittee shall use the data collected from the NO<sub>x</sub> CEM to demonstrate compliance with the RACT limitation [Reference: COMAR 26.11.09.08B(2)(a)(i)].

**Cross-State Air Pollution Rule**

The Permittee shall comply with the monitoring requirements found in §97.406, §97.430, §97.431, §97.432, and §97.433 for the NO<sub>x</sub> Annual Trading Program and §97.506, §97.530, §97.531, §97.532, and §97.533 for the NO<sub>x</sub> Ozone Season Trading Program.

**D. Carbon Monoxide Emissions**

The Permittee shall perform preventative maintenance on the turbines to maintain them in a condition such that they operate as designed [Reference:

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	<p><b>COMAR 26.11.03.06C].</b></p> <p>E. <u>Volatile Organic Compounds</u> The Permittee shall perform preventative maintenance on the turbines to maintain them in a condition such that they operate as designed. [Reference: COMAR 26.11.03.06C].</p> <p>F. <u>Particulate Matter Emissions</u> The Permittee shall perform preventative maintenance on the turbines to maintain them in a condition such that they operate as designed. [Reference: COMAR 26.11.03.06C].</p> <p>G. <u>Operational Limitation</u> See record keeping</p>
<b>1.4</b>	<p><b><u>Record Keeping Requirements:</u></b> <b>NOTE:</b> All records must be maintained for a period of 5 years [Reference: COMAR 26.11.03.06.C (5) (g)].</p> <p>A. <u>Visible Emissions Limitation</u> The Permittee shall:  (1) Maintain a log of maintenance performed that relates to combustion performance on the combustion turbines; and  (2) Maintain a log of visible emissions observation performed on site for 5 years and make it available to the Department’s representative upon request.  [Reference: COMAR 26.11.03.06C].</p> <p>B. <u>Sulfur Oxide and Sulfuric Acid Mist Emissions</u>  <b>CPCN and NSPS Subpart GG</b>  The Permittee shall maintain all records including the fuel analyses for 2 years and shall make the record available to the Department upon request [References: CPCN No 9341 Condition 14]. <b>Note:</b> Part 70 permits require records to be maintained for 5 years rather than 2 years as referenced in the CPCN condition.  <b>NSPS Subpart GG (40 CFR 60.7 (f))</b>  “An owner or operator who is subject to the provisions of this part shall maintain a record of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection.”  [Reference: 40 CFR 60 .7(f)].</p>

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	<p><b>Cross-State Air Pollution Rule</b> The Permittee shall comply with the recordkeeping requirements found in §97.606, §97.630, and §97.634.</p>
C.	<p><u>Nitrogen Oxide Emissions</u> <b>CPCN</b> The Permittee shall maintain all records necessary to comply with the NOx data reporting requirements of CPCN No. 9341, Condition 14 [<b>CPCN No. 9341, Condition No. 14, Air Quality Section</b>]</p> <p><b>NSPS Subpart GG (40 CFR 60.7 (f))</b> “An owner or operator who is subject to the provisions of this part shall maintain a record of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection.” [Reference: 40 CFR 60 .7(f)].</p> <p><b>NOx RACT</b> The Permittee shall maintain annual fuel use records and records that are necessary to submit with the quarterly emissions report [<b>References: COMAR 26.11.09.08K(3) and COMAR 26.11.03.06C</b>].</p> <p><b>Cross-State Air Pollution Rule</b> The Permittee shall comply with the recordkeeping requirements found in §97.406, §97.430, and §97.434 for the NOx Annual Trading Program; and §97.506, §97.530, and §97.534 for the NOx Ozone Season Trading Program.</p>
D.	<p><u>Carbon Monoxide Emissions</u> The Permittee shall maintain records of the preventative maintenance which relate to combustion performance [<b>References: COMAR 26.11.03.06C</b>].</p>
E.	<p><u>Volatile Organic Compounds</u> The Permittee shall maintain records of the preventative maintenance which relate to combustion performance [<b>References: COMAR 26.11.03.06C</b>].</p>
F.	<p><u>Particulate Matter Emissions</u> The Permittee maintain records of the preventative maintenance which relate to combustion performance [<b>References: COMAR 26.11.03.06C</b>].</p>
G.	<p><u>Operational Limitation</u></p>

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	The Permittee shall maintain record of the hours that the turbines burn ULSD fuel oil and record periods, except for startups, shutdowns, and Black Start Events when each combustion turbine generator operates with water injection not engaged [Reference: COMAR 26.11.03.06C].
<b>1.5</b>	<p><b><u>Reporting Requirements:</u></b></p> <p>A. <u>Visible Emissions Limitation</u> The Permittee shall report incidents of visible emissions in accordance with Condition 4 of Section III “Report of Excess Emissions and Deviation. [Reference: COMAR 26.11.03.06C].</p> <p>B. <u>Sulfur Oxide and Sulfuric Acid Mist Emissions</u> <b>CPCN</b> The Permittee shall submit quarterly, within 45 days of the end of each quarter, the result of the sulfur content of the fuel to the Department within 45 days of the availability of the result [Reference: CPCN No. 9341, Air Quality Section, Condition No. 14]. <b>Note:</b> For any calendar quarter during which no delivery of ULSD fuel oil is received, the quarterly report shall state that no ULSD fuel oil was received during the quarter.</p> <p><b>NSPS</b> For each affected unit required to continuously monitor parameters or emissions or to periodically determine the sulfur content or fuel nitrogen content under this subpart, the owner or operator shall submit reports of excess emissions and monitor downtime, in accordance with section 60. 7(c). Excess emissions shall be reported for all periods of unit operation, including startup, shutdown and malfunction. For the purpose of reports required under section 60.7(c), periods of excess emissions and monitor downtime, which shall be reported are defined as follows: (i) For samples of gaseous fuel and for ULSD fuel oil samples obtained using daily sampling, flow proportional sampling or sampling from unit’s storage tank, an excess emission occurs each unit operating hour included in the period beginning on the date and hour of any sample for which the sulfur content of the fuel being fired in the gas turbines exceeds 0.8 weight percent and ending on a date and hour that a subsequent sample is taken that demonstrates compliance with the sulfur limit.  (ii) If the option to sample each delivery of fuel oil has been selected, the Permittee shall immediately switch to one of the other oil sampling options (i.e., daily sampling, flow proportional sampling, or sampling from the unit’s storage tank from) if the sulfur content of a delivery exceeds 0.8 weight percent. The Permittee shall continue to use one of the other sampling options until all of the</p>

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oil from the delivery has been combusted and shall evaluate excess emissions according to paragraph (j)(2)(i) of this section. When all of the fuel from the delivery has been burned, the owner or operator may resume using the as delivered sampling option.

(iii) A period of monitor downtime begins when a required sample is not taken by its due date. A period of monitor's downtime also begins on the date and hour of a required sample, if invalid results are obtained. The period of monitor downtime shall include only unit operating hours and ends on the date and hour of the next valid sample. [Reference: 40 CFR 60.334(j)(2)(i),(ii), and (iii)].

All reports required under §60.7(c) shall be postmarked by the 30th day following the end of each calendar quarter [Reference: 40 CFR 60.334(j)(5)].

**Cross-State Air Pollution Rule**

The Permittee shall comply with the reporting requirements found in §97.606, §97.630, §97.633 and §97.634.

**C. Nitrogen Oxide Emissions**

**CPCN** (Note: see Reporting requirement G.)

**RACT**

The Permittee shall submit a quarterly summary report to the Department not later than 30 days following each calendar quarter. The report shall be in a format approved by the Department, and shall include the following:

- (1) The cause, time periods, and magnitude of all emissions which exceed the applicable emission standards;
- (2) The source downtime including the time and date of the beginning and end of each downtime period and whether the source downtime was planned or unplanned;
- (3) The time periods and cause of all CEM downtime including records of any repairs, adjustments, or maintenance that may affect the validity of emission data;
- (4) Quarterly totals of excess emissions, installation downtime, and CEM downtime during the calendar quarter;
- (5) Quarterly quality assurance activities; and
- (6) Daily calibration activities that include reference values, actual values, absolute or percent of span differences, and drift status; and
- (7) Other information required by the Department that is determined to be necessary to evaluate the data, to ensure that compliance is achieved, or to determine the applicability of this regulation." [Reference: COMAR 26.11.09.08K(1) and COMAR 26.11.01.11E(2)(C)].

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**Note:** The Permittee may submit one report that includes the required information to satisfy RACT and CPCN quarterly reporting requirements (See Reporting Condition G of CPCN). [Reference: COMAR 26.11.03.06C]

**NSPS**

For each affected unit required to continuously monitor parameters or emissions or to periodically determine the sulfur content or fuel nitrogen content under this subpart, the Permittee shall submit reports of excess emissions and monitor downtime, in accordance with section 60.7(c). Excess emissions shall be reported for all periods of unit operation, including startup, shutdown and malfunction. For the purpose of reports required under section 60.7(c), periods of excess emissions and monitor downtime that shall be reported are defined as follows:

For turbines using NO<sub>x</sub> and diluent CEMS:

(A) An hour of excess emissions shall be any unit operating hour in which the 4-hour rolling average NO<sub>x</sub> concentration exceeds the applicable emission limit in §60.332(a)(1) or (2). For the purposes of this subpart, a “4-hour rolling average NO<sub>x</sub> concentration” is the arithmetic average of the average NO<sub>x</sub> concentration measured by the CEMS for a given hour (corrected to 15 percent O<sub>2</sub> and, if required under §60.335(b)(1), to ISO standard conditions) and the three-unit operating hour average NO<sub>x</sub> concentrations immediately preceding that unit operating hour.

(B) A period of monitor downtime shall be any unit operating hour in which sufficient data are not obtained to validate the hour, for either NO<sub>x</sub> concentration or diluent (or both).

(C) Each report shall include the ambient conditions (temperature, pressure, and humidity) at the time of the excess emission period and (if the Permittee has claimed an emission allowance for fuel bound nitrogen) the nitrogen content of the fuel during the period of excess emissions. You do not have to report ambient conditions if you opt to use the worst-case ISO correction factor as specified in §60.334(b)(3)(ii), or if you are not using the ISO correction equation under the provisions of §60.335(b)(1) [Reference: 40 CFR 60.334(j)(1)(iii)].

All reports required under §60.7(c) shall be postmarked by the 30th day following the end of each calendar quarter [Reference: 40 CFR 60.334(j)(5)].

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	<p><b>Cross-State Air Pollution Rule</b> The Permittee shall comply with the reporting requirements found in §97.406, §97.430, §97.433 and §97.434 for the NOx Annual Trading Program; and §97.506, §97.530, §97.533, and §97.534 for the NOx Ozone Season Trading Program.</p>
D.	<p><b><u>Carbon Monoxide Emissions</u></b> The Permittee shall submit records of the preventative maintenance performed, which relate to combustion performance, to the Department upon request [Reference: COMAR 26.11.03.06C].</p>
E.	<p><b><u>Volatile Organic Compounds</u></b> <b>CPCN</b> The Permittee shall submit records of the calculated hourly, daily, and cumulative annual VOC emissions and preventative maintenance performed, which relate to combustion performance to the Department upon request [Reference: COMAR 26.11.03.06C and CPCN No. 9341, Condition No. 14, Air Quality Section]</p>
F.	<p><b><u>Particulate Matter Emissions</u></b> The Permittee shall submit records of the preventative maintenance performed, which relate to combustion performance, to the Department upon request [Reference: COMAR 26.11.03.06C].</p>
G.	<p><b><u>Operational Limitation</u></b> <b>CPCN</b> The Permittee shall submit the quarterly report within 45 days of the end of each calendar quarter, and shall include at least the following for each turbine (monthly summaries):</p> <ul style="list-style-type: none"> <li>(a) The total hours of operation;</li> <li>(b) The number of hours of operation burning ULSD fuel oil;</li> <li>(c) The total amount of ULSD fuel oil burned, in units of gallons per hour and MMBtu per hour during the quarter;</li> <li>(d) The number of hours of operation burning natural gas and LNG;</li> <li>(e) The total amount of natural gas and LNG burned, in units of pounds per hour and MMBtu per hour during the quarter;</li> <li>(f) Times of start-up and shutdown and Black Start Events;</li> <li>(g) The megawatts of electricity produced by each turbine on an hourly basis;</li> <li>(h) Maximum hourly and average hourly NOx emissions, in units of ppmvd at 15 percent oxygen and pounds per hour, and the cumulative annual NOx emissions;</li> </ul>



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	<p>(i) Any emissions in excess of NO<sub>x</sub> concentrations specified in this permit, including the amount of the emissions, the date(s) on which the excess emissions occurred, the length of time over which the excess emissions occurred, the reason(s) why the excess emissions occurred, and the corrective action taken, if required, to ensure that excess emissions do not occur in the future; and</p> <p>(j) Any periods, except startup, shutdowns, and Black Start Events that the turbine operated, for natural gas or LNG firing, when not in DLN premix mode or for firing on ULSD fuel oil, with water injection not engaged.</p> <p>The quarterly report as required above shall be in the format approved by the Department. Valid CEMS data are required for a minimum of 90 percent of the plant operating hours in each quarter [References: CPCN 9341, Conditions Nos. 13 and 14].</p>

**A Permit Shield shall cover the applicable requirements identified for the emissions units listed in the table above.**

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<b>2.0</b>	<p><b><u>Emissions Unit:</u></b> EU-3</p> <p>One (1) Caterpillar diesel engine Model C175-20 rated at 4000 kW burning Ultra low-sulfur diesel fuel oil.</p>
<b>2.1</b>	<p><b><u>Applicable Standards/Limits:</u></b></p> <p>A. <u>Control of Visible Emissions</u></p> <p>A1. <b>COMAR 26.11.09.05E(2) - Emissions During Idle Mode.</b> A person may not cause or permit the discharge of emissions from any engine, operating at idle, greater than 10 percent opacity.</p> <p>A2. <b>COMAR 26.11.09.05E(3) - Emissions During Operating Mode.</b> A person may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity.</p> <p>A3. <b>COMAR 26.11.09.05E(4) - Exceptions.</b></p> <p>(a) Section E(2) of this regulation does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system.</p> <p>(b) Section E(2) of this regulation does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:</p> <p>(i) Engines that are idled continuously when not in service: 30 minutes;</p>

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	<p>(ii) All other engines: 15 minutes.</p> <p>(c) Section E(2) and (3) of this regulation do not apply while maintenance, repair, or testing is being performed by qualified mechanics</p> <p><b>A4. NSPS §§60.4202(b)(2) and 60.4205(b) (§ 1039.105 What smoke opacity standards must my engines meet?)</b></p> <p>(a) The smoke opacity standards in this section apply to all engines subject to emission standards under this part, except for the following engines:</p> <p>(1) Single-cylinder engines.</p> <p>(2) Constant-speed engines.</p> <p>(3) Engines certified to a PM emission standard or FEL of 0.07 g/kW-hr or lower.</p> <p>(b) Measure smoke opacity as specified in §1039.501(c). Smoke opacity from your engines may not exceed the following standards:</p> <p>(1) 20 percent during the acceleration mode.</p> <p>(2) 15 percent during the lugging mode.</p> <p>(3) 50 percent during the peaks in either the acceleration or lugging modes.</p> <p>[69 FR 39213, June 29, 2004, as amended at 88 FR 4658, Jan. 24, 2023].</p> <p><b>B. <u>Control of Sulfur Dioxide Emissions</u></b></p> <p><b>B1. CPCN Case No. 9341 Air Quality Section, Condition No. 8</b>, which limits sulfur content in ULSD fuel oil to 0.0015 wt %.</p> <p><b>B2. COMAR 26.11.09.07A(2)(b)</b> “ In Areas III and IV - Sulfur Content Limitations for Fuel. A person may not burn, sell, or make available for sale any fuel with a sulfur content by weight in excess of or which otherwise exceeds 0.3 percent by weight.”</p> <p><b>B3. §60.4207(b)</b> - owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR §1090.305 for nonroad diesel fuel (15 ppm maximum), except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted.</p> <p><b>C. <u>Control of Carbon Monoxide</u></b>  <b>CPCN Case No. 9341, Air Quality Section, Condition No. 20 (a)ii, (NSPS §§60.4202(b)(2) and 60.4205(b))</b>, which limits the emissions of CO from the engine to 3.5 grams per kilowatt hour (g/kW-hour) or 2.6 grams per brake horsepower-hr)</p> <p><b>D. <u>Control of Particulate Matter (PM)</u></b>  <b>CPCN Case No. 9341, Air Quality Section, Condition No. 20 (a)iii, (NSPS</b></p>
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**§§60.4202(b)(2) and 60.4205(b)),** which limits the emissions of PM from the engine to 0.2 grams per kilowatt hour (g/kW-hour ) or 0.15 grams per brake horsepower-hr)

**E. Control of Nitrogen Oxides**

**E1. COMAR 26.11.36.03 - Requirements for Stationary Engines.**

(a). “The owner or operator of an engine is subject to requirements under 40 CFR Part 63 Subpart ZZZZ, as applicable.

(b). The owner or operator of an engine is subject to requirements under 40 CFR Part 60 Subpart IIII. In May 2015, the United States Court of Appeals for the District of Columbia Circuit vacated paragraphs 40 CFR 60.4211(f)(2)(ii)-(iii), and 63.6640(f)(2)(ii)-(iii). Therefore, engines subject to this chapter do not have to comply with those provisions.”

**Note:** Black Start Events are periods of emergencies.

**E2. CPCN Case No. 9341, Air Quality Section, Condition No. 20 (a)i, (NSPS**

**§§60.4202(b)(2) and 60.4205(b)),** which limits the emissions for NO<sub>x</sub> in combination with non-methane hydrocarbons (“combined NO<sub>x</sub> and NMHC emissions”) to 6.4 g/kW-hour, or 4.8 g/bhp-hr.

**E3. NO<sub>x</sub> RACT Requirements**

**COMAR 26.11.09.08G – Requirements for Fuel-Burning Equipment with a Capacity Factor of 15 percent or less.**

(1) A person who owns or operates fuel-burning equipment with a capacity factor (as defined in 40 CFR Part 72.2) of 15 percent or less shall:

- (a) Provide certification of the capacity factor of the equipment to the Department in writing;
- (b) For fuel-burning equipment that operates more than 500 hours during a calendar year, perform a combustion analysis and optimize combustion at least once annually;
- (c) Maintain the results of the combustion analysis and any stack tests at the site for at least 2 years and make these results available to the Department and the EPA upon request;
- (d) Require each operator of an installation, except combustion turbines, to attend operator training programs at least once every 3 years, on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors; and
- (e) Maintain a record of training program attendance for each operator at the site and make these records available to the Department upon request.”

**2. COMAR 26.11.09.08B (5) - Operator Training.**

(a) **COMAR 26.11.09.08B (5)(a)** states that “for purposes of this regulation, the equipment operator to be trained may be the person who maintains the

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	<p>equipment and makes the necessary adjustments for efficient operation; and .</p> <p>(b) <b>COMAR 26.11.09.08B(5)(b)</b> states that the operator-training course sponsored by the Department shall include an in-house training course that is approved by the Department.”</p> <p><b>E4. <u>NOx Control (NSPS)</u> - NSPS Subpart IIII Limitations - See E2 above</b></p> <p>(a) <b>§60.4205(b)</b> - Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.</p> <p>(b) <b>§60.4202(b)</b> Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power greater than 2,237 kW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (b)(1) through (2) of this section.</p> <p>(1) For 2007 through 2010 model years, the emission standards in table 1 to this subpart, for all pollutants, for the same maximum engine power. - N/A</p> <p>(2) For 2011 model year and later, the Tier 2 emission Standards as described in 40 CFR part 1039, appendix I, for all pollutants and smoke standards as specified in 40 CFR 1039.105.</p> <p><b>F. <u>Control of NESHAP</u></b></p> <p><b>40 CFR Part 63 Subpart ZZZZ (NESHAP) - See NSPS Subpart III limitations.</b></p> <p><b>Note:</b> MACT subpart ZZZZ - “§63.6590(c)(1) Stationary RICE subject to Regulations under 40 CFR 60. - “An affected source that is subject to any of the criteria in paragraphs (c) (1) through (7) of this section must meet the requirements of this part by meeting the requirement of 40 CFR part 60 Subpart IIII, for compression ignition engine or 40 CFR part 60 Subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part” (Ref: 40 CFR §63.6590(c)(1)).</p> <p><b>G. <u>Operational Requirements</u></b></p> <p>G1. <b>§60.4206</b> - Owners and operators of emergency stationary CI ICE must operate and maintain stationary CI ICE so as to achieve the emission standards as required in §60.4205 over the entire life of engine.</p> <p>G2. <b>§60.4207</b> - Owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel</p>
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	<p>fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted.</p>
G3.	<p><b>§60.4211(a)</b> - The Permittee, owner, and operator of a stationary CI ICE subject to the emissions standard of 40 CFR Part 60, Subpart IIII must do all of the following, except as permitted under paragraph (g) of this section:</p> <ul style="list-style-type: none"> <li>(1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions;</li> <li>(2) Change only those emission-related settings that are permitted by the manufacturer; and</li> <li>(3) Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.</li> </ul>
G4.	<p><b>§60.4211(f)</b> - Owners and operators of an emergency stationary ICE must operate the emergency stationary ICE according to the requirements in paragraphs (f)(1), (f)(2)(i) and (f)(3) of this section. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1), (f)(2)(i) and (f)(3) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1), (f)(2)(i) and (f)(3) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.</p> <ul style="list-style-type: none"> <li>(1) There is no time limit on the use of emergency stationary ICE in emergency situations.</li> <li>(2) You may operate your emergency stationary ICE for any combination of the purposes specified in paragraphs (f)(2)(i) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (f)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2)(i). <ul style="list-style-type: none"> <li>(i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours</li> </ul> </li> </ul>

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	<p>per calendar year.</p> <p>(3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (f)(2)(i) of this section. Except as provided in paragraph (f)(3)(i) of this section, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.</p> <p>(i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:</p> <p>(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;</p> <p>(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.</p> <p>(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.</p> <p>(D) The power is provided only to the facility itself or to support the local transmission and distribution system.</p> <p>(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.</p>
<b>2.2</b>	<p><b><u>Testing Requirements:</u></b></p> <p>A. <u>Visible Emissions Limitation</u> See monitoring requirements</p> <p>B. <u>Sulfur Oxide Emissions</u> B1. See monitoring requirements for CPCN No. 9341, Condition 8.</p>

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B2.	See Monitoring requirements
B3.	See Monitoring requirements
C.	<p><u>Carbon Monoxide</u></p> <p>The Permittee, owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b) .....must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) ... as applicable for the same model year and ... engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section [<b>Authority: §60.4211(c)</b>].</p>
D.	<p><u>Particulate Matter (PM)</u></p> <p>The Permittee, owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b) .....must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) ... as applicable for the same model year and ... engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section [<b>Authority: §60.4211(c)</b>].</p>
	<p><u>NOx Control</u></p>
E1.	<p><b>COMAR 26.11.36.03 - Requirements for Stationary Engines.</b></p> <p><u>See E2 Below</u></p>
E2.	<p><b>CPCN Case No. 9341, Air Quality Section, Condition No. 20 (a)i, (NSPS §§60.4202(b)(2) and 60.4205(b))</b></p> <p>The Permittee, owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b) .....must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) ... as applicable for the same model year and ... engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section [<b>Authority: §60.4211(c)</b>].</p> <p>§60.4211(a) - The Permittee, owner, and operator of a stationary CI ICE subject to the emissions standard of 40 CFR Part 60, Subpart IIII must do all of the following, except as permitted under paragraph (g) of this section:</p> <p>(1) Operate and maintain the stationary CI internal combustion engine and control</p>

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	<p>device according to the manufacturer's emission-related written instructions;</p> <p>(2) Change only those emission-related settings that are permitted by the manufacturer; and</p> <p>(3) Meet the requirements of 40 CFR Part 1068, as they apply to you</p> <p><b>E3 NO<sub>x</sub> RACT</b> See record keeping requirements. For fuel-burning equipment that operates more than 500 hours during a calendar year, perform a combustion analysis for each combustion unit at least once each calendar year and optimize combustion based on analysis <b>[Authority: COMAR 26.11.09.08G(1)(b)]</b>.</p> <p><b>E4 NSPS Subpart IIII</b> See requirements for E2 above</p> <p><b>F. <u>Control of NESHAP</u></b> See requirements for E2 above. <b>[Authority: 40 CFR §63.6590(c)(1).]</b></p> <p><b>G. <u>Operational Requirements</u></b> See monitoring requirements</p>
<b>2.3</b>	<p><b><u>Monitoring Requirements:</u></b></p> <p><b>A. <u>Visible Emissions Limitation</u></b> (1) The Permittee shall: (a) Properly operate and maintain the engine; and (b) Maintain an operations manual and preventive maintenance plan. <b>[Authority: COMAR 26.11.03.06C]</b></p> <p>(2) The Permittee shall properly operate and maintain the engine in a manner to minimize visible emissions. <b>[Authority: COMAR 26.11.03.06C]</b> and shall operate and maintain the stationary CI internal combustion engine according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. <b>[Authority: §60.4211(a)(1)].</b></p> <p><b>B. <u>Sulfur Oxide Emissions Limitation</u></b> <b>B1.</b> The Permittee shall perform sampling and analysis of the “as fired” sulfur content of the ULSD fuel oil to determine the percentage of sulfur by weight in the fuel oil. The sampling procedures shall follow the requirements of CPCN No. 9341, Condition No. 8 as prescribed in 40 CFR 75 Appendix D, Sec. 2.2. <b>[Authority:</b></p>



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	<b>CPCN No. 9341, Condition No. 8, Air Quality Section].</b>
B2.	The Permittee shall obtain fuel supplier's certification, which includes the name of the oil supplier and statement from the fuel supplier that the distillate fuel oil complies with the limitation of 0.3% by weight of the sulfur content in the fuel oil. <b>[Authority: COMAR 26.11.03.06C].</b>
B3.	The Permittee shall comply with requirements under 40 CFR 60 subpart IIII. <b>Note:</b> The monitoring requirements for complying with the CPCN requirements shall be the basis for complying with both the COMAR and 40 CFR 60 subpart IIII requirements. <b>[Authority: COMAR 26.11.03.06C].</b>
C.	Carbon Monoxide The Permittee shall perform preventative maintenance on the engine to maintain it in a condition such that they operate as designed <b>[Reference: COMAR 26.11.03.06C].</b>
D.	Particulate Matter The Permittee shall perform preventative maintenance on the engine to maintain it in a condition such that they operate as designed <b>[Reference: COMAR 26.11.03.06C].</b>
E1.	<u>Nitrogen Oxide Emissions</u> COMAR 26.11.36.03 - Requirements for Stationary Engines. The Permittee shall - <u>See E2 Below</u>
E2	<u>CPCN (NSPS Subpart IIII) – See Testing for E2</u> The Permittee shall perform preventative maintenance on the engine to maintain it in a condition such that they operate as designed <b>[Reference: COMAR 26.11.03.06C].</b>
E3.	NOx RACT Require each installation operators to attend operator training program on combustion optimization that are sponsored by the Department, U.S. EPA, or equipment vendors, once every three years. <b>[Authority: COMAR 26.11.03.06C and COMAR 26.11.09.08G(1)(d)].</b> Additionally, a Permittee who owns or operates fuel-burning equipment with a capacity factor (as defined in 40 CFR Part 72.2) of 15 percent or less shall provide certification of the capacity factor of the equipment to the Department in writing. <b>[Authority: COMAR 26.11.03.06C and</b>

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	<p><b>COMAR 26.11.09.08G(1)(a)].</b></p> <p>E4. <u>NSPS Subpart IIII</u>  <b>§60.4211(a)</b> - The Permittee, owner, and operator of a stationary CI ICE subject to the emissions standard of 40 CFR Part 60, Subpart IIII must do all of the following, except as permitted under paragraph (g) of this section:</p> <p>(1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions;</p> <p>(2) Change only those emission-related settings that are permitted by the manufacturer.</p> <p>F. <u>NESHAP</u>  See monitoring requirement E2 above.</p> <p>G. <u>Operational Limitations</u>  The Permittee, owner, or operator must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in §60.4211.</p> <p>(a) If you are an owner or operator of an emergency stationary CI internal combustion engine that does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter prior to startup of the engine.</p> <p>(b) If you are an owner or operator of a stationary CI internal combustion engine equipped with a diesel particulate filter to comply with the emission standards in §60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached. - N/A [<b>Authority: §60.4209</b>].</p>
<b>2.4</b>	<p><b><u>Record Keeping Requirements:</u></b>  <b>NOTE:</b> All records must be maintained for a period of 5 years [<b>Reference: COMAR 26.11.03.06.C (5) (g)</b>].</p> <p>A. <u>Visible Emissions Limitation</u>  The Permittee shall maintain records of the preventive maintenance that relates to combustion process performed on the engine on site for at least 5 years and make the records available to the Department upon request. The Permittee shall also retain the operations manual on site and make it available to the Department upon request [<b>Authority: COMAR 26.11.03.06C</b>].</p> <p>B. <u>Sulfur Oxide Emissions</u>  B1. The Permittee shall maintain records of fuel sampling and analysis for the “as fired”</p>

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	<p>sulfur content of the ULSD fuel oil utilized in the engine for at least five years. [Reference: CPCN No. 9341, Condition No. 14, Air Quality Section].</p> <p>B2. – B3. The Permittee shall maintain records of fuel suppliers' certifications of the percent sulfur content in the fuel on site for at least five years and shall make the records available to the Department upon request. The fuel oil certification report must contain the type, quantities, and analyses of all fuels burned. [Authority: COMAR 26.11.09.07C].</p> <p>C. Carbon Monoxide The Permittee shall maintain records of the preventative maintenance which relate to combustion performance [References: COMAR 26.11.03.06C]</p> <p>D. Particulate Matter The Permittee shall maintain records of the preventative maintenance which relate to combustion performance [References: COMAR 26.11.03.06C]</p> <p>E. <u>Nitrogen Oxide Emissions</u></p> <p>E1. The Permittee shall maintain a record of the date and time of the operation of the generator.</p> <p>E2. <u>CPCN (NSPS Subpart IIII)</u> The Permittee shall maintain records of the preventative maintenance which relate to combustion performance [References: COMAR 26.11.03.06C]</p> <p>E3. NOx RACT - The Permittee shall:</p> <p>(a) Maintain records of the result of the combustion analysis at the site and make the records available to the Department and EPA upon request. [Authority: COMAR 26.11.09.08G(c)].</p> <p>(b) Prepare and maintain a record of training program attendance for each operator at the site and make these records available to the Department upon request; [Authority: COMAR 26.11.09.08E(1)(e) and COMAR 26.11.09.08G (1)(e)].</p> <p>(c) Records of the calculated capacity factors on site for at least five years. [Authority: COMAR 26.11.09.08G (1)(a)].</p> <p>(d) The Permittee shall maintain annual fuel use records and records that are necessary to submit with the quarterly emissions report. [References: COMAR 26.11.09.08K(3) and COMAR 26.11.03.06C].</p> <p>E4. <u>NSPS Subpart IIII</u> See record keeping requirements for E2 above.</p> <p>F. <u>NESHAP</u></p>
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<b>Table IV – 2</b>	
	<p>See record keeping requirements for E2 above.</p> <p>G. <u>Operational Limitation</u> The Permittee shall maintain, on site, a record of operation of the engine to include fuel consumption, the hours of operation and purpose of operation - whether emergency or non-emergency situations such as maintenance and testing, etc – as necessitated by the operating requirements of §60.4211(f) and make the record available to the Department upon request. [Authority: COMAR 26.11.03.06C and §60.4211(f)].</p>
<b>2.5</b>	<p><b><u>Reporting Requirements:</u></b></p> <p>A. <u>Visible Emissions Limitation</u> The Permittee shall report incidents of visible emissions in accordance with Condition 4 of Section III “Report of Excess Emissions and Deviation. [Reference: COMAR 26.11.03.06C].</p> <p>B. <u>Sulfur Oxide Emissions</u> B1. The Permittee shall submit, within 45 days of the end of each quarter, the result of the sulfur content of the fuel to the Department [Reference: CPCN No. 9341, Air Quality Section, Condition No. 14]. B2. - B3. The Permittee shall submit the fuel supplier certification or a copy of the sulfur in fuel analyses to the Department upon request. [Authority: COMAR 26.11.09.07C]. Note 1: For any calendar quarter during which no delivery of fuel oil is received, the quarterly report shall state that no fuel was received during the quarter. Note 2: Note: The Permittee may submit one report that includes the required information to satisfy RACT and CPCN quarterly reporting requirements (See Reporting Condition G for CPCN). [Reference: COMAR 26.11.03.06C]</p> <p>C. <u>Carbon Monoxide</u> The Permittee shall submit records of the preventative maintenance performed, which relate to combustion performance, to the Department upon request [Reference: COMAR 26.11.03.06C].</p> <p>D. <u>Particulate Matter</u> The Permittee shall submit records of the preventative maintenance performed, which relate to combustion performance, to the Department upon request [Reference: COMAR 26.11.03.06C].</p> <p>E. <u>Nitrogen Oxide Emissions</u> E1. COMAR 26.11.36.03 – See requirements for E2 below.</p>

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**Table IV – 2**

	<p>E2.     <u>CPCN (NSPS Subpart IIII)</u> The Permittee shall submit records of the preventative maintenance performed, which relate to combustion performance, to the Department upon request [Reference: COMAR 26.11.03.06C].</p> <p>E3     <b>RACT</b> See Recordkeeping Requirements for records to submit when requested by the Department. COMAR 26.11.09.08G(1)(c) and (e).</p> <p>E4.     <u>NSPS Subpart IIII</u> See requirements for regulatory requirement E2 above.</p> <p>F.     <u>NESHAP</u> See requirements for regulatory requirement E2 above.</p> <p>G.     <u>Operational Limitation</u> The Permittee shall submit semi-annually or as appropriate, a report of all relevant operating records to include the hours of operation and purpose of operation of the engine - whether emergency or non-emergency situations such as maintenance and testing, etc – as necessitated by the operating requirements of §60.4211(f). [Authority: COMAR 26.11.03.06C and §60.4211(f)].</p>
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**A Permit Shield shall cover the applicable requirements identified for the emissions unit listed in the table above.**

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**SECTION V                    INSIGNIFICANT ACTIVITIES**

This section provides a list of insignificant emissions units that were reported in the Title V permit application. The applicable Clean Air Act requirements, if any, are listed below the insignificant activity.

- (1)    No. 1      Stationary internal combustion engines with an output less than 500 brake horsepower (373 kilowatts) and which are not used to generate electricity for sale or for peak or load shaving;

The diesel fuel fired fire protection engine/pump is subject to the following requirements:

- (a)    **COMAR 26.11.09.05E(2)** – “Emissions During Idle Mode. A person may not cause or permit the discharge of emissions from any engine, operating at idle, greater than 10 percent opacity.”
- (b)    **COMAR 26.11.09.05E(3)** – “Emissions During Operating Mode. A person may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity.”
- (c)    **COMAR 26.11.09.05E(4)** “Exceptions:
  - (i)    Section E(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system;
  - (ii)    Section E(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:
    - (1) Engines that are idled continuously when not in service:  
30 minutes,
    - (2) All other engines: 15 minutes; and
  - (iii)    Section E(2) and (3) does not apply while maintenance, repair, or testing is being performed by qualified mechanics.”
- (d)    **COMAR 26.11.09.07A(2)(b)** “ In Areas III and IV - Sulfur Content Limitations for Fuel. A person may not burn, sell, or make available for sale any fuel with a sulfur content by weight in excess of or which otherwise exceeds 0.3 percent by weight.”

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- (2) ☒ Space heaters utilizing direct heat transfer and used solely for comfort heat;
- (3) No. 75 Unheated VOC dispensing containers or unheated VOC rinsing containers of 60 gallons (227 liters) capacity or less;
- (4) Containers, reservoirs, or tanks used exclusively for:
  - (a) ☒ Storage of butane, propane, or liquefied petroleum, or natural gas;
  - (b) No. 20 Storage of lubricating oils;
  - (c) No. 3 Storage of ULSD fuel oil;
  - (d) No. 30 The storage of VOC normally used as solvents, diluents, thinners, inks, colorants, paints, lacquers, enamels, varnishes, liquid resins, or other surface coatings and having individual capacities of 2,000 gallons (7.6 cubic meters) or less;
- (5) ☒ Certain recreational equipment and activities, such as fireplaces, barbecue pits and cookers, fireworks displays, and kerosene fuel use;

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**SECTION VI STATE ONLY ENFORCEABLE CONDITIONS**

The Permittee is subject to the following State-only enforceable requirements:

**Applicable Regulations/Limits:**

1. **COMAR 26.11.06.08**  
“An installation or premises may not be operated or maintained in such a manner that a nuisance or air pollution is created. Nothing in this regulation relating to the control of emissions may in any manner be construed as authorizing or permitting the creation of, or maintenance of, nuisance or air pollution.”
2. **COMAR 26.11.06.09**  
“A person may not cause or permit the discharge into the atmosphere of gases, vapors, or odors beyond the property line in such a manner that a nuisance or air pollution is created.”
3. **COMAR 26.09.01, .02, .03, and .04** - Maryland’s CO<sub>2</sub> Budget and Trading Program, which requires the Permittee to comply with the provisions and requirements of Maryland’s CO<sub>2</sub> Budget and Trading Program. The Permittee shall comply with the CO<sub>2</sub> Budget and Trading Permit that is attached to the Part 70 permit. See Attachment 1.



Maryland Department of the Environment  
Air and Radiation Administration

# PHASE II ACID RAIN PERMIT

Plant Name: Brandywine Power Facility	
Affected Units: 1 and 2	
Owner: KMC Thermo, LLC.	ORIS Code 54832
Effective Date From: JUL 19 2024 To: January 31, 2029	

## Contents:

1. Statement of Basis.
2. SO<sub>2</sub> and NO<sub>x</sub> requirements for each affected unit.
3. Comments, notes and justifications regarding permit decisions and changes made to permit application forms during the review process, and any additional requirements or conditions.
4. The permit application forms submitted for this source. The owners and operators of the source must comply with the standard requirements and special provisions set forth in the application.

## 1. Statement of Basis

Statutory and Regulatory Authorities: In accordance with Environmental Article § 2-401, Annotated Code of Maryland and Titles IV and V of the Clean Air Act, the Maryland Department of the Environment, Air and Radiation Administration issues this permit pursuant to COMAR 26.11.02 and COMAR 26.11.03.

## Permit Approval



Christopher R. Hoagland, Director  
Air and Radiation Administration

JUL 19 2024

Date of Issue

Plant Name: Brandywine Power Facility

**2. SO<sub>2</sub> and NO<sub>x</sub> Requirements for each affected unit**

Units No. 1 and 2

**SO<sub>2</sub> Requirements**

SO<sub>2</sub> Allowances

KMC Thermo, LLC Company - Brandywine Power Facility will hold allowances for these units in accordance with 40 CFR 72.9(c)(1).

**NO<sub>x</sub> Requirements**

NO<sub>x</sub> Limit

None

**3. Comments, notes and justifications regarding decisions, and changes made to the permit application forms during the review process:**

These units burn natural gas or No. 2 fuel oil. Because these units are not coal fired, the oxides of nitrogen emissions reduction regulations of 40 CFR Part 76 are not applicable.

KMC Thermo, LLC became the new owner of Brandywine Power Facility on July 1, 2014.

Maryland Department of the Environment  
Air and Radiation Administration

**CO<sub>2</sub> BUDGET TRADING PROGRAM PERMIT**

Plant Name: Brandywine Power Facility	
Affected Trading Units: Units 1 & 2	
Owner: KMC Thermo, LLC	ORIS Code 54832
Effective Date From:	To: January 31, 2029

~~JUL 1 9 2024~~

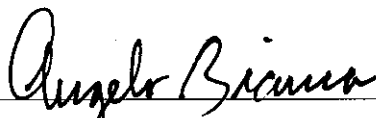
**Contents:**

1. Statement of Basis
2. Table of Affected Units
3. Standard Requirements.
4. The permit application forms submitted for this source.

1. Statement of Basis

Statutory and Regulatory Authorities: In accordance with Environmental Article §2-401, Annotated Code of Maryland, the Maryland Department of the Environment, Air and Radiation Administration issues this permit pursuant to COMAR 26.09.01 thru COMAR 26.09.04.

**Permit Approval**



Christopher R. Hoagland, Director  
Air and Radiation Administration

~~JUL 1 9 2024~~

Date of Issue

2. Affected Units

Unit ID #	Unit Description
Unit 1	GE Frame 7EA CT rated at 84 MW.
Unit 2	GE Frame 7EA CT rated at 84 MW.

Standard Requirements:

**(A) Selection and Responsibilities of CO<sub>2</sub> Budget Source Compliance Account Authorized Account Representatives.**

- (1) Each CO<sub>2</sub> budget source shall have a CO<sub>2</sub> authorized account representative and an alternate CO<sub>2</sub> authorized account representative.  
(COMAR 26.09.01.04B)
- (2) Upon receipt of a complete account certificate of representation:
  - (a) The CO<sub>2</sub> authorized account representative and alternate CO<sub>2</sub> authorized account representative shall represent and, by representations, actions, inactions, or submissions, legally bind each owner or operator of the CO<sub>2</sub> budget source represented and each CO<sub>2</sub> budget unit at the source in all matters pertaining to this subtitle, notwithstanding any agreement between the CO<sub>2</sub> authorized account representative, alternate CO<sub>2</sub> authorized account representative, and the owners or operators;  
(COMAR 26.09.01.04E (1))
  - (b) The owners or operators shall be bound by any decision or order issued to the CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative by the Department or a court regarding the CO<sub>2</sub> budget source or unit.  
(COMAR 26.09.01.04E (2))
- (3) A CO<sub>2</sub> budget permit may not be issued or a compliance account established for a CO<sub>2</sub> budget source until the Department has received a complete account certificate of representation for a CO<sub>2</sub> authorized account representative and alternate CO<sub>2</sub> authorized account representative of the source and the CO<sub>2</sub> budget units at the source.  
(COMAR 26.09.01.04F)
- (4) Each submission shall be signed and certified by the CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative on behalf of each CO<sub>2</sub> budget source and shall include the following statement by the CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative: "I am authorized to make the submission on behalf of the owners or operators of the CO<sub>2</sub> budget sources or CO<sub>2</sub> budget units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in the document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment."

(COMAR 26.09.01.04G)

## **(B) Distribution Of CO<sub>2</sub> Allowances And Compliance**

- (1) Unless otherwise specified in this chapter, a CO<sub>2</sub> budget source shall demonstrate compliance with its CO<sub>2</sub> budget emissions limitation by having one CO<sub>2</sub> allowance in its compliance account for every ton of CO<sub>2</sub> that it emits in a control period, by the allowance transfer deadline for that control period.  
(COMAR 26.09.02.03E(1))
- (2) The following CO<sub>2</sub> allowances may be deducted from a compliance account for purposes of complying with a budget source's CO<sub>2</sub> budget emissions limitation for a certain control period
  - (a) CO<sub>2</sub> allowances that are not CO<sub>2</sub> offset allowances and are identified as allowances falling within a prior control period or the same control period for which the allowances are deducted;
  - (b) CO<sub>2</sub> allowances that are held or transferred into the CO<sub>2</sub> budget source's compliance account as of the CO<sub>2</sub> allowance transfer deadline for that control period;
  - (c) CO<sub>2</sub> offset allowances that are available to be deducted for compliance during a control period may not exceed the following:
    - (i) 3.3 percent;
    - (ii) 5 percent, if the Department determines that there has been a Stage 1 trigger event; and
    - (iii) 10 percent, if the Department determines that there has been a Stage 2 trigger event.(COMAR 26.09.02.03E(2)(a)-(c))
- (3) The Department shall deduct CO<sub>2</sub> allowances from the CO<sub>2</sub> budget source's compliance account until the number of CO<sub>2</sub> allowances deducted equals the number of tons of total CO<sub>2</sub> emissions, less any CO<sub>2</sub> emissions attributable to the burning of eligible biomass.  
(COMAR 26.09.02.03E (3))
- (4) The identification of available CO<sub>2</sub> allowances for compliance deduction by serial number or by default is as follows:
  - (a) The CO<sub>2</sub> authorized account representative for a source's compliance account may request that specific CO<sub>2</sub> allowances, identified by serial number for a control period, be deducted; and
  - (b) In the absence of an identification or in the case of a partial identification of available CO<sub>2</sub> allowances by serial number, the Department shall deduct CO<sub>2</sub> allowances for a control period in the following descending order:
    - (i) For the first control period, all CO<sub>2</sub> allowances purchased by direct sale from the Department during years 2009, 2010, and 2011 resulting from the occurrence of the \$7 auction clearing price;
    - (ii) All CO<sub>2</sub> allowances for a control period allocated to a CO<sub>2</sub> budget unit from the Long Term Contract Set-aside Account or the Clean Generation Set-aside Account;
    - (iii) Subject to the relevant compliance deduction limitations identified in §E(2)(c) of this regulation, any CO<sub>2</sub> offset allowances transferred and recorded in the compliance account, in chronological order; and
    - (iv) Any CO<sub>2</sub> allowances, other than those identified in §E(4)(b)(i) - (iii) of this regulation, that

are available for deduction in the order they were recorded.

(COMAR 26.09.02.03E (4)(a)-(b))

(5) Deductions for Excess Emissions:

- (a) If a CO<sub>2</sub> budget source has excess emissions, the Department shall deduct, from the CO<sub>2</sub> budget source's compliance account, CO<sub>2</sub> allowances from allocation years that occur after the control period in which the source has excess emissions that equal three times the number of the source's excess emissions.
- (b) If a source has insufficient CO<sub>2</sub> allowances to cover three times the number of the source's excess emissions, the source shall immediately transfer sufficient allowances into its compliance account.
- (c) CO<sub>2</sub> offset allowances may not be deducted to account for the source's excess emissions.
- (d) Any CO<sub>2</sub> allowance deduction does not affect the liability of the owners or operators of the CO<sub>2</sub> budget units at the source for any fine, penalty, or assessment, or their obligation to comply with any other remedy, for the same violation, as ordered under applicable State law.  
(COMAR 26.09.02.03E (5)(a)-(d))

(6) The following guidelines apply in assessing fines, penalties, or other obligations:

- (a) For purposes of determining the number of days of violation, if a CO<sub>2</sub> budget unit has excess emissions for a control period, each day in the control period constitutes a day of violation unless the owners or operators of the unit can demonstrate to the satisfaction of the Department that a lesser number of days should be considered; and
- (b) The Department shall consider the amount of excess emissions in determining the severity of the violation.  
(COMAR 26.09.02.03E (6)(a)-(b))

(7) If the CO<sub>2</sub> budget source's compliance account no longer exists, the CO<sub>2</sub> allowances shall be deposited in a general account selected by the owner or operator of the CO<sub>2</sub> budget source.  
(COMAR 26.09.02.03E (7))

(8) Adjustments and Errors:

- (a) The Department may review and conduct independent audits concerning any submission under this subtitle and make appropriate adjustments of the information, if necessary.
- (b) The Department may correct any error in any account and, within 10 business days of making any correction, notify the CO<sub>2</sub> authorized account representative for the account  
(COMAR 26.09.02.03E (8)(a)-(b))

**(C) Applicability and Administration**

- (1) The requirements of this permit apply to the owner or operator of a CO<sub>2</sub> budget unit. When this permit establishes a requirement such as the submittal of a permit application, a report, a request for allowances or transfer of allowances, or general information, these actions shall be achieved through the authorized account representative on behalf of the owner or operator of the affected CO<sub>2</sub> budget source or unit.  
(COMAR 26.09.02.02A)

- (2) The requirements of this subtitle are effective on January 1, 2009 or, for new CO<sub>2</sub> budget units, on

the day on which the unit commences operation.  
(COMAR 26.09.02.02C).

- (3) The provisions of this permit do not exempt or otherwise relieve the owners or operators of a CO<sub>2</sub> budget source from achieving compliance with any other provision of applicable State and federal laws and regulations.  
(COMAR 26.09.02.02D).

- (4) Unless otherwise stated under this subtitle, any time period scheduled to begin:

- (a) On the occurrence of an act or event, begins on the day the act or event occurs; and  
(b) Before the occurrence of an act or event, is computed so that the period ends the day before the act or event occurs.  
(COMAR 26.09.02.02F)

- (5) Unless otherwise stated, if the final day of any time period for performing an act required by this subtitle falls on a weekend or on a State or federal holiday, the time period is extended until or to the next business day.  
(COMAR 26.09.02.02G)

#### **(D) Permit Requirements**

- (1) The account representative or designate alternate account representative) of each affected unit at a source, (every fossil fuel fired unit with a nameplate capacity of 25 MW or greater) for that source shall comply with the following:

- (a) The CO<sub>2</sub> authorized account representative for the source shall submit an initial CO<sub>2</sub> budget permit application by October 1, 2008, or 12 months before the date on which the CO<sub>2</sub> budget source, or a new unit at the source, commences operation.  
(COMAR 26.09.02.04A (2));

- (b) The CO<sub>2</sub> budget permit application shall include the following in a format prescribed by the Department: 1) the identification of the CO<sub>2</sub> budget source; 2) facility name and the ORIS (Office of Regulatory Information Systems) or facility code assigned to the source by the Energy Information Administration of the U. S. Department of Energy, if applicable; 3) each CO<sub>2</sub> budget unit at the source; and 4) other information required by the Department.  
(COMAR 26.09.02.04A (3))

- (c) The authorized account representative for the source shall submit a complete application for the renewal of an existing CO<sub>2</sub> budget permit on forms provided by the Department not later than 90 days before the expiration of the current CO<sub>2</sub> budget permit.  
(COMAR 26.09.02.04 E)

- (2) The owners and operators of each affected source shall have a CO<sub>2</sub> Budget Trading Program permit (the "budget permit") issued by the Department.  
(COMAR 26.09.02.04A (1)).

- (3) The CO<sub>2</sub> budget permit issued by the Department shall be separate but attached to the budget source's Part 70 permit.

(COMAR 26.09.02.04B).

- (4) A CO<sub>2</sub> budget permit expires 5 years from the date of issuance by the Department, unless an earlier expiration date is specified in the permit.

(COMAR 26.09.02.04D)

### **(E) Monitoring, Initial Certification and Recertification Requirements**

- (1) For each control period in which a CO<sub>2</sub> budget source is subject to the CO<sub>2</sub> budget emissions limitation, the CO<sub>2</sub> authorized account representative of the source shall submit a compliance certification report by the March 1 following the relevant control period.

(COMAR 26.09.02.05 A (1)).

- (2) The CO<sub>2</sub> authorized account representative shall include in the compliance certification report the following:

(a) Identification of the source and each CO<sub>2</sub> budget unit at the source;

(b) At the CO<sub>2</sub> authorized account representative's option, the serial numbers of the CO<sub>2</sub> allowances that are to be deducted from the source's compliance account for the control period, including the serial numbers of any CO<sub>2</sub> offset allowances that are to be deducted subject to applicable limitations; and

(c) The compliance certification required by Condition (d)(3) of this permit.

(COMAR 26.09.02.05 A (2)).

- (3) In the compliance certification report, the CO<sub>2</sub> authorized account representative shall certify whether the source and each CO<sub>2</sub> budget unit at the source for which the compliance certification is submitted was operated during the control period in compliance with the requirements of this subtitle, including:

(a) Whether each CO<sub>2</sub> budget unit at the source was operated in compliance with the CO<sub>2</sub> budget emissions limitation;

(b) Whether the monitoring plan applicable to each unit at the source has been maintained to reflect the actual operation and monitoring of the unit and contains all information necessary to track CO<sub>2</sub> emissions from the unit;

(c) Whether all CO<sub>2</sub> emissions from each unit at the source were monitored or accounted for through the missing data procedures and reported in the quarterly monitoring reports, including: identification of all conditional data reported in the quarterly reports; and if conditional data were reported, whether the status of all conditional data has been resolved and all necessary quarterly report resubmissions have been made;

(d) Whether the basis for certification or for using an excepted monitoring method or approved alternative monitoring method has changed;



- (e) If a change is required to be reported, include: the nature and reasons for the change; when the change occurred; and how the unit's compliance status was determined after the change, including the method used to determine emissions when a change mandated the need for monitor recertification.  
(COMAR 26.09.02.05A (3) (a)-(e))
- (4) The Department, at its discretion, may review and conduct independent audits of any compliance certification or other submission required by this permit.  
(COMAR 26.09.02.05 B (1))
- (5) The Department may deduct CO<sub>2</sub> allowances from, or transfer CO<sub>2</sub> allowances to, a compliance account to correct errors in the account or to accurately reflect CO<sub>2</sub> emissions, based on the information in the compliance certification or other submissions.  
(COMAR 26.09.02.05 B (2))
- (6) The owner or operator of a CO<sub>2</sub> budget unit shall:
  - (a) Install monitoring systems to monitor CO<sub>2</sub> concentration, stack gas flow rate, oxygen concentration, heat input, and fuel flow rate;
  - (b) Install all monitoring systems in accordance with 40 CFR Part 75, except for equation G-1 in Appendix G (attached at the end of this permit); and
  - (c) Record, report, and verify the data from the monitoring systems.  
(COMAR 26.09.02.10A (1) (a)-(c))
- (7) Install and certify the monitoring system on or before the following dates:
  - (a) For a CO<sub>2</sub> budget unit that commences commercial operation before July 1, 2008, the owner or operator shall comply on or before January 1, 2009; and
  - (b) For a CO<sub>2</sub> budget unit that commences commercial operation or constructs a new stack or flue on or after July 1, 2008, the owner or operator shall comply by January 1, 2009, or 90 operating days after the date on which the unit commences commercial operation.  
(COMAR 26.09.02.10 A (1) (d))
- (8) The owner or operator of a CO<sub>2</sub> budget unit that does not meet the applicable compliance date shall, in accordance with the provisions in 40 CFR §75.31(b)(2) or (c)(3), or §2.4 of Appendix D, determine, record, and report maximum potential or, as appropriate, minimum potential for the following:
  - (a) CO<sub>2</sub> concentration;
  - (b) CO<sub>2</sub> emissions rate;
  - (c) Stack gas moisture content;
  - (d) Fuel flow rate; and

- (e) Any other parameter required to determine CO<sub>2</sub> mass emissions.  
(COMAR 26.09.02.10 A (2) (a)-(e))
- (9) The owner or operator of a CO<sub>2</sub> budget unit that does not meet the applicable compliance date for any monitoring system shall determine, record, and report substitute data using the applicable missing data procedures in 40 CFR Part 75 Subpart D, or Appendix D, instead of the maximum potential values or, as appropriate, minimum potential values for a parameter, if the owner or operator demonstrates that there is continuity between the data streams for that parameter before and after the construction or installation.  
(COMAR 26.09.02.10 A (3))
- (10) An owner or operator of a CO<sub>2</sub> budget unit or a non-CO<sub>2</sub> budget unit monitored under 40 CFR §75.72 (b) (2) (ii) may not:
  - (a) Use any alternative monitoring system, alternative reference method, or any other alternative for the required continuous emissions monitoring system without having obtained prior written approval from the Department;
  - (b) Operate the unit so as to discharge, or allow to be discharged, CO<sub>2</sub> emissions to the atmosphere without accounting for all emissions in accordance with the applicable provisions of this chapter and 40 CFR Part 75;
  - (c) Disrupt the operation of the CEMS, any portion of the CEMS, or any other approved emissions monitoring method, and thereby avoid monitoring and recording CO<sub>2</sub> mass emissions discharged into the atmosphere, except for periods of recertification or periods when calibration, quality assurance testing, or maintenance is performed; or
  - (e) Permanently discontinue use of the approved CEMS unless the owner or operator monitors emissions with a system approved in accordance with this chapter and 40 CFR Part 75.  
(COMAR 26.09.02.10 A (4) (a)-(e))
- (11) For purposes of this subtitle only, the owner or operator of a CO<sub>2</sub> budget unit is exempt from demonstrating compliance with the initial certification requirements of 40 CFR §75.20 for a monitoring system if the following conditions are met:
  - (a) The monitoring system has been previously certified in accordance with 40 CFR §75.20; and
  - (b) The applicable quality assurance and quality-control requirements of 40 CFR §75.21 and Appendix B and Appendix D of 40 CFR Part 75 are fully met for the certified monitoring system.  
(COMAR 26.09.02.10 B (1) (a)-(b))
- (12) The recertification provisions of this regulation apply to a monitoring system exempt from the initial certification requirements of this regulation.  
(COMAR 26.09.02.10 B (2))
- (13) If the Department has previously approved a petition under 40 CFR §75.72(b)(2)(ii) or 40 CFR

§75.16(b)(2)(ii)(B) pursuant to 40 CFR §75.13 for apportioning the CO<sub>2</sub> emissions rate measured in a common stack or a petition under 40 CFR §75.66 for an alternative requirement in 40 CFR Part 75, the CO<sub>2</sub> authorized account representative shall resubmit the petition to the Department to determine whether the approval applies under this chapter.

(COMAR 26.09.02.10 B (3))

- (14) The owner or operator of a CO<sub>2</sub> budget unit shall comply with the initial certification and recertification procedures for a CEMS and an excepted monitoring system under 40 CFR Part 75, Appendix D.

(COMAR 26.09.02.10 B (4))

- (15) The owner or operator of a unit that qualifies to use the low mass emissions excepted monitoring methodology in 40 CFR §75.19 or that qualifies to use an alternative monitoring system under 40 CFR Part 75, Subpart E, shall comply with this regulation.

(COMAR 26.09.02.10 B (5))

- (16) When the owner or operator replaces, modifies, or changes a CEMS that the Department determines significantly affects the ability of the system to accurately measure or record CO<sub>2</sub> mass emissions or to meet the quality assurance and quality control requirements of 40 CFR §75.21 or Appendix B, the owner or operator shall recertify the monitoring system according to 40 CFR §75.20(b).

(COMAR 26.09.02.10 C (1))

- (17) When the owner or operator replaces, modifies, or changes the flue gas handling system or the unit's operation in a manner that the Department determines has significantly changed the flow or concentration profile, the owner or operator shall recertify the CEMS according to 40 CFR §75.20(b).

(COMAR 26.09.02.10 C (2))

- (18) Approval Process for Initial Certifications and Recertification. The procedures in 40 CFR §75.20(b)(5) and (g)(7) apply for recertification. The CO<sub>2</sub> authorized account representative shall submit to the Department:

(a) A written notice of the dates of certification; and

(b) A recertification application for each monitoring system, including the information specified in 40 CFR §75.63.

(COMAR 26.09.02.10 C(3) (a)-(b))

- (19) Provisional certification data for a monitor shall be:

(a) Determined in accordance with 40 CFR §75.20(a)(3);

(b) A provisionally certified monitor may be used for a period not to exceed 120 days after receipt of the complete certification application for the monitoring system or component; and

(c) Data measured and recorded by the provisionally certified monitoring system or component is considered valid quality assured data, retroactive to the date and time of provisional

certification, if the Department does not issue a notice of disapproval within 120 days of receipt of the complete certification application.  
(COMAR 26.09.02.10 C (4) (a)-(c))

- (20) The Department shall issue a written notice of approval or disapproval of the certification application to the owner or operator within 120 days of receipt of the complete certification application.  
(COMAR 26.09.02.10 D (1))
- (21) If the Department does not issue the notice within the 120-day period, each monitoring system that meets the applicable performance requirements of 40 CFR Part 75 and is included in the certification application shall be deemed certified for use.  
(COMAR 26.09.02.10 D (2))
- (22) If the certification application is complete and shows that each monitoring system meets the applicable performance requirements of 40 CFR Part 75, the Department shall issue a written notice of approval of the certification application within 120 days of receipt.  
(COMAR 26.09.02.10 D (3))
- (23) If the certification application is not complete, the Department shall issue a written notice of incompleteness that sets a reasonable date by which the CO<sub>2</sub> authorized account representative is to submit the additional information required to complete the certification application.  
(COMAR 26.09.02.10 D (4))
- (24) If the CO<sub>2</sub> authorized account representative does not comply with the notice of incompleteness by the specified date, the Department may issue a notice of disapproval.  
(COMAR 26.09.02.10 D (5))
- (25) If the Department issues a notice of disapproval of a certification application or a notice of disapproval of certification status, the owner or operator shall substitute the following values for each disapproved monitoring system, for each hour of unit operation during the period of invalid data beginning with the date and hour of provisional certification and continuing until the time, date, and hour specified under 40 CFR §75.20(a)(5)(i) or 75.20(g)(7):
- (a) For units using or intending to monitor for CO<sub>2</sub> mass emissions using heat input or for units using the low mass emissions excepted methodology under 40 CFR §75.19, the maximum potential hourly heat input of the unit; or
  - (b) For units intending to monitor for CO<sub>2</sub> mass emissions using a CO<sub>2</sub> pollutant concentration monitor and a flow monitor, the maximum potential concentration of CO<sub>2</sub> and the maximum potential flow rate of the unit under 40 CFR Part 75, Appendix A, §2.1.  
(COMAR 26.09.02.10 D (6) (a)-(b))
- (26) The CO<sub>2</sub> authorized account representative shall submit a notification of certification retest dates and a new certification application. The owner or operator shall repeat all certification tests or other requirements that were failed by the monitoring system, as indicated in the Department's notice of disapproval, not later than 30 operating days after the date of issuance of the notice of disapproval.

(COMAR 26.09.02.10 D (7))

- (27) The owner or operator of a unit qualified to use the low mass emissions excepted methodology under 40 CFR §75.19 shall meet the applicable certification and recertification requirements of 40 CFR §§75.19(a) (2) and 75.20(h).

(COMAR 26.09.02.10 E (1))

- (28) If the owner or operator of this unit elects to certify a fuel flow meter system for heat input determinations, the owner or operator shall also meet the certification and recertification requirements in 40 CFR §75.20(g).

(COMAR 26.09.02.10 E (2))

- (29) Certification and Recertification Procedures for Alternative Monitoring Systems. For each unit for which the owner or operator intends to use an alternative monitoring system approved by the Department, 40 CFR Part 75, Subpart E, shall be used to comply with the applicable notification and application procedures of 40 CFR §75.20(f).

(COMAR 26.09.02.10 F)

- (30) When any monitoring system fails to meet the quality assurance and quality control requirements or data validation requirements of 40 CFR Part 75, data shall be substituted using the applicable procedures in 40 CFR Part 75, Subpart D, Appendix D.

(COMAR 26.09.02.10 G (1))

- (31) Audit Decertification.

(a) Whenever both an audit of a monitoring system and a review of the initial certification or recertification application reveal that any monitoring system should not have been certified or recertified because it did not meet a particular performance specification or the applicable provisions of 40 CFR Part 75, both at the time of the initial certification or recertification application submission and at the time of the audit, the Department shall issue a notice of disapproval of the certification status of the monitoring system.

(b) By issuing the notice of disapproval, the certification status of the monitoring system is prospectively revoked.

(COMAR 26.09.02.10 G (2))

- (32) The data measured and recorded by the monitoring system may not be considered valid quality-assured data from the date of issuance of the notification of the revoked certification status.

(COMAR 26.09.02.10 G (3))

## **(F) Record Keeping and Reporting Requirements**

- (1) The CO<sub>2</sub> authorized account representative shall comply with all record-keeping and reporting requirements in COMAR 26.09.02.10 and the applicable record-keeping and reporting requirements under 40 CFR §75.73.

(COMAR 26.09.02.11 A)

- (2) The CO<sub>2</sub> authorized account representative shall submit quarterly reports as described below in this section.

(COMAR 26.09.02.11 B (1))

- (3) The report shall contain the CO<sub>2</sub> mass emissions data for the CO<sub>2</sub> budget unit in an electronic format, unless otherwise required by the Department, for each calendar quarter beginning with:
- (a) The calendar quarter covering January 1, 2009 — March 31, 2009, for a unit that commences commercial operation before July 1, 2008; or
  - (b) For a unit commencing commercial operation on or after July 1, 2008, the calendar quarter corresponding to the earlier of the following dates: date of provisional certification; or applicable deadline for initial certification.
  - (c) If the quarter is the third or fourth quarter of 2008, reporting shall commence in the quarter covering January 1, 2009 through March 31, 2009.

(COMAR 26.09.02.11 B (2) (a)-(c))

- (4) The CO<sub>2</sub> authorized account representative shall submit each quarterly report within 30 days following the end of the calendar quarter covered by the report and in accordance with 40 CFR Part 75, Subpart H, §75.64 and 40 CFR Part 75, Subpart G except for the opacity, NO<sub>x</sub> and SO<sub>2</sub> provisions.

(COMAR 26.09.02.11 B (3))

- (5) The CO<sub>2</sub> authorized account representative shall submit a compliance certification in support of each quarterly report. The certification shall state that:

- (a) The monitoring data submitted were recorded in accordance with the applicable requirements of this chapter and 40 CFR Part 75, including the quality assurance procedures and specifications;
- (b) For a unit with add-on CO<sub>2</sub> emissions controls and for all hours where data are substituted in accordance with 40 CFR §75.34(a)(1), the add-on emissions controls were operating within the range of parameters listed in the quality assurance and quality control program under 40 CFR Part 75, Appendix B, and the substitute values do not systematically underestimate CO<sub>2</sub> emissions; and
- (c) The CO<sub>2</sub> concentration values substituted for missing data under 40 CFR Part 75, Subpart D, do not systematically underestimate CO<sub>2</sub> emissions.

(COMAR 26.09.02.11 B (4) (a)-(c))

- (6) The CO<sub>2</sub> authorized account representative of a CO<sub>2</sub> budget unit may submit a petition to the Department under 40 CFR §75.66 requesting approval to apply an alternative to any requirement of this chapter.

(COMAR 26.09.02.11 C)

- (7) The CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative of a CO<sub>2</sub> budget unit that burns eligible biomass as a compliance mechanism under this chapter shall report the following information for each calendar quarter:

- (a) For each shipment of solid eligible biomass fuel fired at the CO<sub>2</sub> budget unit:

- (i) Total eligible biomass fuel input, on an as-fired basis, in pounds; and
- (ii) The moisture content, on an as-fired basis, as a fraction of weight;
- (b) For each distinct type of gaseous eligible biomass fuel fired at the CO<sub>2</sub> budget unit:
  - (i) The density of the biogas, on an as-fired basis, in pounds per standard cubic foot; and
  - (ii) The moisture content of the biogas, as a fraction by total weight;
- (c) For each distinct type of eligible biomass fuel fired at the CO<sub>2</sub> budget unit:
  - (i) The dry basis carbon content of the fuel type, as a fraction by dry weight;
  - (ii) The dry basis higher heating value, in MMBtu per dry pound;
  - (iii) The total dry basis eligible biomass fuel input, in pounds;
  - (iv) The total eligible biomass fuel heat input; and
  - (v) Chemical analysis, including heat value and carbon content;
- (d) The total amount of CO<sub>2</sub> emitted from the CO<sub>2</sub> budget unit due to firing eligible biomass fuel, in tons, calculated as in §D(2)(b) of this regulation;
- (e) The total heat input to the CO<sub>2</sub> budget unit due to firing eligible biomass fuel, in MMBtu, calculated below; and
- (f) Description and documentation of monitoring technology and fuel sampling methodology employed, including sampling frequency.  
(COMAR 26.09.02.11 D (1) (a)-(f))
- (8) An owner or operator of a CO<sub>2</sub> budget unit shall calculate and submit on a quarterly basis the total dry weight for each distinct type of eligible biomass fired by the CO<sub>2</sub> budget unit during the reporting quarter:

- (a) For solid eligible biomass fuel, determined as follows:

$$F_j = \sum_{i=1}^m (1 - M_i) x F_i$$

where:

- (i)  $F_j$  = Total eligible biomass dry basis fuel input (pounds) for fuel type j;
- (ii)  $F_i$  = Eligible biomass as fired fuel input (pounds) for fired shipment i;
- (iii)  $M_i$  = Moisture content (fraction) for fired shipment i;
- (iv) i = fired fuel shipment;
- (v) j = fuel type; and
- (vi) m = number of shipments.

- (b) For gaseous eligible biomass fuel, as determined as follows:

$$F_j = D_j \times V_j \times (1 - M_j)$$

where:

- (i)  $F_j$  = Total eligible biomass dry basis fuel input (pounds) for fuel type j;
- (ii)  $D_j$  = Density of biogas (pounds/scf) for fuel type j;
- (iii)  $V_j$  = Total volume (scf) for fuel type j;
- (iv)  $M_j$  = Moisture content (fraction) for fuel type j; and
- (v) j = fuel type

(COMAR 26.09.02.11 D (2) (a)-(c))

- (9) The amount of CO<sub>2</sub> emissions that is produced from the firing of eligible biomass for any full calendar quarter, during which either no fuel other than eligible biomass is combusted or during which fuels other than eligible biomass are combusted, is determined as follows:

$$CO_2 \text{ tons} = \sum_{j=1}^n F_j \times C_j \times O_j \left( \frac{44 \left( \frac{g}{mol CO_2} \right)}{12 \left( \frac{g}{mol C} \right)} \right) (0.0005)$$

where:

- (a) CO<sub>2</sub> tons = CO<sub>2</sub> emissions due to firing of eligible biomass for the reporting quarter;
- (b)  $F_j$  = Total eligible biomass dry basis fuel input (pounds) for fuel type j, as calculated in §D(2)(a) of this regulation;
- (c)  $C_j$  = Carbon fraction (dry basis) for fuel type j;
- (d)  $O_j$  = Oxidation factor for eligible biomass fuel type j, derived for solid fuels based on the ash content of the eligible biomass fired and the carbon content of this ash or for gaseous eligible biomass fuels, a default oxidation factor of 0.995 may be used;

$$(e) \frac{44 \left( \frac{g}{mol CO_2} \right)}{12 \left( \frac{g}{mol C} \right)}$$

= The number of tons of carbon dioxide that are created when one ton of carbon is combusted;

- (f) 0.0005 = The number of short tons which is equal to one pound;
- (g) j = Fuel type; and
- (h) n = number of distinct fuel types.

(COMAR 26.09.02.11 D (3))

- (10) Heat input due to firing of eligible biomass for each quarter shall be determined as follows:

- (a) For each distinct fuel type:

$$H_j = F_j \times HHV_j$$

where:



- (i)  $H_j$  = Heat input (MMBtu) for fuel type  $j$ ;
- (ii)  $F_j$  = Total eligible biomass dry basis fuel input (pounds) for fuel type  $j$ ;
- (iii)  $HHV_j$  = Higher heating value (MMBtu/pound), dry basis, for fuel type  $j$ , as determined through chemical analysis;
- (iv)  $j$  = Fuel type.

(b) For all fuel types:

$$\text{HeatInputMMBtu} = \sum_{j=1}^n H_j$$

where:

- (i)  $H_j$  = Heat input (MMBtu) for fuel type  $j$ ;
- (ii)  $j$  = fuel type; and
- (iii)  $n$  = number of distinct fuel types.

Fuel sampling methods and fuel sampling technology shall be consistent with the New York State Renewable Portfolio Standard Biomass Guidebook, May 2006.

(COMAR 26.09.02.11D(4) & D(5))

- (11) A CO<sub>2</sub> budget unit shall submit to the Department the megawatt-hour value and a statement certifying that the megawatt-hour of electrical output reported reflects the total actual electrical output for all CO<sub>2</sub> budget units at the facility used by the independent system operator (ISO) to determine settlement resources of energy market participants.

(COMAR 26.09.02.11 E (1))

- (12) A CO<sub>2</sub> budget unit shall report gross hourly megawatts to the Department in the same electronic data report (EDR) for gross output as submitted to the EPA Administrator, for the operating time in the hour, added for all hours in a year.

(COMAR 26.09.02.11 E (2))

- (13) A CO<sub>2</sub> budget unit shall submit the net electrical output to the Department in accordance with this regulation. A CO<sub>2</sub> budget source whose electrical output is not used in the independent system operator (ISO) energy market settlement determinations shall propose a method for quantification of net electrical output.

(COMAR 26.09.02.11 E (3))

- (14) For reporting of net steam output a CO<sub>2</sub> budget source:

- (a) Selling steam shall use billing meters to determine net steam output or an alternative method to measure net steam output approved by the Department.
- (b) If data for steam output is not available, the CO<sub>2</sub> budget source may report heat input, substituting useful steam output for steam output.

(COMAR 26.09.02.11 E (4) (a)-(b))

- (15) Each CO<sub>2</sub> budget source shall submit an output monitoring plan with a description and diagram that include the following:

- (a) If the CO<sub>2</sub> budget unit monitors net electric output, the diagram shall contain all CO<sub>2</sub> budget units and all generators served by each CO<sub>2</sub> budget unit and the relationship between CO<sub>2</sub> budget units and generators;
  - (b) If a generator served by a CO<sub>2</sub> budget unit is also served by a nonaffected unit, the nonaffected unit and its relationship to each generator shall be indicated on the diagram;
  - (c) The diagram shall indicate where the net electric output is measured and include all electrical inputs and outputs to and from the plant;
  - (d) If net electric output is determined using a billing meter, the diagram shall show each billing meter used to determine net sales of electricity and show that all electricity measured at the point of sale is generated by the CO<sub>2</sub> budget units;
  - (e) If the CO<sub>2</sub> budget unit monitors net thermal output, the diagram shall indicate all steam or hot water coming into the net steam system, including steam from CO<sub>2</sub> budget units and nonaffected units, and all exit points of steam or hot water from the net steam system;
  - (f) Each input and output stream shall have an estimated temperature, pressure and phase indicator, and an enthalpy in Btu per pound;
  - (g) The diagram of the net steam system shall identify all useful loads, house loads, parasitic loads, any other steam loads, and all boiler feedwater returns;
  - (h) The diagram shall represent all energy losses in the system as either usable or unusable losses;
  - (i) The diagram shall indicate all flow meters, temperature or pressure sensors, or other equipment used to calculate gross thermal output; and
  - (j) If a sales agreement is used to determine net thermal output, the diagram shall show the monitoring equipment used to determine the sales of steam.  
(COMAR 26.09.02.11 F (2) (a)-(j))
- (16) The description of the output monitoring system shall include:
- (a) A written description of the output system and the equations used to calculate output, and, for net thermal output systems, descriptions and justifications of each useful load;
  - (b) A detailed description of all quality assurance and quality control activities that will be performed to maintain the output system; and
  - (c) Documentation supporting any output value to be used as a missing data value if there are periods of invalid output data.
  - (d) The missing data output value shall be either zero or an output value that is likely to be lower than a measured value and approved as part of the required monitoring plan.  
(COMAR 26.09.02.11 F (3) (a)-(b))

- (17) A certification statement shall be submitted by the CO<sub>2</sub> authorized account representative stating that either:
- (a) The output monitoring system consists entirely of billing meters; or
  - (b) The output monitoring system meets one of the accuracy requirements for nonbilling meters.  
(COMAR 26.09.02.11 G (1) (a)-(b))
- (18) The billing meter shall record the electric or thermal output. Any electric or thermal output values reported shall be the same as the values used in billing for the output.  
(COMAR 26.09.02.11 G (2))
- (19) For nonbilling meters, either the output monitoring system shall meet an accuracy of within 10 percent of the reference value, or each component monitor for the output system shall meet an accuracy of within 3 percent of the full scale value, whichever is less stringent.  
(COMAR 26.09.02.11 G (3))
- (20) The system approach to accuracy shall include:
- (a) A determination of how the system accuracy of 10 percent is achieved using the individual components in the system; and
  - (b) Data loggers and any wattmeters used to calculate the final net electric output data or any flowmeters for steam or condensate, temperature measurement devices, absolute pressure measurement devices, and differential pressure devices used for measuring thermal energy.  
(COMAR 26.09.02.11 G (4) (a)-(b))
- (21) If, upon testing a piece of output measurement equipment, it is determined that the output readings are not accurate to within 3 percent of the full scale value, then the equipment shall be repaired or replaced to meet that requirement.  
(COMAR 26.09.02.11 G (5))
- (22) Data is invalid until the output measurement equipment passes an accuracy test or is replaced with another piece of equipment that passes the accuracy test.  
(COMAR 26.09.02.11 G (6))
- (23) Ongoing quality assurance and quality control activities shall be performed in order to maintain the output system.  
(COMAR 26.09.02.11 H (1))
- (24) If billing meters are used to determine output, quality assurance and quality control activities are not required beyond what are already performed.  
(COMAR 26.09.02.11 H (2))
- (25) Certain types of equipment such as potential transformers, current transformers, nozzle and venture type meters, and the primary element of an orifice plate only require an initial certification of calibration and do not require periodic recalibration unless the equipment is physically changed.

- (a) Pressure and temperature transmitters accompanying an orifice plate will require periodic retesting.
- (b) For other types of equipment, the meter accuracy shall be recalibrated or verified at least once every 2 years, unless a consensus standard allows for less frequent calibrations or accuracy tests.
- (c) For nonbilling meters, either the output monitoring system shall meet an accuracy of within 10 percent of the reference value, or each component monitor for the output system shall meet an accuracy of within 3 percent of the full scale value, whichever is less stringent.
- (d) If, upon testing a piece of output measurement equipment, it is determined that the output readings are not accurate to within 3 percent of the full scale value, then the equipment shall be repaired or replaced to meet that requirement.  
(COMAR 26.09.02.11 H (3) (a)-(e))

(26) Out-of-Control Periods.

- (a) If, upon testing a piece of output measurement equipment, it is determined that the output readings are not accurate to the certification value, data is invalid until the output measurement equipment passes an accuracy test or is replaced with another piece of equipment that passes the accuracy test.
- (b) All invalid data shall be replaced by either zero or an output value that is likely to be lower than a measured value and that is approved as part of the required monitoring plan.  
(COMAR 26.09.02.11 H (4) (a)-(b))

(27) The CO<sub>2</sub> authorized account representative shall submit annual output reports, as follows:

- (a) Data shall be sent both electronically and in hardcopy by March 1 for the immediately preceding calendar year; and  
(COMAR 26.09.02.11 I (1))

- (28) The annual report shall include unit level megawatt hours, all useful steam output, and a certification statement from the CO<sub>2</sub> authorized account representative stating the following, "I am authorized to make this submission on behalf of the owners and operators of the CO<sub>2</sub> budget sources or CO<sub>2</sub> budget units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment."  
(COMAR 26.09.02.11 I (2))

**(G) CO<sub>2</sub> Emission Offset Projects**

- (1) In order to qualify for the award of CO<sub>2</sub> offset allowances, the following offset projects shall satisfy all applicable requirements identified in COMAR 26.09.03 and initially commence on or after December

20, 2005:

- (a) Landfill methane capture and destruction;
- (b) Reduction in emissions of sulfur hexafluoride (SF<sub>6</sub>);
- (c) Sequestration of carbon due to afforestation;
- (d) Reduction or avoidance of CO<sub>2</sub> emissions from natural gas, oil, or propane end-use combustion due to end-use energy efficiency; and
- (e) Avoided methane emissions from agricultural manure management operations.  
(COMAR 26.09.03.01 A (a)-(e))

**KMC THERMO, LLC  
BRANDYWINE POWER FACILITY  
16400 MATTAWOMAN DRIVE, BRANDYWINE, MD 20613-8089  
PART 70 OPERATING PERMIT #24-033-2200  
FACT SHEET**

**Background**

Brandywine Power Facility (Brandywine), formerly known as Panda Brandywine Power Plant, was acquired from Panda Brandywine, LLC on June 1, 2014, by KMC Thermo, LLC. KMC is located in Houston Texas. The Brandywine facility is a nominal 230 megawatts (MW) electric co-generation facility located two miles south of Brandywine in Prince George's County. The facility consists of two combined-cycle units (Emissions Units 1 and 2 [EU-1 and EU-2]). Each unit is comprised of a General Electric (GE) Frame 7EA-DLN1 combustion turbine (CT) rated at 84 MW and an unfired heat recovery steam generator (HRSG). Steam produced by the HRSGs is routed to a common steam turbine (ST) for generation of additional electricity. Brandywine also installed an emergency generator as part of making the facility Black Start capable (Emissions Unit 3[EU-3]), which is a Caterpillar diesel engine Model C175-20 rated at 4000 kW. The EU-3 is fired exclusively on Ultra Low-Sulfur Diesel (ULSD) fuel.

The Maryland Public Service Commission (PSC) issued a Certificate of Public Convenience and Necessity (CPCN) to Panda Brandywine, LLC on September 5, 1994; PSC Case #8488. The facility began commercial operation on October 31, 1996. The facility produces electricity for distribution by the Potomac Electric Power Company (PEPCO). The applicable SIC Code for the facility is 4911 - Electric Services. The project was subject to major New Source Review (NSR), including Prevention of Significant Deterioration (PSD), and Non-Attainment NSR. Approval requirements pertaining to those air quality programs were specified in the CPCN.

Ancillary facilities include a two million gallon Ultra Low-Sulfur Diesel (ULSD) fuel storage tank, a re-circulating cooling water system, and miscellaneous support equipment. The facility utilizes pipeline natural gas (NG) or liquefied natural gas (LNG) as its primary fuel source with ULSD (0.0015 weight percent) fuel serving as a backup fuel. The combustion turbines are equipped with dry low NOx burners for natural gas firing and water injection for controlling NOx emissions when firing ULSD fuel. Brandywine uses natural gas or liquefied natural gas ninety-nine percent of the time and uses ULSD fuel occasionally to ascertain the reliability and availability of the combustion turbines when burning ULSD fuel and during Black Start Events. Brandywine will likely continue this pattern of fuel use.

Brandywine's combustion turbines (CTs) are subject to the New Source Performance Standards (NSPS) found in 40 CFR Subpart GG. This is based on the fact that the CTs were constructed after the October 3, 1977, applicability date. Also, they have a heat input at peak load equal to or greater than 10.7 gigajoules per hour (10 MMBtu/hr) based on the lower heating value of the fuel fired.

Combustion turbines may also be subject to the combustion turbine MACT established under 40 CFR Part 63 Subpart YYYYY if emissions of specified HAPs are exceeded. Subpart YYYYY establishes emissions limitations and operating limitations for Hazardous Air Pollutants (HAPs) emissions from stationary combustion turbines located at major sources of HAPs. The

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Brandywine combustion turbines are not major sources of HAPs emissions since they emit less than 10 tons per year of a single HAP and less than 25 tons per year of total HAPs. Certified annual HAP emissions are less than one (1) ton as shown in Table 2 below. Consequently, they are not subject to the Subpart YYYY.

As a major source of NO<sub>x</sub>, Brandywine is also subject to the NO<sub>x</sub> RACT (Reasonable Available Control Technology) requirements of COMAR 26.11.09.08. This regulation requires that the CTs either meet the emission limitations contained in COMAR 26.11.09.08G or meet applicable PSD limits, whichever is more restrictive. The PSD limits found in CPCN #9341, Condition No. 4, are more restrictive than the COMAR limits and therefore apply.

The major source threshold for triggering Title V permitting requirements in Prince George's County is 25 tons per year for volatile organic compounds (VOC), 25 tons per year for Nitrogen Oxides (NO<sub>x</sub>), 100 tons per year for any other criteria pollutants, and 10 tons for a single HAP or 25 tons per year for total HAPS. Since the facility-wide actual NO<sub>x</sub> emissions are greater than the major source threshold, Brandywine is required to obtain a Title V – Part 70 Operating Permit under COMAR 26.11.03.01. Additionally, it is an affected source subject to Title IV Acid Rain Phase II program requirements.

The Department received Brandywine's Part 70 Operating Permit renewal application on January 29, 2019. An administrative completeness review was conducted and the application was found to be administratively complete. Brandywine was notified of the application completeness decision and thus granting Brandywine an application shield.

**Emission Units Identification**

Brandywine has identified the following emissions units shown in Table 1 as subject to the Title V Operating Permit program.

**Table 1 - Emissions Units**

<b>MDE Registration/ No.</b>	<b>Emissions Unit No</b>	<b>Emission Unit Description</b>	<b>Date Installed</b>
033-2200-5-0844	EU-1	One (1) GE Frame 7EA Combustion Turbine rated at 84 MW.	June 1996
033-2200-5-0845	EU-2	One (1) GE Frame 7EA Combustion Turbine rated at 84 MW.	June 1996
033-2200-9-1465	EU-3	One (1) Caterpillar diesel engine Model C175-20 rated at 4000 kW.	May 2015

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The following Table 2 summarizes the most recent five years' actual emissions from Brandywine based on its Emission Certification Reports.

**Table 2-Actual Emissions**

<b>Emission Year</b>	<b>NO<sub>x</sub> (TPY)</b>	<b>SO<sub>x</sub> (TPY)</b>	<b>PM<sub>10</sub> (TPY)</b>	<b>CO (TPY)</b>	<b>VOC (TPY)</b>	<b>HAPS (TPY)</b>
2022	65.42	1.16	4.10	30.86	4.00	0.00
2021	88.30	1.80	5.70	44.91	6.26	0.00
2020	78.0	1.50	16.1	36.9	5.10	0.00
2019	86.8	1.8	19.3	44.1	6.1	0.00
2018	130	2.77	9.32	76.57	9.38	0.00

**GREENHOUSE GAS (GHG) EMISSIONS**

Brandywine emits the following greenhouse gases (GHGs) related to the Clean Air Act requirements: carbon dioxide, methane, and nitrous oxide. These GHGs are generated from the combustion turbines, which are the main sources of combustion related emissions at the plant.

When the Black Start Project was proposed, it was evaluated to determine if it would constitute a major modification of the existing Brandywine facility for construction permitting purposes. The Black Start Project would have been processed as a major modification for PSD and/or NA-NSR if there were significant emission increases associated with the modification. With respect to GHG emissions, the applicable threshold is 75,000 tons per year. The GHG emissions associated with the project was 981 tpy, well below the applicability threshold. While there are no applicable GHG Clean Air Act requirements at this time, the Permittee is still required to annually quantify its facility wide GHG emissions and report them in accordance with Section 3 of the Part 70 permit.

The following Table 3 summarizes the actual GHG emissions from Brandywine based on its Annual Emission Certification Reports:

**Table 3: Greenhouse Gases Emissions Summary**

<b>GHG</b>	<b>Factor</b>	<b>2018 tpy CO<sub>2</sub>e</b>	<b>2019 tpy CO<sub>2</sub>e</b>	<b>2020 tpy CO<sub>2</sub>e</b>	<b>2021 tpy CO<sub>2</sub>e</b>	<b>2022 tpy CO<sub>2</sub>e</b>
Carbon dioxide (CO <sub>2</sub> )	1	549,502.13	346,867	290,118	356,138.49	230346.59
Methane (CH <sub>4</sub> )	25	954.84	625.00	522.50	643.25	408.00
Nitrous Oxide (N <sub>2</sub> O)	310	4,132.86	2697.00	2,263.00	2,783.80	1,760.80
<b>Total GHG CO<sub>2</sub>eq</b>		<b>554589.83</b>	<b>350,189.00</b>	<b>292903.50</b>	<b>359,565.54</b>	<b>232515.39</b>



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**Cross-State Air Pollution Rule (CSAPR)**

The U.S. Environmental Protection Agency (EPA) issued the Cross-State Air Pollution Rule (CSAPR) in July 2011 to address Clean Air Act requirements concerning interstate transport of air pollution and to replace the previous Clean Air Interstate Rule (CAIR), which the D.C. Circuit remanded to the EPA for replacement. Following the original rulemaking, CSAPR was amended by three further rules known as the Supplemental Rule, the First Revisions Rule, and the Second Revisions Rule. As amended, CSAPR requires 28 states to limit their state-wide emissions of sulfur dioxide (SO<sub>2</sub>) and/or nitrogen oxides (NO<sub>x</sub>) in order to reduce or eliminate the states' contributions to fine particulate matter and/or ground-level ozone pollution in other states. The emissions limitations are defined in terms of maximum statewide "budgets" for emissions of annual SO<sub>2</sub>, annual NO<sub>x</sub>, and/or ozone season NO<sub>x</sub> by each state's large electricity generating units (EGUs). The emissions budgets are implemented in two phases of generally increasing stringency. As the mechanism for achieving compliance with the emissions limitations, CSAPR establishes federal implementation plans (FIPs) that require large EGUs in each affected state to participate in one or more new emission trading programs that supersede the existing CAIR emissions trading programs. On December 30, 2011, in response to petitions challenging CSAPR, the D.C. Circuit granted a stay of the rule, ordering the EPA to continue administering CAIR on an interim basis. In a subsequent decision, the Court vacated CSAPR but on April 29, 2014, the U.S. Supreme Court reversed that decision and remanded the case to the D.C. Circuit Court for further proceedings. In order to allow CSAPR to replace CAIR in an orderly manner, EPA filed a motion asking the D.C. Circuit to lift the stay and to toll, by three years, all CSAPR compliance deadlines that had not yet passed. On October 23, 2014, the Court granted the EPA's motion.

Consistent with the Court's order, compliance with CSAPR's Phase 1 emissions budgets is now required in 2015 and 2016 and compliance with the rule's Phase 2 emissions budgets and assurance provisions is now required in 2017 and beyond.

This renewal Part 70 permit identifies the applicable regulations of the CSAPR rule as found in 40 CFR Part 97 subparts AAAAAA- NO<sub>x</sub> Annual Trading Program, subparts BBBBBB- NO<sub>x</sub> Ozone Season Trading Program, and subpart CCCCCC SO<sub>2</sub> Group 1 - Trading Program.

**Recent Amendment to the Facility's Permit Condition**

**Installation of Black Start Capability**

On February 14, 2014, Panda Brandywine LLC filed an application for a CPCN with the PSC to modify Brandywine by adding "Black Start" capability. The application was docketed as PSC Case #9341. The PSC issued a Proposed Order on June 18, 2014, approving the project. The Proposed Order became a Final Order on July 10, 2014. The Final Order incorporated all previous conditions from Case #8488 with additional new conditions, as necessary, to address the Black Start project. As such, the amended CPCN conditions resulting from PSC Case #9341 supersedes the CPCN conditions of PSC Case #8488.

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The “Black Start Project” enabled Brandywine to start up a combustion turbine on its own without power from the grid, and to support PJM with regional startup capability during emergency conditions, thus enhancing the power grid system reliability. Specifically, the Black Start Project involved the addition of one 5,646-horsepower (4-MW) Caterpillar C175-20 diesel engine that is used to provide power to start up one of the two existing CTs (the “Black Start unit”) during a Black Start event. The diesel engine is fired exclusively on ultra low sulfur diesel (ULSD) and limited to a sulfur content of 0.0015% by weight. As part of the application review, potential emissions from the Black Start CT during a Black Start event were used to determine if the project would trigger the applicability of additional air regulatory programs such as PSD, NA-NSR, NSPS, NESHAP Greenhouse Gas (GHG) emissions. It was determined that neither PSD nor NA-NSR were triggered. However, both NSPS and NESHAP applicability thresholds were triggered. As a consequence, the CPCN was amended to include the applicable NSPS and NESHAP requirements. Additionally, operation of the CT during a Black Start event required that the CT operate at a maximum 10% load level, i.e. a generation rate of approximately 8.4 MW. Because the original CPCN prohibited operating the CT at a level below 51 MW, this specific restriction had to be appropriately amended. The Black Start unit is fully operational.

CPCN Case No. 9341 was amended by the PSC on April 5, 2017, to remove the 51 megawatt (MW) minimum load limit for the combustion turbines (EU-1 and EU-2). The 51 MW minimum load limit was replaced with the requirement (except for start-up and shutdown periods, and during black start events) that “...each combustion turbine unit shall operate only when the unit, for natural gas or LNG firing, is in DLN premix mode, or when firing ULSD fuel oil, water injection is engaged.”

**COMPLIANCE ASSURANCE MONITORING (CAM) APPLICABILITY**

Brandywine is not subject to CAM requirements. CAM is intended to provide a reasonable assurance of compliance with applicable requirements under the Clean Air Act for large emission units that rely on air pollution control (APC) equipment to achieve compliance. The CAM approach establishes monitoring for the purpose of: (1) documenting continued operation of the control measures within ranges of specified indicators of performance (such as emissions, control device parameters, and process parameters) that are designed to provide a reasonable assurance of compliance with applicable requirements; (2) indicating any excursions from these ranges; and (3) responding to the data so that the cause or causes of the excursions are corrected. In order for a unit to be subject to CAM, the unit must be located at a major source, be subject to an emission limitation or standard; use a control device to achieve compliance; have pre-control emissions of at least 100% of the major source amount; and must not otherwise be exempt from CAM. Applicability determinations are made on a pollutant-by-pollutant basis for each emissions unit.

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**Compliance Assurance Monitoring (CAM) Requirement.**

Brandywine Power Facility conducted a Compliance Assurance Monitoring (CAM) analysis for the facility and determined that the facility is not subject to the (CAM) Rule 40 CFR Subpart 64.

Brandywine Power Facility has no emissions sources that utilize any APC devices as defined by 40 CFR §64.1 to achieve compliance when firing natural gas or LNG. The 40 CFR §64.1 definition of a control device specifically excludes passive control measures that act to prevent pollutants from forming such as the use of combustion or other process design features or characteristics. The DLN (Dry Low NOx) combustor technology in use at the Brandywine Power Facility's CTs when firing natural gas or LNG is a passive control measure that acts to prevent NOx from forming.

The Brandywine Power Facility's CTs when firing No. 2 fuel (or ULSD fuel oil) are potentially subject to the CAM rule for NOx since water injection is used to reduce NOx emissions and the 40 CFR §64.1 definition of a control device specifically lists "injection systems (such as water, steam, ammonia, sorbent or limestone injection)" as examples of common control devices. However, the CTs are exempt from the CAM rule requirements during fuel oil firing pursuant to 40 CFR §64.2(b)(1)(vi) since the Part 70 permit specifies a continuous compliance determination method (as defined by 40 CFR §64.1) for the NOx emissions standards. Specifically, the Brandywine Power Facility operates and maintains a NOx/O<sub>2</sub> Continuous Emissions Monitoring system (CEMS) on the exhaust gases from the CTs.

**Regional Greenhouse Gas Initiative**

The Regional Greenhouse Gas Initiative (RGGI) is a market-based carbon dioxide (CO<sub>2</sub>) cap and trade program designed to reduce CO<sub>2</sub> emissions from fossil fuel-fired power plants. Note that this is a **Maryland State-only enforceable program**. Maryland's Healthy Air Act required Maryland to join RGGI by July 2007. Maryland joined RGGI by signing RGGI's multi-state Memorandum of Understanding (MOU) on April 20, 2007. The MOU required Maryland to adopt regulations by December 31, 2008, implementing the RGGI program. The Maryland CO<sub>2</sub> Budget Trading Program, Code of Maryland Regulations (COMAR) 26.09.01 to .03, became effective on July 17, 2008. COMAR 26.09.04 became effective as an emergency action on April 4, 2008, and as a permanent action on August 25, 2008.

The regulation requires the following:

- (a) Implement a cap and trade program for CO<sub>2</sub> emissions from fossil fuel-fired electric generating units located in Maryland having a capacity of at least 25 megawatts;
- (b) Distribute CO<sub>2</sub> allowances to stakeholders through auction, sale and/or allocation;
- (c) Require each affected source to have a CO<sub>2</sub> budget account representative and a compliance account;
- (d) Require each budget unit to hold in its source's compliance account at the end of each 3-year control period one allowance for each ton of CO<sub>2</sub> emissions emitted in that period;
- (e) Require sources to monitor emissions and submit quarterly and annual emission reports;

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- (f) Establish set-aside accounts for voluntary renewable purchase, limited industrial generator exemptions, and long-term contract generators;
- (g) Establish a consumer benefit or strategic energy purpose fund to support energy efficiency, directly mitigate electricity ratepayer impacts, promote renewable or non-carbon emitting energy technologies, stimulate or reward investment in the development of innovative carbon emissions abatement technologies with significant carbon reduction potential, and fund administration of the program; and
- (h) Establish procedures to evaluate and award allowances to persons who undertake offset projects that will reduce CO<sub>2</sub> emissions.
- (i) Require affected sources to submit an application for a CO<sub>2</sub> Budget Permit.

A renewed CO<sub>2</sub> Budget Permit is being issued in conjunction with the Part 70 permit as Attachment 1.

### **MERCURY AND AIR TOXICS (MATS) RULE**

The US EPA finalized on February 16, 2012, the National Emissions Standards for Hazardous Air Pollutants from coal and oil-fired Electric Utility Steam Generating Units (EGUs) codified under 40 CFR Part 63, Subpart UUUUU, also known as the Mercury and Air Toxics (MATS) rule. The MATS rule established national emission limitations and work practices for certain hazardous air pollutants emitted from coal and oil-fired steam generating units as well as requirements to demonstrate initial and continuous compliance with the emission limitations. Existing units are required to comply with the rule requirements by April 16, 2015 while new or reconstructed units were required to comply by April 16, 2012 or upon start-up.

Brandywine is not subject to this subpart. Although Brandywine Power Facility uses ULSD fuel as backup fuel, it does not meet the definition of oil-fired electric utility steam generating unit. Oil-fired electric utility steam generating unit means an electric utility steam generating unit meeting the definition of “fossil fuel-fired” that is not a coal-fired electric utility steam generating unit and that burns oil for more than 10.0 percent of the average annual heat input during any 3 consecutive calendar years or for more than 15.0 percent of the annual heat input during any one calendar year.

### **Overview of the Part 70 Permit**

Section I of the Part 70 Permit contains a brief description of the facility and an inventory list of the emissions units for which applicable requirements are identified in Section IV of the permit.

Section II of the Part 70 Permit contains the general requirements that relate to administrative permit actions. This section includes the procedures for renewing, amending, reopening, and transferring permits, the relationship to permits to construct and approvals, and the general duty to provide information and to comply with all applicable requirements.

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Section III of the Part 70 Permit contains the general requirements for testing, record keeping and reporting; and requirements that affect the facility as a whole, such as open burning, air pollution episodes, particulate matter from construction and demolition activities, asbestos provisions, ozone depleting substance provisions, general conformity, and acid rain permit. This section includes the requirement to report excess emissions and deviations, to submit an annual emissions certification report and an annual compliance certification report, and results of sampling and testing.

Section IV of the Part 70 Permit identifies the emissions standards, emissions limitations, operational limitations, and work practices applicable to each emissions unit located at the facility. For each standard, limitation, and work practice, the permit identifies the basis upon which the Permittee will demonstrate compliance. The basis will include testing, monitoring, record keeping, and reporting requirements. The demonstration may include one or more of these methods.

Section V of the Part 70 Permit contains a list of insignificant activities. These activities emit very small quantities of regulated air pollutants and do not require a permit to construct or registration with the Department. For insignificant activities that are subject to a requirement under the Clean Air Act, the requirement is listed under the activity.

Section VI of the Part 70 Permit contains State-only enforceable requirements. Section VI identifies requirements that are not based on the Clean Air Act, but solely on Maryland air pollution regulations. These requirements generally relate to the prevention of nuisances and implementation of Maryland's Air Toxics Program.

**Regulatory Review/Technical Review/Compliance Methodology**

**Emissions Unit EU-1 and EU-2**

EU-1 and EU-2: Each of these units operates on the average a total of 185 days or 4440 hours per year during which the units combust natural gas or liquefied natural gas. The average annual hourly operation of both CTs on fuel oil is less than 31 hours per year.

**Applicable Requirements**

**Control of Visible Emissions**

**A. COMAR 26.11.09.05A (2) - Visible Emissions.**

“In Areas III and IV, a person may not cause or permit the discharge of emissions from any fuel burning equipment, other than water in an uncombined form, which is visible to human observers.”

Exceptions. “Section A (1) and (2) do not apply to emissions during load changing, soot blowing, startup, or occasional cleaning of control equipment if:

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- (a) The visible emissions are not greater than 40 percent opacity; and
  - (b) The visible emissions do not occur for more than 6 consecutive minutes in any sixty-minute period.”
- 

**Compliance Demonstration**

The Permittee will comply with the visible emissions requirements by properly operating and maintaining the combustion turbines guided by the Permittee’s operations manual and preventive maintenance plan designed for the turbines. The Permittee shall verify no visible emissions when burning ULSD fuel oil. An observer shall perform at least one EPA Reference Method 9 observation of stack emissions for a 6-minute period for each 168 hours that each of the combustion turbines burns fuel oil. If a turbine operates on fuel oil for less than 168 hours in a year, the observation requirement is waived for that calendar year.

In the event of observation of visible emissions, the Permittee shall perform the following:

- (a) Inspect the combustion turbine operations;
- (b) Perform all necessary adjustments and/or repairs to the turbines within 48 hours so that visible emissions are eliminated;
- (c) Document in writing the results of the inspections, adjustments and/or repairs to the turbines; and
- (d) If the required adjustments and/or repairs have not eliminated the visible emissions within the stipulated 48 hours, perform a Method 9 observation once daily for 18 minutes until corrective action has eliminated the visible emissions.

The Permittee shall maintain the results of visible emissions observations and maintenance performed which relates to combustion performance for at least 5 years and made available to the Department upon request. The Permittee shall also report incidents of visible emissions in accordance with Condition 4 of Section III “Report of Excess Emissions and Deviation [References: COMAR 26.11.03.06C].

**Rationale/Discussion:**

Visible emissions when burning natural gas will only occur during periods of improper combustion, which would not be allowed to continue due to safety considerations. Visible emissions from the combustion of fuel oil are possible but unlikely with normal operation and maintenance.

The facility periodically burns fuel oil in the CTs to ascertain the reliability and availability of the combustion turbines when burning fuel oil in case there is natural gas curtailment. These curtailment periods are not preplanned and may occur for short periods and at times when visible emission observations are not feasible due to constraints of time of day or weather conditions. The requirement to perform an observation once every 168 hours (one week) of fuel oil combustion per combustion turbine unit will provide sufficient time for the Permittee to have the observation completed. Whenever visible emissions are observed, the Permittee is required

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to report the incident in accordance with Permit Condition 4 of Section III "Report of Excess Emissions and Deviation". Condition 4 requires a semi-annual monitoring report of deviations (excess emissions).

**Compliance Status**

The Department conducted a full compliance inspection of the facility on April 08, 2019. Inspection of the records indicated that the latest Method 9 Observation was performed on August 18, 2018, and no visible emissions were observed during the test. Visible emissions observations conducted in prior years also showed no visible emissions.

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**B. Control of Sulfur Dioxide and Sulfuric Acid Mist Emissions**

**B1. CPCN No. 9341, Air Quality Section, Conditions No. 8,** which limits the sulfur content in ULSD fuel oil to 0.0015 wt %.

**B2. CPCN No. 9341, Air Quality Section, Conditions No. 5,** which limits sulfur dioxide emissions from each combustion turbine to the limits shown below, as hourly emissions expressed in pounds per hour, except during periods of start-up, shutdown, malfunction, and Black Start Events:

	Natural Gas	LNG	ULSD fuel oil
Sulfur Oxides (as SO <sub>2</sub> )	29	29	54

**B3. CPCN Case No. 9341, Air Quality Section, Condition No. 5,** which limits sulfuric acid mist from each combustion turbine to the limits shown below, as hourly emissions expressed in pounds per hour, except during periods of start-up, shut-down, malfunction and Black Start Events:

	Natural Gas	LNG	ULSD Fuel Oil
Sulfuric Acid Mist	3	3	6

**NSPS Limitation**

**B4. 40 CFR 60.333 - NSPS Subpart GG** which limits sulfur content of any fuel burned in a gas turbine to 0.8 wt %.

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**B5. Phase II Acid Rain Requirement**

The Permittee shall comply with the provisions and all applicable requirements of the Phase II Acid Rain program. See Appendix A in the permit for the renewal Acid Rain Permit.

**B6. Cross-State Air Pollution Rule**

**TR SO<sub>2</sub> Group 1 Trading Program 40 CFR Part 97 Subpart CCCCC**

The Permittee shall comply with the provisions and requirements of §97.601 through §97.635

**Note: §97.606(c) SO<sub>2</sub> emissions requirements.** For TR SO<sub>2</sub> Group 1 emissions limitation: As of the allowance transfer deadline for a control period in a given year, the owners and operators of each TR SO<sub>2</sub> Group 1 source and each TR SO<sub>2</sub> Group 1 unit at the source shall hold, in the source's compliance account, TR SO<sub>2</sub> Group 1 allowances available for deduction for such control period under §97.624(a) in an amount not less than the tons of total SO<sub>2</sub> emissions for such control period from all TR SO<sub>2</sub> Group 1 units at the source.

Allowance transfer deadline means, for a control period in a given year, midnight of March 1 (if it is a business day), or midnight of the first business day thereafter (if March 1 is not a business day), immediately after such control period and is the deadline by which a TR SO<sub>2</sub> Group 1 allowance transfer must be submitted for recordation in a TR SO<sub>2</sub> Group 1 source's compliance account in order to be available for use in complying with the source's TR SO<sub>2</sub> Group 1 emissions limitation for such control period in accordance with §§97.606 and 97.624.

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*Compliance demonstrations for SO<sub>2</sub> and Sulfuric Acid Mist Emissions*

*B1, B2 and B3 - CPCN Compliance Demonstration*

Testing and Monitoring for CPCN

The Permittee shall perform QA/QC procedures for the SO<sub>2</sub> monitoring system in accordance with 40 CFR Part 75 Appendix D. [Reference: CPCN No. 9341, Condition #s 5 and 8, NSPS 40 CFR 60.334(h), and Acid Rain 40 CFR Part 75.21]. The Permittee shall comply with the CPCN requirements by performing sampling and analysis of the "as fired" ULSD fuel oil to determine the percentage of sulfur by weight in the ULSD fuel oil as prescribed in 40 CFR 75 Appendix D. [Reference: CPCN No. 9341, Condition #s 5 and 8, Air Quality Section].

Recordkeeping requirement for CPCN

The Permittee shall maintain all records including the fuel analyses for 2 years and shall make the record available to the Department upon request [References: CPCN No 9341 Condition



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14]. **Note:** Part 70 permits require records to be maintained for 5 years rather than 2 years as referenced in the CPCN condition.

**Reporting requirement for CPCN**

The Permittee shall submit quarterly reports, in the format approved by the Department, on the sulfur content of the ULSD fuel oil storage tank after ULSD fuel oil delivery; consistent with methods specified in 40 CFR 75, Appendix D, Section 2.2. The quarterly report shall be submitted within 45 days of the end of each calendar quarter [**Reference: CPCN No. 9341, Condition No. 14, Air Quality Section**]. **Note:** For any calendar quarter during which no delivery of ULSD fuel oil is received, the quarterly report shall state that no ULSD fuel oil was received during the quarter.

**Rationale/Discussion:**

The CPCN pounds per hour limits were established based on the sulfur in fuel limitation and the design of the turbines. Brandywine uses the alternative 40 CFR Part 75 Appendix D procedures for monitoring sulfur dioxide. Heat input is monitored using 40 CFR Part 75 Appendix F. Fuel flow rates for both natural gas and ULSD fuel oil are measured using fuel flow meters meeting the accuracy requirements of 40 CFR 75 Appendix D. The performance tests performed in 1996 reported sulfur oxide emissions level well below the permitted limits for both natural gas and fuel oil. For Unit 1 when burning natural gas, the average of three test runs for sulfur oxide was 20 lbs/hr and sulfuric acid mist was 1.9 lbs/hr. When burning No. 2 fuel oil, the average for sulfur oxide was 32 lbs/hr. and the average for sulfuric acid mist was 4.3 lbs/hr. For Unit 2 when burning natural gas, the average of three test runs for sulfur oxide was 20 lbs/hr and sulfuric acid mist was 2.7 lbs/hr. When burning No. 2 fuel oil, the average for sulfur oxide was 33 lbs/hr. and the average for sulfuric acid mist was 3.3 lbs/hr. Compliance with the sulfur in fuel limit will ensure compliance with the pounds per hour limits.

**Compliance Status**

The Permittee complies with the requirements of 40 CFR Part 75 Appendix D with respect to sampling and analysis of the “as fired” fuel oil to determine the percentage of sulfur by weight in the fuel oil. The Permittee conducts analyses of the sulfur content of the distillate fuel oil combusted in the turbines and performs QA/QC on the fuel flow meters. There have been no recent fuel deliveries, but a fuel analysis conducted on a shipment by Washington Gas on 1/12/2018 indicated a Sulfur content of 7.3 ppm (0.00073 percent by weight). The Permittee also complies with the recording and reporting requirements. The Permittee has never violated the SO<sub>2</sub> limitations.

**B 4. NSPS - Subpart GG compliance demonstration**

**Monitoring requirement for NSPS Subpart GG**

**Natural gas**

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Notwithstanding the provisions of paragraph (h) (1) of this section, the Permittee may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in §60.331(u), regardless of whether an existing custom schedule approved by the administrator for subpart GG requires such monitoring. The owner or operator shall use one of the following sources of information to make the required demonstration

- a. The gas quality characteristics in a current valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains /100 scf or less: or
- b. Representative fuel sampling data, which show that the sulfur content of the gaseous fuel does not exceed 20.0 grains/100 scf. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to Part 75 is required. **[Reference: 40 CFR 60.334(h)(3)(i) and (ii)].**

**ULSD Fuel Oil**

The frequency of determining the sulfur (and nitrogen) content of the ULSD fuel oil is as follows:

Use one of the total sampling options and associated sampling frequency described in sections 2.2.3, 2.2.4.1, 2.2.4.2, and 2.2.2.4.3 of appendix D to part 75 of this chapter (i.e., flow proportional sampling, daily sampling, sampling from the unit's storage tank after each addition of the fuel to the tank, or sampling each delivery prior to combining it with ULSD fuel oil already in the intended storage tank **[Reference: 40 CFR 60.334(i)(1)]**.

**Recordkeeping requirement for NSPS Subpart GG**

"An owner or operator who is subject to the provisions of this part shall maintain a record of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection." **[Reference: 40 CFR 60.7(f)]**.

**Reporting Requirement for NSPS Subpart GG**

For each affected unit required to continuously monitor parameters or emissions or to periodically determine the sulfur content or fuel nitrogen content under this subpart, the owner or operator shall submit reports of excess emissions and monitor downtime, in accordance with section 60.7(c). Excess emissions shall be reported for all periods of unit operation, including startup, shutdown, and malfunction. For the purpose of reports required under section 60.7(c), periods of excess emissions and monitor downtime that shall be reported are defined as follows: The Permittee who is required to monitor the sulfur content of the fuel under paragraph (h) of this section:

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(i) For samples of gaseous fuel and for ULSD fuel oil samples obtained using daily sampling, flow proportional sampling or sampling from unit's storage tank, an excess emission occurs when each unit operating hour included in the period beginning on the date and hour of any sample for which the sulfur content of the fuel being fired in the gas turbines exceeds 0.8 weight percent and ending on a date and hour that a subsequent sample is taken that demonstrates compliance with the sulfur limit.

(ii) If the option to sample each delivery of fuel oil has been selected, the Permittee, owner or operator shall immediately switch to one of the other oil sampling options (i.e., daily sampling, flow proportional sampling, or sampling from the unit's storage tank from) if the sulfur content of a delivery exceeds 0.8 weight percent. The Permittee shall continue to use one of the other sampling options until all of the oil from the delivery has been combusted and shall evaluate excess emissions according to paragraph (j)(2)(i) of this section. When all of the fuel from the delivery has been burned, the owner or operator may resume using the as delivered sampling option.

(iii) A period of monitor downtime begins when a required sample is not taken by its due date. A period of monitor's downtime also begins on the date and hour of a required sample, if invalid results are obtained. The period of monitor downtime shall include only unit operating hours and ends on the date and hour of the next valid sample. [Reference: 40 CFR 60.334(j)(2)(i)(ii)(iii)].

All reports required under §60.7(c) shall be postmarked by the 30th day following the end of each calendar quarter [Reference: 40 CFR 60.334(j)(5)].

Compliance Status

The gaseous fuel meets the definition of natural gas. Analysis conducted by Washington Gas showed that the total sulfur content to be 1.53 ppm or 0.096 gr/scf. Each fuel-oil delivery is analyzed and kept on site. The fuel-oil is typically in the range of 0.039 percent by weight %. The required use of ULSD fuel will further restrict the sulfur in fuel content to a maximum of 0.0015 percent by weight. Consequently, the CPCN limit is significantly more stringent than the current NSPS limit. Furthermore, there has never been a violation of the NSPS sulfur in fuel limit.

Phase II SO<sub>2</sub> Acid Rain Requirements

B5. A renewal Phase II Acid Rain Permit is being reissued in conjunction with the issuance of this Part 70 Permit. The Phase II Acid Rain Permit requires the Permittee to limit the actual emissions of sulfur dioxide to the number of allowances that the Permittee holds in its account with the Environmental Protection Agency's Clean Air Markets Program at the end of each calendar year. An allowance is one ton of sulfur dioxide emissions. The Permittee is required to purchase allowances to cover all the actual emissions in each calendar year.

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The Permittee shall comply with the provisions and all applicable requirements of the Phase II Acid Rain Permit program. See Appendix A for the Phase II Acid Rain Permit.

Information about emissions and compliance status can be viewed on EPA's Clean Markets Website, <http://www.epa.gov/airmarkets>

Cross-State Air Pollution Rule

- B6. The Permittee shall comply with the monitoring requirements found in §97.606, §97.630, §97.631, §97.632, and §97.633, the recordkeeping requirements found in §97.606, §97.630, and §97.634, and the reporting requirements; and the reporting requirements found in §97.606, §97.630, §97.633 and §97.634.

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C. Control of Nitrogen Oxides Emissions

- C1. **CPCN No. 9341, Air Quality Section, Condition No. 4**, which limits nitrogen oxides (NO<sub>x</sub>) emissions for each turbine, except during periods of start-up, shutdown, and malfunction, and Black Start Events when burning natural gas, ULSD fuel oil and LNG as follows:

- (a) Natural gas: the outlet concentration of NO<sub>x</sub> shall not exceed 9 parts per million by volume on a dry basis (ppmvd) at 15 percent excess oxygen on an hourly basis.
- (b) LNG: the outlet concentration of NO<sub>x</sub> shall not exceed 10 ppmvd at 15 percent excess oxygen on an hourly basis.
- (c) ULSD fuel oil: the outlet concentration of NO<sub>x</sub> shall not exceed 54 ppmvd at 15 percent excess oxygen on an hourly basis.

- C2. **CPCN Case No. 9341, Air Quality Section, Condition No. 5**  
Each combustion turbine, except during start-up period, shutdown, malfunction, and Black Start Events shall be limited to no more than the following hourly emissions expressed in units of pounds per hour:

	Natural Gas	LNG	ULSD fuel oil
Nitrogen Oxides (as NO <sub>2</sub> )	35	39	239

- C3. **CPCN Case No. 9341, Air Quality Section, Condition No. 6**  
Annual facility-wide NO<sub>x</sub> emissions shall be limited to no more than 437 tons per year (as NO<sub>2</sub>), excluding emissions during periods of start-up, shutdown, malfunction; or PJM system emergency or Black Start Events as defined in Condition 11 of the CPCN; Under no circumstance shall facility-wide NO<sub>x</sub> emissions exceed 518 tons per year.

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**NSPS LIMITATION**

- C4. **40 CFR 60.332 - NSPS Subpart GG**, which limits NO<sub>x</sub> emissions for each turbine when burning natural gas, ULSD fuel oil and LNG as derived by the following formula:

$$\text{STD} = 0.0075 (14.4/Y) + F$$

Where:

STD = Allowable NO<sub>x</sub> emissions (percent by volume at 15 percent oxygen and on dry basis).

Y = Manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour (kj/wh) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kj/wh.

F = NO<sub>x</sub> emissions allowance for fuel bound nitrogen as defined in paragraph (a) (4) of 40 CFR 60.332.

The value of Y (for the combustion turbines) used with the above formula is 11.160 kj/kwh while the weight percent of the fuel bound nitrogen used in deriving the value of F for: natural gas is 0.21 percent; LNG is 0.21 percent; and ULSD fuel oil is 0.021 percent.

NSPS NO<sub>x</sub> emissions limit for each turbine using the respective fuels is as follows:

- (a) Nat gas: the outlet concentration of NO<sub>x</sub> shall not exceed 144 parts per million by volume on a dry basis (ppmvd) at 15 percent excess oxygen on an hourly basis.
- (b) LNG: the outlet concentration of NO<sub>x</sub> shall not exceed 144 parts per million by volume on a dry basis (ppmvd) at 15 percent excess oxygen on an hourly basis.
- (c) ULSD fuel oil: the outlet concentration of NO<sub>x</sub> shall not exceed 101 parts per million by volume on a dry basis (ppmvd) at 15 percent excess oxygen on an hourly basis.

C5. **NO<sub>x</sub> RACT Requirement**

**COMAR 26.11.09.08G (2)** applies to combustion turbines with a capacity factor greater than 15 percent and requires the Permittee to meet an hourly average NO<sub>x</sub> emission rate of not more than 42 ppm when burning gas or 65 ppm when burning fuel oil (dry volume at 15 percent oxygen) or meet applicable Prevention of Significant Deterioration limits, whichever is more restrictive.

C6. **Cross-State Air Pollution Rule**

**TR NO<sub>x</sub> Annual Trading Program 40 CFR Part 97 Subpart AAAAA**

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The Permittee shall comply with the provisions and requirements of §97.401 through §97.435

**TR NOx Ozone Season Trading Program 40 CFR Part 97 Subpart BBBBB**

The Permittee shall comply with the provisions and requirements of §97.501 through §97.535

**Note: §97.406(c) NOx emissions requirements.** For TR NOx Annual emissions limitation: As of the allowance transfer deadline for a control period in a given year, the owners and operators of each TR NOx Annual source and each TR NOx Annual unit at the source shall hold, in the source's compliance account, TR NOx Annual allowances available for deduction for such control period under §97.424(a) in an amount not less than the tons of total NOx emissions for such control period from all TR NOx Annual units at the source.

Allowance transfer deadline means, for a control period in a given year, midnight of March 1 (if it is a business day), or midnight of the first business day thereafter (if March 1 is not a business day), immediately after such control period and is the deadline by which a TR NOx Annual allowance transfer must be submitted for recordation in a TR NOx Annual source's compliance account in order to be available for use in complying with the source's TR NOx Annual emissions limitation for such control period in accordance with §§97.406 and 97.424.

**§97.506(c) NOx emissions requirements.** For TR NOx Ozone Season emissions limitation: As of the allowance transfer deadline for a control period in a given year, the owners and operators of each TR NOx Ozone Season source and each TR NOx Ozone Season unit at the source shall hold, in the source's compliance account, TR NOx Ozone Season allowances available for deduction for such control period under §97.524(a) in an amount not less than the tons of total NOx emissions for such control period from all TR NOx Ozone Season units at the source.

Allowance transfer deadline means, for a control period in a given year, midnight of December 1 (if it is a business day), or midnight of the first business day thereafter (if December 1 is not a business day), immediately after such control period and is the deadline by which a TR NOx Ozone Season allowance transfer must be submitted for recordation in a TR NOx Ozone Season source's compliance account in order to be available for use in complying with the source's TR NOx Ozone Season emissions limitation for such control period in accordance with §§97.506 and 97.524.

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C1., C2., and C3. - PSD (CPCN) Compliance Demonstration

Testing and Monitoring for PSD (CPCN)

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The Permittee shall operate a CEMS for NO<sub>x</sub> and oxygen (O<sub>2</sub>) in accordance with COMAR 26.11.01.10 and 11. The Permittee shall use the data collected from the NO<sub>x</sub> CEMS to demonstrate compliance with the NO<sub>x</sub> emissions limitations of the CPCN.

The Permittee shall develop, implement, and maintain for all CEMS a Quality Assurance (QA) Plan which satisfactorily documents operations pursuant to 40 CFR 60, Appendix F.

**[Reference: CPCN No. 9341, Condition No. 13, Air Quality Section].** Note that because Brandywine is an Acid Rain Source, the QA/QC procedures for the NO<sub>x</sub> CEMS are conducted in accordance with 40 CFR Part 75, Appendix D rather than 40 CFR Part 60 Appendix F.

**Recordkeeping for PSD (CPCN)**

The Permittee shall maintain all records necessary to comply with the NO<sub>x</sub> data reporting requirements of CPCN No. 9341, Condition 14. **[Reference: COMAR 26.11.03.06C]**

**Reporting for PSD (CPCN)**

The Permittee shall submit a quarterly summary report to the Department not later than 30 days following each calendar quarter. For details of the reporting requirement, see the reporting requirements for Operational Limitation-Condition G.

**Compliance Status**

The Permittee operates and maintains a CEMS for NO<sub>x</sub> and oxygen (O<sub>2</sub>) in accordance with COMAR 26.11.01.10 and 11 and has in place, for all CEMS, a Quality Assurance (QA) Plan, which satisfactorily documents operations pursuant to 40 CFR 60, Appendix B as well as 40 CFR Part 75, Appendix D. The Permittee also maintains records of NO<sub>x</sub> and O<sub>2</sub> and submits quarterly summaries of NO<sub>x</sub> and O<sub>2</sub> CEMS data to the Department in accordance with Condition No. 14 of the CPCN No. 9341.

The most recent quarterly summary of NO<sub>x</sub> CEMS data that is due 45 days following the end of each calendar quarter demonstrating compliance with all applicable PSD NO<sub>x</sub> emissions limits was submitted to the Department in April 2024 for the first quarter of 2024.

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**C4. - NSPS Subpart GG - Compliance Demonstration**

Monitoring requirements for NSPS Subpart GG:

**40 CFR 60.334 (a)**

Except as provided in paragraph (b) of this section, the Permittee who owns a stationary gas turbine subject to the provisions of this subpart and using water or steam injection to control NO<sub>x</sub> emissions shall install, calibrate, maintain, and operate a continuous monitoring system to

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monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine.

**40 CFR 60.334 (b)**

The Permittee who owns any stationary gas turbine that commenced construction, reconstruction, or modification after October 3, 1977, but before July 8, 2004, and which uses water or steam injection to control NO<sub>x</sub> emissions may, as an alternative to operating the continuous monitoring system described in paragraph (a) of this section, install, certify, maintain, operate, and quality-assure a continuous emission monitoring system (CEMS) consisting of NO<sub>x</sub> and O<sub>2</sub> monitors. If the option to use a CEMS is chosen, the CEMS shall be installed, certified, maintained and operated as follows:

Each CEMS must be installed and certified according to PS 2 and 3 (for diluents) of 40 CFR part 60, appendix B, except that the 7-day calibration drift is based on unit operating days, not calendar days. Appendix F, Procedure 1 is not required. The relative accuracy test audit (RATA) of the NO<sub>x</sub> and diluent monitors may be performed individually or on a combined basis, *i.e.*, the relative accuracy tests of the CEMS may be performed either:

- (i) On a ppm basis (for NO<sub>x</sub>) and a percent O<sub>2</sub> basis for oxygen; or
- (ii) On a ppm at 15 percent O<sub>2</sub> basis; or
- (iii) On a ppm basis (for NO<sub>x</sub>) and a percent CO<sub>2</sub> basis (for a CO<sub>2</sub> monitor that uses the procedures in Method 20 to correct the NO<sub>x</sub> data to 15 percent O<sub>2</sub>

Section 40 CFR 60.334 (a) and 40 CFR 60.334 (b) have direct relevance to Brandywine since it was constructed within the time stated in 40 CFR 60.334 (b) and uses water injection to control NO<sub>x</sub> emissions when burning ULSD fuel oil. Therefore, Brandywine has selected the option of using the installed CEMS for monitoring NO<sub>x</sub> emissions rather than installing, maintaining, and operating a system to measure the ratio of water or steam to fuel being fired in the turbine.

Recordkeeping requirements for NSPS Subpart GG

**40 CFR 60.7 (f)**

The Permittee who is subject to the provisions of this part shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection.”

The Permittee shall submit quarterly summaries of valid CEMS data for NO<sub>x</sub> and O<sub>2</sub> concentrations. The quarterly reports required above shall be in the format approved by the



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Department. Valid CEMS data are required for a minimum of 90 percent of the plant operating hours in each quarter.

The Permittee shall submit a quarterly summary report to the Department not later than 45 days following each calendar quarter. The report shall be in a format approved by the Department, and shall include the following:

- (1) The cause, periods, and magnitude of all emissions, which exceed the applicable emission standards;
- (2) The source downtime including the time and date of the beginning and end of each downtime period and whether the source downtime was planned or unplanned;
- (3) The periods and cause of all CEM downtime including records of any repairs, adjustments, or maintenance that may affect the validity of emission data;
- (4) Quarterly totals of excess emissions, installation downtime, and CEM downtime during the calendar quarter;
- (5) Quarterly quality assurance activities; and
- (6) Daily calibration activities that include reference values, actual values, absolute or percent of span differences, and drift status; and
- (7) Other information required by the Department that is determined to be necessary to evaluate the data, to ensure that compliance is achieved, or to determine the applicability of this regulation.” [Reference: COMAR 26.11.09.08K(1) and COMAR 26.11.01.11E(2)(C).

Reporting requirements for NSPS Subpart GG

**40 CFR 60.334(j)**

For each affected unit required to continuously monitor parameters or emissions or to periodically determine the (sulfur content) or fuel nitrogen content under this subpart, the Permittee shall submit reports of excess emissions and monitor downtime, in accordance with section 60.7(c). Excess emissions shall be reported for all periods of unit operation, including startup, shutdown and malfunction. For the purpose of reports required under section 60.7(c), periods of excess emissions and monitor downtime that shall be reported are defined as follows:

For turbines using NO<sub>x</sub> and diluent CEMS:

- (1) An hour of excess emissions shall be any unit operating hour in which the 4-hour rolling average NO<sub>x</sub> concentration exceeds the applicable emission limit in §60.332(a)(1) or (2). For the purposes of this subpart, a “4-hour rolling average NO<sub>x</sub> concentration” is the arithmetic average of the average NO<sub>x</sub> concentration measured by the CEMS for a given hour (corrected to 15 percent O<sub>2</sub> and, if required under §60.335(b) (1), to ISO standard conditions) and the three-unit operating hour average NO<sub>x</sub> concentrations immediately preceding that unit operating hour.

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- (2) A period of monitor downtime shall be any unit operating hour in which sufficient data are not obtained to validate the hour, for either NO<sub>x</sub> concentration or diluent (or both).
- (3) Each report shall include the ambient conditions (temperature, pressure, and humidity) at the time of the excess emission period and (if the owner or operator has claimed an emission allowance for fuel bound nitrogen) the nitrogen content of the fuel during the period of excess emissions. You do not have to report ambient conditions if you opt to use the worst-case ISO correction factor as specified in §60.334(b) (3) (ii), or if you are not using the ISO correction equation under the provisions of §60.335(b) (1) [**Reference: 40 CFR 60.334(j) (1) (iii)**].

**40 CFR 60. 334(j) (5)**

All reports required under §60.7(c) shall be postmarked by the 30th day following the end of each calendar quarter [**Reference: 40 CFR 60.334(j) (5)**].

Compliance Status:

The Permittee complies with all the NSPS monitoring, recordkeeping and reporting requirements. The most recent quarterly summary of NO<sub>x</sub> CEMs data demonstrating compliance with all applicable NO<sub>x</sub> emissions limits was submitted to the Department in October 2023.

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C5. - NO<sub>x</sub> RACT Compliance Demonstration.

Testing and Monitoring Requirements for NO<sub>x</sub> RACT

The Permittee shall use the data collected from the NO<sub>x</sub> CEM to demonstrate compliance with the RACT limitation [**Reference: COMAR 26.11.09.08B(2)(a)(i)**]. The Permittee shall perform QA/QC procedures for the NO<sub>x</sub> monitoring system in accordance with 40 CFR Part 75 Appendix D. [**Reference: COMAR 26.11.09.08B(2)(c)**]

Recordkeeping requirement for NO<sub>x</sub> RACT

The Permittee shall maintain annual fuel use records and records that are necessary to submit with the quarterly emissions report [**References: COMAR 26.11.09.08K(3) and COMAR 26.11.03.06C**].

Reporting Requirement for NO<sub>x</sub> RACT

The Permittee shall submit a quarterly summary report to the Department not later than 30 days following each calendar quarter. The report shall be in a format approved by the Department, and shall include the following:

- (1) The cause, time periods, and magnitude of all emissions which exceed the applicable emission standards;

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- (2) The source downtime including the time and date of the beginning and end of each downtime period and whether the source downtime was planned or unplanned;
- (3) The time periods and cause of all CEM downtime including records of any repairs, adjustments, or maintenance that may affect the validity of emission data;
- (4) Quarterly totals of excess emissions, installation downtime, and CEM downtime during the calendar quarter;
- (5) Quarterly quality assurance activities; and
- (6) Daily calibration activities that include reference values, actual values, absolute or percent of span differences, and drift status; and
- (7) Other information required by the Department that is determined to be necessary to evaluate the data, to ensure that compliance is achieved, or to determine the applicability of this regulation.” **[Reference: COMAR 26.11.09.08K(1) and COMAR 26.11.01.11E(2)(C).**

Note: The Permittee may submit one report that includes the all required information to satisfy both NOx RACT and CPCN quarterly reporting requirements (See Operational Limitation Reporting Condition G for CPCN). **[Reference: COMAR 26.11.03.06C]**

**Compliance Status:**

The Permittee complies with the NOx RACT monitoring, recordkeeping, and reporting requirements. The most recent quarterly summary of NOx CEMs data demonstrating compliance with all applicable NOx emissions limits was submitted to the Department in October 2023.

**C6. - Cross-State Air Pollution Rule**

The Permittee shall comply with:

The monitoring requirements found in §97.406, §97.430, §97.431, §97.432, and §97.433 for the NOx Annual Trading Program; and §97.506, §97.530, §97.531, §97.532, and §97.533 for the NOx Ozone Season Trading Program;

The recordkeeping requirements found in §97.406, §97.430, and §97.434 for the NOx Annual Trading Program and §97.506, §97.530, and §97.534 for the NOx Ozone Season Trading Program; and

The reporting requirements found in §97.406, §97.430, §97.433 and §97.434 for the NOx Annual Trading Program and §97.506, §97.530, §97.533, and §97.534 for the NOx Ozone Season Trading Program.

**C7 Acid Rain Program**

There are no standards or limits under the Acid Rain Program for NOx emissions. Only coal fired affected units have NOx limits in the Acid Rain Program. However, Brandywine is required to continuously monitor NOx emissions and report the emissions to the Clean Air Market Group. The NOx monitoring requirements are found in 40 CFR Part 75. Information

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about emissions can be viewed on EPA's Clean Air Markets Website, <http://www.epa.gov/airmarkets>

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Control of Carbon Monoxide Emissions

**D. CPCN No. 9341, Air Quality Section, Condition No. 5.**

Each combustion turbine, except during start-up period, shut-down, malfunction, and Black Start Events shall be limited to no more than the following hourly emissions expressed in units of pounds per hour:

	Natural Gas	LNG	ULSD Fuel Oil
Carbon Monoxide	59	59	71

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The CO limitation was based upon the vendor's design guarantees for the turbines.

The performance tests performed in 1996 reported carbon monoxide emissions levels below the permitted limits for both natural gas and fuel oil. For natural gas, the average of three test runs was 20 lbs/hr. for Unit 1 and 15 lbs/hr. for Unit 2. For No. 2 fuel oil, the average of three test runs was 0.2 lbs/hr. for Unit 1 and 0.2 lbs/hr. for Unit 2.

Compliance Demonstration Rationale/Discussion

The Permittee shall perform preventative maintenance on the turbines to keep them operating as designed, maintain records of the preventative maintenance, which relate to combustion performance and submit records of the preventative maintenance performed to the Department upon request [**Reference: COMAR 26.11.03.06C**].

Compliance Status

Stack tests confirm that normal operation of the turbines results in CO emissions that are significantly below the allowable limit. To maintain this level of performance, the Permittee performs preventative maintenance on the turbines through a computerized system, which properly maintains and ensures that the turbines operate as designed. The Permittee also maintains records of the preventative maintenance, which relates to combustion performance and submits the records to the Department upon request.

Control of Volatile Organic Compounds

**E. CPCN No. 9341, Air Quality Section, Condition No. 5.** Each combustion turbine, except during start-up period, shut-down, malfunction, and Black Start Events shall be limited to no more than the following hourly emissions expressed in units of pounds per hour:

Natural Gas	LNG	ULSD fuel Oil
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Volatile Organic Compounds	2	2	5
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These limitations were placed in the CPCN because the vendor provided a guarantee that the turbines are designed to achieve these VOC emission limitations.

The performance tests performed in 1996 reported volatile organic compound emissions levels well below the permitted limits for both natural gas and fuel oil. For natural gas, the average of three test runs was 0.8 lbs/hr. for Unit 1 and 0.7 lbs/hr. for Unit 2. For No. 2 fuel oil, the average of three test runs was 1.5 lbs/hr. for Unit 1 and 1.2 lbs/hr. for Unit 2.

*Compliance Demonstration/Rationale/Discussion:*

The Permittee shall perform preventative maintenance on the turbines to keep them operating as designed, maintain records of the preventative maintenance, which relate to combustion performance and submit records of the preventative maintenance performed to the Department upon request [**Reference: COMAR 26.11.03.06C**].

*Compliance Status*

Stack tests confirm that normal operation of the turbines results in VOC emissions that are significantly below the allowable limit. To maintain this level of performance, the Permittee performs preventative maintenance on the turbines through a computerized system, which properly maintains and ensures that the turbines operate as designed. The Permittee also maintains records of the preventative maintenance, which relates to combustion performance and submits the records to the Department upon request.

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Control of Particulate Matter Emissions

**F. CPCN No. 9341, Air Quality Section, Condition No. 5.**

Each combustion turbine, except during start-up period, shutdown, malfunction, and Black Start Events shall be limited to no more than the following hourly emissions expressed in units of pounds per hour:

	Natural Gas	LNG	ULSD fuel
PM <sub>10</sub>	7	7	15
Total Particulate	7	7	15

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The particulate limitation was based on the vendor's design guarantee for the turbines.

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The performance tests performed in 1996 reported particulate emissions levels (including PM10) well below the permitted limits for both natural gas and fuel oil. For natural gas, the average of three test runs was 1.97 lbs/hr. for Unit 1 and 2.66 lbs/hr. for Unit 2. For fuel oil, the average of three test runs was 5.55 lbs/hr. for Unit 1 and 4.41 lbs/hr. for Unit 2.

*Compliance Demonstration/ Rationale/Discussion:*

The Permittee shall perform preventative maintenance on the turbines to keep them operating as designed, maintain records of the preventative maintenance, which relate to combustion performance, and submit records of the preventative maintenance performed to the Department upon request [**Reference: COMAR 26.11.03.06C**].

*Compliance Status*

Stack tests confirm that normal operation of the turbines results in particulate matter emissions that are significantly below the allowable limit. To maintain this level of performance, the Permittee performs preventative maintenance on the turbines through a computerized system, which properly maintains and ensures that the turbines operate as designed. The Permittee also maintains records of the preventative maintenance, which relates to combustion performance and submits the records to the Department upon request.

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**Operational Limitations**

**G1. CPCN Case No. 9341, Air Quality Section, Condition No. 9**

The combustion turbines shall generate electricity using natural gas or LNG only except as otherwise provided for in these conditions:

- (a) When the fuel delivery to the turbines is interrupted or curtailed, the facility may burn ULSD fuel oil but shall be limited to 143 tons of NO<sub>x</sub> when burning ULSD fuel oil;
- (b) If the facility has reached its 143 tons limit and there is a PJM system emergency as defined in Condition No. 11 and natural gas is unavailable, the facility may burn ULSD fuel oil; and
- (c) Under no circumstances, however, may the facility burn ULSD fuel oil for more than 2,400 turbine hours.

For the purposes of this condition, a year is defined as November 1 through October 31. Natural gas/LNG service interruptions shall be verified by a letter each year from Brandywine's natural gas/LNG supplier identifying the dates on which service was restricted. Brandywine will ensure that the Department receives a copy of this letter within 60 days of the start of each New Year.

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**G2. CPCN Case No. 9341, Air Quality Section, Condition No. 11**

For the purposes of Conditions Nos. 6 and 9 of the CPCN, a PJM system emergency is operation during reserve shortages and refers to Maximum Generation Emergency, as defined in Section 2.0 of PJM Manual 35: Definitions and Acronyms, Revision 22 Effective date 2/28/2013.

**G3. CPCN Case No. 9341, Air Quality Section, Condition No. 7**

Except for periods of startup, shutdown periods and Black Start Events, each combustion turbine unit shall operate only when the unit, for natural gas or LNG firing, is in DLN premix mode, or when firing ULSD fuel oil, water injection is engaged.

Note that after the initiation of premix steady state while firing natural gas or LNG and upon initiation of water injection while firing ULSD fuel oil, an emissions monitoring stabilization period of up to 17 minutes is required to accommodate exhaust gas transit time from the exit of the combustion system to the CEMS.

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**Compliance Demonstration**

The Permittee shall maintain records of the hours that the turbines burn ULSD fuel oil and record periods, except for startups, shutdowns, and Black Start Events, when each combustion turbine generator operates without water injection engaged. [Reference: COMAR 26.11.03.06C].

The Permittee shall in addition, submit the quarterly reports within 45 days of the end of each calendar quarter, and shall include at least the following for each turbine (monthly summaries):

- (a) The total hours of operation;
- (b) The number of hours of operation burning ULSD fuel oil;
- (c) The total amount of ULSD fuel oil burned, in units of gallons/hour and MMBtu/hour during the quarter;
- (d) The number of hours of operation burning natural gas and LNG;
- (e) The total amount of natural gas and LNG burned, in units of pound per hour and MMBtu per hour during the quarter;
- (f) Times of start-up and shutdown, and Black Start Events;
- (g) The megawatts of electricity produced by each turbine on an hourly basis;
- (h) Maximum hourly and average hourly NO<sub>x</sub> emissions, in units of ppmvd at 15 percent oxygen and pounds per hour, and the cumulative annual NO<sub>x</sub> emissions;
- (i) Any emissions in excess of NO<sub>x</sub> concentrations specified in this permit, including the amount of the emissions, the date(s) on which the excess emissions occurred, the length of time over which the excess emissions occurred, the reason(s) why the excess emissions occurred, and the corrective action taken, if required, to ensure that excess emissions do not occur in the future; and
- (j) Any periods, except startup and shutdowns and Black Start Events, that the turbines operated for natural gas or LNG firing, and not in DLN premix mode or when firing ULSD fuel oil, and water injection is not engaged.

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The quarterly report as required above shall be in the format approved by the Department. Valid CEMS data are required for a minimum of 90 percent of the plant operating hours in each quarter [References: CPCN 9341, Conditions Nos. 13 and 14].

Compliance Status

The Permittee complies with the stated requirements and maintains records of the hours that the turbines burn (ULSD) fuel oil except for startups and shutdowns, when each combustion turbine generator operates and water injection is not engaged.

For calendar year, 2018 the two combustion turbines combined operated for a total of 381 hours of operation on fuel oil. For the same timeframe, the turbines operated a total of 11,996 hours on natural gas. The total hours of operation when burning No. 2 fuel oil are insignificant when compared to the maximum allowable 2400 hours per year for which No. 2 fuel oil may be burned. (Condition No. 9 of the CPCN #9341)

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Emissions Unit EU-3

Emission Unit EU-3 is one (1) Caterpillar diesel engine Model C175-20 rated at 4000 kW, burning ULSD fuel oil used for Black Start Events.

A. Control of Visible Emissions

A1. **COMAR 26.11.09.05E (2) Emissions During Idle Mode.** A person may not cause or permit the discharge of emissions from any engine, operating at idle, greater than 10 percent opacity.

A2. **COMAR 26.11.09.05E (3) Emissions During Operating Mode.** A person may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity.

A3. **COMAR 26.11.09.05E (4) Exceptions.**

(a) Section E(2) of this regulation does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system.

(b) Section E(2) of this regulation does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:

- (i) Engines that are idled continuously when not in service: 30 minutes;
- (ii) All other engines: 15 minutes.

(c) Section E(2) and (3) of this regulation do not apply while maintenance, repair, or testing is being performed by qualified mechanics



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**A4. NSPS §§60.4202(b)(2) and 60.4205(b) (§ 1039.105 What smoke opacity standards must my engines meet?)**

(a) The smoke opacity standards in this section apply to all engines subject to emission standards under this part, except for the following engines:

- (1) Single-cylinder engines.
- (2) Constant-speed engines.
- (3) Engines certified to a PM emission standard or FEL of 0.07 g/kW-hr or lower.

(b) Measure smoke opacity as specified in §1039.501(c). Smoke opacity from your engines may not exceed the following standards:

- (1) 20 percent during the acceleration mode.
- (2) 15 percent during the lugging mode.
- (3) 50 percent during the peaks in either the acceleration or lugging modes.

[69 FR 39213, June 29, 2004, as amended at 88 FR 4658, Jan. 24, 2023].

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**Compliance Demonstration**

(1) The Permittee shall:

- (a) Properly operate and maintain the engine; and
- (b) Maintain an operations manual and preventive maintenance plan. [Authority: COMAR 26.11.03.06C].

(2) The Permittee shall properly operate and maintain the engine in a manner to minimize visible emissions. [Authority: COMAR 26.11.03.06C] and shall operate and maintain the stationary CI internal combustion engine according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. [Authority: §60.4211(a)(1)].

**NOTE:** All records must be maintained for a period of 5 years. [Reference: COMAR 26.11.03.06.C (5) (g)].

The Permittee shall maintain records of the preventive maintenance that relates to combustion process performed on the engine on site for at least 5 years and make the records available to the Department upon request. The Permittee shall also retain the operations manual on site and make it available to the Department upon request [Authority: COMAR 26.11.03.06C].

The Permittee shall report incidents of visible emissions in accordance with Condition 4 of Section III "Report of Excess Emissions and Deviation. [Reference: COMAR 26.11.03.06C].

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The Department conducted a full compliance inspection of the facility on April 08, 2019. Inspection of the records indicated that the latest Method 9 Observation was performed on August 18, 2018, and no visible emissions were observed during the test. Visible emissions observations conducted in prior years also showed no visible emissions. The Permittee performs preventative maintenance on the engine and ensures that the engine operates as designed. The Permittee also maintains records of the preventative maintenance, which relates to combustion performance and submits the records to the Department upon request.

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B. Control of Sulfur Dioxide Emissions

- B1. **CPCN Case No. 9341, Air Quality Section, Condition No. 8**, which limits sulfur content in ULSD fuel oil to 0.0015 wt %.
- B2. **COMAR 26.11.09.07A(2)(b)** - Areas III and IV - Sulfur Content Limitations for Fuel.  
“A person may not burn, sell, or make available for sale any fuel with a sulfur content by weight in excess of or which otherwise exceeds 0.3 percent by weight.”
- B3. **§60.4207(b)** - owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted. Note: 40 CFR 80.510(b) requires 15 ppm sulfur in fuel limitation

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Compliance Demonstration

- (1) The Permittee shall perform sampling and analysis of the “as fired” sulfur content of the ULSD fuel oil to determine the percentage of sulfur by weight in the fuel oil. The sampling procedures shall follow the requirements of CPCN No. 9341, Condition No. 8 as prescribed in 40 CFR 75 Appendix D, Sec. 2.2. **[Reference: CPCN No. 9341, Condition No. 8, Air Quality Section]**.
- (2) The Permittee shall obtain fuel supplier’s certification, which includes the name of the oil supplier and statement from the fuel supplier that the distillate fuel oil complies with the limitation of 0.3% by weight of the sulfur content in the fuel oil. **[Authority: COMAR 26.11.03.06C]**.
- (3) The Permittee shall comply with requirements under 40 CFR 60 subpart IIII.

**Note:** The monitoring requirements for complying with the CPCN requirements shall be the basis for complying with both the COMAR and 40 CFR 60 subpart IIII requirements. **[Authority: COMAR 26.11.03.06C]**.

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The Permittee shall maintain records of fuel sampling and analysis for the “as fired” sulfur content of the ULSD fuel oil utilized in the engine for at least five years. **[Reference: CPCN No. 9341, Condition No. 14, Air Quality Section]**.

The Permittee shall maintain records of fuel suppliers’ certifications of the percent sulfur content in the fuel on site for at least five years and shall make the records available to the Department upon request. The fuel oil certification report must contain the type, quantities, and analyses of all fuels burned. **[Authority: COMAR 26.11.09.07C]**.

The Permittee shall submit, within 45 days of the end of each quarter, the result of the sulfur content of the fuel to the Department **[Reference: CPCN No. 9341, Air Quality Section, Condition No. 14]**.

The Permittee shall submit the fuel supplier certification or a copy of the sulfur in fuel analyses to the Department upon request. **[Authority: COMAR 26.11.09.07C]**.

**Note 1:** For any calendar quarter during which no delivery of fuel oil is received, the quarterly report shall state that no fuel was received during the quarter.

**Note 2:** Note: The Permittee may submit one report that includes the required information to satisfy RACT and CPCN quarterly reporting requirements (See Reporting Condition G for CPCN). **[Reference: COMAR 26.11.03.06C]**

**Compliance Status**

The Permittee performs sampling and analysis of the “as fired” sulfur content of the ULSD fuel oil to determine the percentage of sulfur by weight in the fuel oil. The sampling procedures follows the requirements of CPCN No. 9341, Condition No. 8 as prescribed in 40 CFR 75 Appendix D, Sec. 2.2. The Permittee obtains fuel supplier’s certification, which includes the name of the oil supplier and statement from the fuel supplier that the distillate fuel oil complies with the limitation of 0.3% by weight of the sulfur content in the fuel oil, maintains records of fuel sampling and analysis for the “as fired” sulfur content of the ULSD fuel oil utilized in the engine for at least five years and submits the fuel supplier certification or a copy of the sulfur in fuel analyses to the Department upon request.

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**C. Control of Carbon Monoxide**

**CPCN Case No. 9341, Air Quality Section, Condition No. 20 (a)ii, (NSPS**

**§§60.4202(b)(2) and 60.4205(b))**, which limits the emissions of CO from the engine to 3.5 grams per kilowatt hour (g/kW-hour ) or 2.6 grams per brake horsepower-hr )

**Compliance Demonstration**

The Permittee, owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b) .....must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) ... as applicable for the same model year and ... engine power.

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The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section [**Authority: §60.4211(c)**].

The Permittee shall perform preventative maintenance on the engine to maintain them in a condition such that it operates as designed [**Reference: COMAR 26.11.03.06C**]

The Permittee shall maintain records of the preventative maintenance which relate to combustion performance [**References: COMAR 26.11.03.06C**]. The Permittee shall submit records of the preventative maintenance performed, which relate to combustion performance to the Department upon request [**Reference: COMAR 26.11.03.06C**].

Compliance Status

The Permittee complies with the requirements of these regulations

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D. Control of Particulate Matter (PM)

**CPCN Case No. 9341, Air Quality Section, Condition No. 20 (a)iii, (NSPS §§60.4202(b)(2) and 60.4205(b)),** which limits the emissions of PM from the engine to 0.2 grams per kilowatt hour (g/kW-hour ) or 0.15 grams per brake horsepower-hr )

Compliance Demonstration

The Permittee, owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b) .....must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) ... as applicable for the same model year and ... engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section [**Authority: §60.4211(c)**].

The Permittee shall perform preventative maintenance on the engine to maintain them in a condition such that they operate as designed. [**Reference: COMAR 26.11.03.06C**].

The Permittee maintain records of the preventative maintenance which relate to combustion performance [**References: COMAR 26.11.03.06C**]. The Permittee shall submit records of the preventative maintenance performed, which relate to combustion performance to the Department upon request [**Reference: COMAR 26.11.03.06C**].

Compliance Status

The Permittee complies with the requirements of these regulations.

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**E. Control of Nitrogen Oxides**

**E1. COMAR 26.11.36.03 - Requirements for Stationary Engines.**

(a). "The owner or operator of an engine is subject to requirements under 40 CFR Part 63 Subpart ZZZZ, as applicable.

(b). The owner or operator of an engine is subject to requirements under 40 CFR Part 60 Subpart IIII. In May 2015, the United States Court of Appeals for the District of Columbia Circuit vacated paragraphs 40 CFR 60.4211(f)(2)(ii)-(iii) and 63.6640(f)(2)(ii)-(iii). Therefore, engines subject to this chapter do not have to comply with those provisions."

**Note:** Black Start Events are periods of emergencies.

**Compliance Demonstration**

See E2 below

**Compliance Status**

See E2 below.

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**E2. CPCN Case No. 9341, Air Quality Section, Condition No. 20 (a)i, (NSPS**

**§§60.4202(b)(2) and 60.4205(b)),** which limits the emissions for NO<sub>x</sub> in combination with non-methane hydrocarbons ("combined NO<sub>x</sub> and NMHC emissions") to 6.4 g/kW-hour, or 4.8 g/bhp-hr.

**Compliance Demonstration**

The Permittee, owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b) .....must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) ... as applicable for the same model year and ... engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section [**Authority: §60.4211(c)**].

§60.4211(a) - The Permittee, owner, and operator of a stationary CI ICE subject to the emissions standard of 40 CFR Part 60, Subpart IIII must do all of the following, except as permitted under paragraph (g) of this section:

- (1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions;
- (2) Change only those emission-related settings that are permitted by the manufacturer; and
- (3) Meet the requirements of 40 CFR Part 1068, as they apply to you

**Compliance Status**

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The Permittee complies with the requirements of these regulations

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**E3. NO<sub>x</sub> RACT Requirements**

**COMAR 26.11.09.08G** - Requirements for Fuel-Burning Equipment with a Capacity Factor of 15 percent or less.

- (1) A person who owns or operates fuel-burning equipment with a capacity factor (as defined in 40 CFR Part 72.2) of 15 percent or less shall:
  - (a) Provide certification of the capacity factor of the equipment to the Department in writing;
  - (b) For fuel-burning equipment that operates more than 500 hours during a calendar year, perform a combustion analysis and optimize combustion at least once annually;
  - (c) Maintain the results of the combustion analysis and any stack tests at the site for at least 2 years and make these results available to the Department and the EPA upon request;
  - (d) Require each operator of an installation, except combustion turbines, to attend operator training programs at least once every 3 years, on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors; and
  - (e) Maintain a record of training program attendance for each operator at the site, and make these records available to the Department upon request."

**2. COMAR 26.11.09.08B (5) - Operator Training.**

- (a) **COMAR 26.11.09.08B (5)(a)** states that "for purposes of this regulation, the equipment operator to be trained may be the person who maintains the equipment and makes the necessary adjustments for efficient operation; and .
- (b) **COMAR 26.11.09.08B (5)(b)** states that the operator-training course sponsored by the Department shall include an in-house training course that is approved by the Department."

**Compliance Demonstration**

The Permittee shall:

Perform a combustion analysis for each combustion unit at least once each calendar year and optimize combustion based on analysis. [Authority: **COMAR 26.11.09.08G (1)(b)**].

Require each installation operators to attend operator-training program on combustion optimization that are sponsored by the Department, U.S. EPA, or equipment vendors, once every three years. [Authority: **COMAR 26.11.03.06C and COMAR 26.11.09.08G(1)(d)**]. Additionally, a Permittee who owns or operates fuel-burning equipment with a capacity factor (as defined in 40 CFR Part 72.2) of 15 percent or less shall provide certification of the capacity factor of the equipment to the Department in writing. [Authority: **COMAR 26.11.03.06C and COMAR 26.11.09.08G (1)(a)**].

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Continuously monitor operating parameters required to be established under §60.4211(d) to ensure the stationary internal combustion engine continues to meet the applicable emission standards [Authority: §60.4211(d)(2)].

The Permittee shall maintain a record of the date and time of the operation of the generator. The Permittee shall also:

- (a) Maintain records of the result of the combustion analysis at the site and make the records available to the Department and EPA upon request. [Authority: COMAR 26.11.09.08G(c)].
- (b) Prepare and maintain a record of training program attendance for each operator at the site and make these records available to the Department upon request; [Authority: COMAR 26.11.09.08E(1)(e) and COMAR 26.11.09.08G (1)(e)].
- (c) Records of the calculated capacity factors on site for at least five years. [Authority: COMAR 26.11.09.08G (1)(a)].
- (d) The Permittee shall maintain annual fuel use records and records that are necessary to submit with the quarterly emissions report [Authority: COMAR 26.11.09.08K(3) and COMAR 26.11.03.06C].

The Permittee shall maintain records of the initial performance test, if a test is conducted, to demonstrate initial compliance with applicable emission standards and in accordance with §60.4212 and shall maintain records of the established operating parameters to be monitored continuously to ensure the stationary internal combustion engine continues to meet the emission standards. [Authority: COMAR 26.11.03.06C and §60.4211(f)].

Compliance Status

The Permittee complies with the requirements of these regulations

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**E4. NO<sub>x</sub> Control - NSPS Subpart IIII Limitations - See E2 above**

- (a) §60.4205(b) - Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.
- (b) §60.4202(b) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (b)(1) through (2) of this section.

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- (1) For 2007 through 2010 model years, the emission standards in table 1 to this subpart, for all pollutants, for the same maximum engine power. - N/A
- (2) For 2011 model year and later, the Tier 2 emission Standards as described in 40 CFR part 1039, appendix I, for all pollutants and smoke standards as specified in 40 CFR 1039.5.

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Compliance Demonstration

The Permittee, owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b) .....must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) .....as applicable for the same model year and ... engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section. [**Authority: §60.4211(c)**].

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**F. Control of NESHAP**

**40 CFR Part 63 Subpart ZZZZ (NESHAP) - See NSPS Subpart IIII limitations.**

**Note: MACT for Subpart ZZZZ - §63.6590(c)(1) Stationary RICE subject to Regulations under 40 CFR 60.**

“An affected source that meets any of the criteria in paragraphs (c) (1) through (7) of this section must meet the requirements of this part by meeting the requirement of 40 CFR part 60 Subpart IIII, for compression ignition engine or 40 CFR part 60 Subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part” (**Ref: 40 CFR §63.6590(c)(1)**). See E2 above

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**G. Operational Requirements**

- G1. **§60.4206** - Owners and operators of emergency stationary CI ICE must operate and maintain stationary CI ICE so as to achieve the emission standards as required in §60.4205 over the entire life of engine.
- G2. **§60.4207** - Owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted.



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- G3. **§60.4211(a)** - The Permittee, owner, and operator of a stationary CI ICE subject to the emissions standard of 40 CFR Part 60, Subpart IIII must do all of the following, except as permitted under paragraph (g) of this section:
- (1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions;
  - (2) Change only those emission-related settings that are permitted by the manufacturer; and
  - (3) Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.
- G4. **§60.4211(f)** - Owners and operators of an emergency stationary ICE must operate the emergency stationary ICE according to the requirements in paragraphs (f)(1), (f)(2)(i) and (f)(3) of this section. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1), (f)(2)(i) and (f)(3) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1), (f)(2)(i) and (f)(3) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.
- (1) There is no time limit on the use of emergency stationary ICE in emergency situations.
  - (2) You may operate your emergency stationary ICE for any combination of the purposes specified in paragraphs (f)(2)(i) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (f)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2)(i).
    - (i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.
  - (3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (f)(2)(i) of this section. Except as provided in paragraph (f)(3)(i) of this section, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate

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income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

- (i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:
  - (A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;
  - (B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
  - (C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
  - (D) The power is provided only to the facility itself or to support the local transmission and distribution system.
  - (E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

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**Compliance Demonstration**

The Permittee, owner, or operator must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in §60.4211.

- (a) If you are an owner or operator of an emergency stationary CI internal combustion engine that does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter prior to startup of the engine.
- (b) If you are an owner or operator of a stationary CI internal combustion engine equipped with a diesel particulate filter to comply with the emission standards in §60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached. - N/A  
**[Authority: §60.4209].**

The Permittee shall maintain, on site, a record of operation of the engine to include fuel consumption, the hours of operation and purpose of operation - whether emergency or non-

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emergency situations such as maintenance and testing, etc - as necessitated by the operating requirements of §60.4211(f) and make the record available to the Department upon request. **[Authority: COMAR 26.11.03.06C and §60.4211(f)].**

The Permittee shall submit semi-annually or as appropriate, a report of all relevant operating records to include the hours of operation and purpose of operation of the engine - whether emergency or non-emergency situations such as maintenance and testing, etc – as necessitated by the operating requirements of §60.4211(f). **[Authority: COMAR 26.11.03.06C and §60.4211(f)].**

**Compliance Status**

The Permittee, owner or operator complies with the requirements of these regulations.

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**Section 112(r), Accidental Releases**

The Permittee is not subject to the requirements under Section 112 (r).

**1990 CAAA, Title IV, Acid Rain**

The Permittee is an affected source under the 1990 CAAA, Title IV Acid Rain Program and must comply with the Acid Rain Phase II Permit, which is being issued in conjunction with this Title V permit.

**Title VI, Ozone Depleting Substances**

Not applicable, the Facility does not service or repair its window air-conditioning units.

**Compliance Schedule**

Not applicable, the Permittee is in compliance.

**Permit Shield**

A Permit Shield shall cover the applicable requirements identified for the emissions unit listed in the “Regulatory Review/Technical Review/Compliance Methodology” section above.

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**SECTION V INSIGNIFICANT ACTIVITIES**

Brandywine has identified the following emissions units as insignificant activity in accordance with the requirements of Part 70 Permit Program. The applicable Clean Air Act requirements if any are listed below the insignificant activity.

- (1) No. 1 Stationary internal combustion engines with an output less than 500 brake horsepower (373 kilowatts) and which are not used to generate electricity for sale or for peak or load shaving;

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The diesel fuel fired fire protection engine/pump is subject to the following requirements:

- (a) **COMAR 26.11.09.05B(2)** – “Emissions During Idle Mode. A person may not cause or permit the discharge of emissions from any engine, operating at idle, greater than 10 percent opacity.”
  - (b) **COMAR 26.11.09.05B(3)** – “Emissions During Operating Mode. A person may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity.”
  - (c) **COMAR 26.11.09.05B(4)** “Exceptions:
    - (i) Section B(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system;
    - (ii) Section B(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:
      - (1) Engines that are idled continuously when not in service: 30 minutes,
      - (2) All other engines: 15 minutes; and
    - (iii) Section B(2) and (3) does not apply while maintenance, repair, or testing is being performed by qualified mechanics.”
  - (d) **COMAR 26.11.09.07A(2)(b)** “ In Areas III and IV - Sulfur Content Limitations for Fuel. A person may not burn, sell, or make available for sale any fuel with a sulfur content by weight in excess of or which otherwise exceeds 0.3 percent by weight.”
- (2) ✓ Space heaters utilizing direct heat transfer and used solely for comfort heat;
- (3) No. 75 Unheated VOC dispensing containers or unheated VOC rinsing containers of 60 gallons (227 liters) capacity or less;
- (4) Containers, reservoirs, or tanks used exclusively for:
- (a) ✓ Storage of butane, propane, or liquefied petroleum, or natural gas;
  - (b) No. 20 Storage of lubricating oils;
  - (c) No. 3 Storage of ULSD fuel oil;

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- (d) No. 30 The storage of VOC normally used as solvents, diluents, thinners, inks, colorants, paints, lacquers, enamels, varnishes, liquid resins, or other surface coatings and having individual capacities of 2,000 gallons (7.6 cubic meters) or less;
- (5) ☒ Certain recreational equipment and activities, such as fireplaces, barbecue pits and cookers, fireworks displays, and kerosene fuel use;

**SECTION VI STATE ONLY ENFORCEABLE CONDITIONS**

The Permittee is subject to the following State-only enforceable requirements:

**Units EU-1 and EU-2:** Combined cycle electric generating units consisting of two GE Frame 7EA combustion turbines (CTs) rated at 84 MW each, two (2) unfired HRSGs, and one (1) SG rated at 80 MW for a total generating electric capacity of 248 MW.

**Applicable Regulations/Limits:**

1. **COMAR 26.11.06.08**  
“An installation or premises may not be operated or maintained in such a manner that a nuisance or air pollution is created. Nothing in this regulation relating to the control of emissions may in any manner be construed as authorizing or permitting the creation of, or maintenance of, nuisance or air pollution.”
2. **COMAR 26.11.06.09**  
“A person may not cause or permit the discharge into the atmosphere of gases, vapors, or odors beyond the property line in such a manner that a nuisance or air pollution is created.”
3. **COMAR 26.09.01, .02, .03, and .04** - Maryland’s CO<sub>2</sub> Budget and Trading Program, which requires the Permittee to comply with the provisions and requirements of Maryland’s CO<sub>2</sub> Budget and Trading Program. The Permittee shall comply with the CO<sub>2</sub> Budget and Trading Permit that is attached to the Part 70 permit. See Appendix B.

**MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE)**

**AIR AND RADIATION ADMINISTRATION (ARA)**

**RESPONSE TO COMMENTS**

**RECEIVED DURING THE TITLE V RENEWAL COMMENT PERIOD FOR  
KMC THERMO, LLC LOCATED IN BRANDYWINE, MARYLAND**

**Comment Period:** On January 30, 2020, ARA issued a notice of intent to issue a Part 70 Operating Permit to KMC Thermo, LLC (KMC). That notice also provided the public with the opportunity to submit written comments or to request a public hearing on the permit intended to be issued. Interested persons were instructed to submit written comments or request a public hearing on the draft permit within 30 days from the date of the notice. The 30 days expired on February 29, 2020. A public hearing was requested on February 28, 2020 jointly by Environmental Integrity Project, Chesapeake Climate Action Network and the Clean Air Prince George's and Patuxent Riverkeeper organizations. The hearing request also included written comments.

Due to delays related to the COVID-19 pandemic, a public hearing was not scheduled until July 27, 2023. Therefore, written comments were accepted beyond February 29, 2020. Additional written comments were submitted on October 22, 2020 by the Environmental Integrity Project along with the Chesapeake Climate Action Network and the Clean Air Prince George's organizations.

**Purpose of the Hearing:** The purpose of the public hearing was to receive public comments on the Department's draft Title V operating permit and the associated permit renewal application submitted by KMC Thermo, LLC for their Brandywine Power Facility located at 16400 Mattawoman Drive, Brandywine, Maryland 20613-8089.

**Date and Location:** The public hearing was held virtually on July 27, 2023, at 6:30 p.m.

**Attendance:** Shannon Heafey, ARA, served as the Hearing Officer for ARA. Suna Sariscak presented ARA's public hearing statement and George Ikhinmwini, Mario Cora, Janay Mendez, Janel Dutton, Marcie Gurley, and Sam Mrida from ARA were present. Two (2) representatives for KMC Thermo, LLC and a court reporter from For The Record, Inc. were also present at the hearing. No members of the public or elected officials attended the hearing. No one from the Environmental Integrity Project or any community groups attended the hearing.

**Comments and Responses:**

Comment 1: The Draft Permit must be revised to set forth monitoring conditions for demonstrating compliance with the PSD limits for NOx at Units 1 and 2. MDE should require KMC Thermo to use data from the Facility's nitrogen

oxides ("NOx") continuous emission monitoring system ("CEMS") for this purpose.

Response I: The NOx CEMs is used to demonstrate compliance with the more stringent PSD NOx limits. The monitoring requirements of Table IV-1, 1.3C, CPCN section and corresponding record keeping and reporting requirements in Table IV-1, 1.4C, CPCN section and 1.5C and G, CPCN section of the Part 70 permit have been updated to provide more clarity regarding the CEMs and compliance with the more stringent NOx PSD hourly limits. Page 18 of the fact sheet has also been updated to reflect the permit changes and refers to the latest CEMs report received April 2024 for the first quarter of 2024 showing compliance.

Comment II: The Draft Permit must be revised to include the numerical limits for CO, PM, and NOx, as established in the federal New Source Performance Standards ("NSPS"), for Unit 3.

Response II: The Department has reviewed your comment and has revised the Part 70 permit (Table IV-2, 2.1, C, D, and E2) and fact sheet (page 30, section C, page 31, section D, page 32, section E2), to include the current and correct numerical limits for CO, PM, and NOx as specified in Table 2 to Appendix I Tier 2 Emissions Standards to Part 1039, as established in the federal New Source Performance Standards ("NSPS") for Unit 3. Note: The original CPCN limits for PM and NOx were inconsistent and less restrictive than the previous NSPS limits in 40 CFR §89.112 and the current applicable NSPS limits in Table 2 to Appendix I Tier 2 Emissions Standards to Part 1039.

Comment III: The Draft Permit must include the opacity limits that apply to Unit 3 through the NSPS.

Response III: The Department has reviewed and concurs with your comment and has included the opacity limits that apply to Unit 3 through the NSPS. 40 CFR §60.4202(b)(2) no longer references Part 89 and now refers to Part 1039. 40 CFR §60.4202(b)(2) now reads as follows: "For 2011 model year and later, the Tier 2 emission standards as described in 40 CFR part 1039, appendix I, for all pollutants and the smoke standards as specified in 40 CFR 1039.105." Table IV-2A of the permit lists all applicable NSPS limits for all pollutants covered by the regulation. This includes the smoke standards in 40 CFR 1039.105. NSPS Subpart IIII outlines the compliance strategy for complying with all of these applicable standards. The permit (Table IV-2, 2.1 A4) and page 28, section A4 of the fact sheet have been updated to include 1039 instead of 89.