

Connecticut Department of  
**ENERGY &  
ENVIRONMENTAL  
PROTECTION**

**BUREAU OF AIR MANAGEMENT  
TITLE V OPERATING PERMIT**

Issued pursuant to Title 22a of the Connecticut General Statutes (CGS) and Section 22a-174-33 of the Regulations of Connecticut State Agencies (RCSA) and pursuant to the Code of Federal Regulations (CFR), Title 40, Part 70.

<b>Title V Permit Number</b>	104-0106-TV
<b>Client/Sequence/Town/Premises Numbers</b>	138/13/104/24
<b>Date Issued</b>	November 25, 2019
<b>Revision Date</b>	February 28, 2022
<b>Expiration Date</b>	November 25, 2024

**Corporation:**

*Middletown Power LLC*

**Premises Location:**


*1866 River Road, Middletown, Connecticut 06457*

**Name of Responsible Official and Title:**

*Kurt Huizing, Plant Manager*

All the following attached pages, 2 through 66, are hereby incorporated by reference into this Title V permit.

for

  
Katherine S. Dykes  
Commissioner

February 28, 2022

Date

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## **Title V Operating Permit**

**All conditions in Sections III, IV, and VI of this Title V permit are enforceable by both the Administrator and the commissioner unless otherwise specified. Applicable requirements and compliance demonstration are set forth in Section III of this Title V permit. The Administrator or any citizen of the United States may bring an action to enforce all permit terms or conditions or requirements contained in Sections III, IV, and VI of this Title V permit in accordance with the Clean Air Act, as amended.**

## LIST OF ABBREVIATIONS/ACRONYMS

AEL	Allowable Emission Rate
ASTM	American Society for Testing and Material
Btu	British Thermal Unit
CAM	Compliance Assurance Monitoring
CAIR	Clean Air Interstate Rule
CEM	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
CGS	Connecticut General Statutes
CO	Carbon Monoxide
COMS	Continuous Opacity Monitoring System
CO <sub>2</sub>	Carbon Dioxide
DERC	Discrete Emission Reduction Credits
DEEP	Department of Energy & Environmental Protection
EPA	Environmental Protection Agency
ESP	Electrostatic Precipitator
EU	Emission Unit
°F	Degrees Fahrenheit
FLER	Full Load Emission Rate
ft <sup>3</sup>	Cubic Feet
gal	Gallons
gph	Gallons per Hour
GEU	Grouped Emission Unit
HAP	Hazardous Air Pollutant
HHV	Higher Heating Value
hr	Hour
IFGR	Induced Flue Gas Recirculation
ISO-NE	ISO-New England
kW	Kilowatt
lb	Pound
MASC	Maximum Allowable Stack Concentration
MATS	Mercury and Air Toxics Standard
MMBtu	Million Btu
MW	Megawatt
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO <sub>x</sub>	Nitrogen Oxides
NSPS	New Source Performance Standards
NSR	New Source Review
O <sub>2</sub>	Oxygen
Pb	Lead
PEMS	Predictive Emission Monitoring Systems
PM	Particulate Matter
PM <sub>10</sub>	Particulate Matter less than 10 microns
PM <sub>2.5</sub>	Particulate Matter less than 2.5 microns
ppm	Parts per million
ppmvd	Parts per million, volumetric dry basis
QA/QC	Quality Assurance and Quality Control
RACT	Reasonably Available Control Technology
RCSA	Regulations of Connecticut State Agencies

## LIST OF ABBREVIATIONS/ACRONYMS, continued

<i>Abbreviation/Acronym</i>	<i>Description</i>
scf	Standard Cubic Feet
scfh	Standard Cubic Feet per Hour
SCR	Selective Catalytic Reduction
SIC	Source Identification Code
SNCR	Selective Non-Catalytic Reduction
SO <sub>2</sub>	Sulfur Dioxide
SOS	Standard Operating Scenario
SO <sub>x</sub>	Sulfur Oxides
TA&O	Trading Agreement & Order
tpy	Tons per year
TR	Transformer Rectifier
TSP	Total Suspended Particulate
ULSD	Ultra-Low Sulfur Distillate
VOC	Volatile Organic Compound
yr	Year

## Section I: Premises Information/Description

### A. PREMISES INFORMATION

Nature of Business: Electric Power Generation  
Primary SIC: 4911  
Other SIC: None

Facility Mailing Address: Middletown Power LLC, P.O. Box 1001, 1866 River Road, Middletown, CT 06457  
Telephone Number: (860) 638-3031

### B. PREMISES DESCRIPTION

Middletown Power LLC is located on River Road in Middletown, Connecticut. The station produces electricity for sale. The station consists of three steam electric generating boilers (Units 2, 3 and 4) and five combustion turbines (Units 10 and 12-15) for the production of electricity. Additional emissions units at the station include one auxiliary steam boiler (Unit 4A) and two glycol boilers used to heat the natural gas. The total electrical output from the station is 953 megawatts (MW).

Unit 2 (EU-1), Registration No. 104-0098-R, is a traditionally fired Riley boiler rated at 1,295 MMBtu/hr and capable of producing 117 MW. Unit 2 is capable of burning No. 6 oil, ULSD (for ignition only) and natural gas on an interruptible basis. Unit 2 uses over-fire air and urea injection to control NOx emissions. Unit 2 is subject to Consent Order No. 1888, Trading Agreement & Order No. 8365 (NOx RACT), and RCSA §22a-174-22c (CAIR). Unit 2 is equipped with the following CEM for compliance verification: CO<sub>2</sub>, NOx, SO<sub>2</sub>, and opacity.

Unit 3 (EU-2), Registration No. 104-0100-R, is a Babcock and Wilcox cyclone boiler rated at 2,370 MMBtu/hr and capable of producing 236 MW. Unit 3 is capable of burning No. 6 oil, ULSD (for ignition only) and natural gas on an interruptible basis. Unit 3 is subject to the requirements of Trading Agreement & Order No. 8365 (NOx RACT), and RCSA §22a-174-22c (CAIR). Unit 3 may use the following to control NOx emissions: Over-Fire Air and/or SNCR. Unit 3 is equipped with the following CEM for compliance verification: CO<sub>2</sub>, NOx, SO<sub>2</sub>, and opacity.

Unit 4 (EU-3), Permit No. 104-0003, is a tangentially fired Combustion Engineering boiler rated at 4,684 MMBtu/hr and capable of producing 400 MW. Unit 4 is capable of burning No. 6 oil and ULSD (for ignition only). Unit 4 is subject to Consent Order No. 1888, Trading Agreement & Order No. 8365 (NOx RACT), and RCSA §22a-174-22c (CAIR). Unit 4 is also subject to Consent Order No. 8377 for Alternative NOx RACT compliance and may use any of the following to control NOx emissions: Combustion Modification [Low-NOx burners, Excess Air Control, (i.e. Low-NOx vanes, Over-Fire Air)], and/or Urea Injection as allowed by Permit No. 104-0003, modified on May 13, 2020. Unit 4 is equipped with the following CEM for compliance verification: CO<sub>2</sub>, NOx, SO<sub>2</sub>, and opacity.

Units 2, 3 and 4 are Phase II Acid Rain Sources and their CEM system has been certified in accordance with 40 CFR Part 75.

Units 2, 3 and 4 are considered Electric Generating Units as defined by the Mercury and Air Toxics Standards (MATS), 40 CFR Part 63 Subpart UUUUU, for power plants.

Unit 4A (EU-4), Permit No. 104-0002, is a Babcock and Wilcox auxiliary steam boiler which provides steam for boiler warm-up and plant heating. Unit 4A is capable of firing ULSD fuel oil and natural gas on an interruptible basis. Unit 4A is located within the main power plant building and shares a stack with EU-3. Unit 4A is operated under the *light liquid fuel* subcategory with an oxygen trim system to maintain the air-to-fuel ratio in accordance with 40 CFR Part 63 Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters.

## **Section I: Premises Information/Description**

### **B. PREMISES DESCRIPTION, continued**

Unit 10 (EU-5), Registration 104-0102-R, is a 20 MW Pratt & Whitney FT4A-8 combustion turbine. It is located east of the main power plant building. This unit is subject to Trading Agreement and Order No. 8366A and Consent Order No. 8377 for Alternative NOx RACT. Compliance. The registration for this unit was modified on May 29, 2013 to restrict sulfur content in the fuel to 0.05%, by weight (500 ppm).

Units 12-15 (EU-8 through EU-11), Permit Nos. 104-0144 through 104-0147, are each 50 MW General Electric LM6000 dual fuel fired combustion turbines. They are located east of the main power plant building each with its own stack. These units utilize water injection, selective catalytic reduction (SCR) and oxidation catalyst to control NOx, CO and VOC. These units are subject to 40 CFR Part 60 Subpart KKKK, Standards of Performance for Stationary Combustion Turbines. The emission rates for SOx and NOx in the NSR permits are below the limitations outlined in Subpart KKKK. Units 12-15 are Phase II Acid Rain sources and their CEM system is certified in accordance with 40 CFR Part 75.

The Middletown Power LLC has been given approval to blend No. 6 oil with > 0.5% sulfur. This activity has been determined to be less than 1.0 ton per year of potential emissions and thus is deemed an insignificant activity. However, the approval continues to be in effect provided that Middletown Power LLC complies with the terms and conditions listed for fuel blending in Section III.F Premises-Wide General Requirements of this Title V permit.

## Section II: Emissions Units Information

Emissions units are set forth in Table II.A. It is not intended to incorporate by reference these NSR Permits, Orders, Registrations, or Regulations into this Title V permit.

<b>TABLE II.A: EMISSIONS UNIT DESCRIPTION</b>			
<b>Emissions Units</b>	<b>Emissions Unit Description</b>	<b>Control Unit Description</b>	<b>Permit, Order, Registration, or Regulation Number</b>
EU-1	Unit 2: Riley Dual fuel fired 1,295 MMBtu/hr electric utility steam boiler Installed 11/01/1958	Electrostatic Precipitator and Boiler over-fire air and urea injection	104-0098-R Consent Order No. 1888 TA&O No. 8365 40 CFR Part 63 Subpart UUUUU 40 CFR Parts 72-78, inclusive RCSA §§22a-174-19a, 22c, 22e
EU-2	Unit 3: Babcock and Wilcox Dual fuel fired 2,370 MMBtu/hr electric utility steam boiler Installed 12/01/1964	Electrostatic Precipitator, Boiler over-fire air and/or SNCR	104-0100-R TA&O No. 8365 40 CFR Part 63 Subpart UUUUU 40 CFR Parts 72-78, inclusive RCSA §§22a-174-19a, 22c, 22e
EU-3	Unit 4: Combustion Engineering No. 6 oil fired 4,684 MMBtu/hr electric utility steam boiler Installed 03/01/1973	Unit 4 may use any of the following to control NOx emissions: Combustion Modification [Low-NOx burners, Excess Air Control, (i.e. Low-NOx vanes, Over-Fire Air)], and/or Urea Injection as allowed by Permit No. 104-0003, modified on May 13, 2020	P104-0003 Consent Order No. 1888 TA&O No. 8365 Consent Order No. 8377 40 CFR Part 63 Subpart UUUUU 40 CFR Parts 72-78, inclusive RCSA §§22a-174-19a, 22c, 22e
EU-4	Unit 4A: Babcock and Wilcox Dual fuel fired auxiliary steam boiler Installed 03/05/1982	Low NOx Burner and Induced Flue Gas Recirculation	P104-0002 40 CFR Part 63 Subpart DDDDD
EU-5	Unit 10: Pratt & Whitney 20 MW ULSD fired Combustion Turbine Model FT4A-8 Installed 08/01/1966	None	104-0102-R TA&O No. 8366A Consent Order No. 8377 RCSA §§22a-174-19a, 22c, 22e
EU-8	Unit 12: General Electric dual fired 50 MW Combustion Turbine Model LM6000 Installed June 2011	Water Injection, SCR, Oxidation Catalyst	P104-0144 40 CFR Part 60 Subpart KKKK 40 CFR Parts 72-78, inclusive RCSA §§22a-174-19, 22c, 22e



## Section II: Emissions Units Information

<b>TABLE II.A: EMISSIONS UNIT DESCRIPTION</b>			
<b>Emissions Units</b>	<b>Emissions Unit Description</b>	<b>Control Unit Description</b>	<b>Permit, Order, Registration, or Regulation Number</b>
EU-9	Unit 13: General Electric dual fired 50 MW Combustion Turbine Model LM6000 Installed June 2011	Water Injection, SCR, Oxidation Catalyst	P104-0145 40 CFR Part 60 Subpart KKKK 40 CFR Parts 72-78, inclusive RCSA §§22a-174-19a, 22c, 22e
EU-10	Unit 14: General Electric dual fired 50 MW Combustion Turbine Model LM6000 Installed June 2011	Water Injection, SCR, Oxidation Catalyst	P104-0146 40 CFR Part 60 Subpart KKKK 40 CFR Parts 72-78, inclusive RCSA §§22a-174-19a, 22c, 22e
EU-11	Unit 15: General Electric dual fired 50 MW Combustion Turbine Model LM6000 Installed June 2011	Water Injection, SCR, Oxidation Catalyst	P104-0147 40 CFR Part 60 Subpart KKKK 40 CFR Parts 72-78, inclusive RCSA §§22a-174-19a, 22c, 22e
GEU-1	EU-1 through EU-3	See above	See above
GEU-2	EU-8 through EU-11	See above	See above

### B. OPERATING SCENARIO IDENTIFICATION

The Permittee shall be allowed to operate under the following Standard Operating Scenarios (SOS). There are no alternate operating scenarios.

<b>TABLE II.B: OPERATING SCENARIO IDENTIFICATION</b>	
<b>Emissions Units Associated with the Scenario</b>	<b>Description of Scenarios</b>
All Emissions Units	All emissions units associated with SOS shall be operated in accordance with applicable permit or registration terms and conditions and in accordance with best management practices while combusting liquid fuels or natural gas as allowed.

### Section III: Applicable Requirements and Compliance Demonstration

The following contains summaries of applicable regulations and compliance demonstration for each identified Emissions Unit regulated by this Title V permit.

#### A. GROUPED EMISSIONS UNIT 1 (GEU-1): Three steam electric generating boilers: EU-1, EU-2, EU-3

Registration Nos. 104-0098-R, 104-0100-R, and Permit No. 104-0003; TA&O No. 8365; Consent Order No. 1888 (EU-1 and EU-3 only); Consent Order No. 8377 (EU-3 only); 40 CFR Part 63 Subpart UUUUU (MATS); RCSA §§22a-174-19a, 22c, 22e

#### 1. Nitrogen Oxides (NO<sub>x</sub>):

##### a. Limitation or Restriction

- i. Until May 31, 2023, NO<sub>x</sub> emissions shall not exceed the following, except as specified in Section III.A.2. of this Title V permit:

(A) No. 6 Oil (Daily Block Average)

- (1) Less than or equal to 0.25 lb/MMBtu (**EU-1 only**)

[RCSA §22a-174-22e(d)(2)(A)]

- (2) Less than or equal to 0.43 lb/MMBtu (**EU-2 only**)

[RCSA §22a-174-22e(d)(2)(A)]

(B) ULSD (Daily Block Average)

- (1) Less than or equal to 0.20 lb/MMBtu (**EU-1 only**)

[RCSA §22a-174-22e(d)(2)(A)]

- (2) Less than or equal to 0.43 lb/MMBtu (**EU-2 only**)

[RCSA §22a-174-22e(d)(2)(A)]

(C) Natural Gas (Daily Block Average)

- (1) Less than or equal to 0.20 lb/MMBtu (**EU-1 only**)

[RCSA §22a-174-22e(d)(2)(A)]

- (2) Less than or equal to 0.30 lb/MMBtu (**EU-2 only**)

[RCSA §22a-174-22e(d)(2)(A)]

(D) Ozone/Non-Ozone Season Average

- (1) Ozone Season

- (a) Less than or equal to 0.10 lb/MMBtu (5 month average) during the period from May 1 through September 30, inclusive (**Gas and Other Oil Fired**)

[RCSA §22a-174-22e(d)(2)(B)]

- (b) Less than or equal to 0.20 lb/MMBtu (5 month average) during the period from May 1 through September 30, inclusive (**Residual Oil Fired**)

[RCSA §22a-174-22e(d)(2)(B)]

- (c) The Permittee shall calculate the ozone season emission rate as the sum of the emissions unit's NO<sub>x</sub> emissions while firing the applicable fuel during the period from May 1 through September 30, inclusive, divided by the sum of the emission unit's heat input while firing the applicable fuel during the period from May 1 through September

### Section III: Applicable Requirements and Compliance Demonstration

30, inclusive. [RCSA §22a-174-22e(d)(2)]

(2) Non-Ozone Season

Less than or equal to 0.15 lb/MMBtu (7 month average) during the period October 1 through April 30, inclusive [RCSA §22a-174-22e(d)(2)(B)]

(E) **EU-3** shall comply with Consent Order No. 8377 at all times, see Section III.A.2a of this Title V Permit.

ii. On and After June 1, 2023, NO<sub>x</sub> emissions for GEU-1 shall not exceed the following:

[RCSA §22a-174-22e(d)(2)(C)]

(A) No. 6 Oil (Daily Block Average)

(1) Less than or equal to 0.20 lb/MMBtu

(B) ULSD Oil (Daily Block Average)

(1) Less than or equal to 0.10 lb/MMBtu

(C) Natural Gas (Daily Block Average)

(1) Less than or equal to 0.10 lb/MMBtu

(D) Non-Ozone Season Average

(1) Less than or equal to 0.15 lb/MMBtu (5 month average) during the period from October 1 through April 30, inclusive (**All Fuels**)

[RCSA §22a-174-22e(d)(2)(D)]

iii. NO<sub>x</sub> Emissions Limits while combusting 1 or more fuels shall be determined in accordance with RCSA §22a-174-22e(d)(10).

*b. Monitoring Requirements*

i. For each fuel combusted the Permittee shall monitor monthly and annual fuel consumption.

[RCSA §22a-174-33(j)(1)(K)(ii)]

ii. The Permittee shall install, calibrate, maintain, operate and certify a CEM for NO<sub>x</sub> and comply with the applicable monitoring specified in RCSA §§22a-174-22e(k) and 22a-174-22e(m).

*c. Record Keeping Requirements* [RCSA §22a-174-22e(j)]

i. The Permittee shall comply with the applicable record keeping requirements specified in RCSA §22a-174-22e(j).

ii. The Permittee shall make and keep records in accordance with 40 CFR §§75.50-75.59

*d. Reporting Requirements*

i. The Permittee shall comply with the applicable reporting requirements specified in RCSA §22a-174-22e(k).

ii. The Permittee shall submit all required reports in accordance with 40 CFR §§75.60-75.67

**2. Alternate NO<sub>x</sub> RACT Compliance: Grouped Emissions Unit 1 shall comply with TA&O No. 8365 at all times.**

*a. Limitation or Restriction*

i. The Permittee may use emissions trading, subject to the provisions of TA&O No. 8365 and Consent

### Section III: Applicable Requirements and Compliance Demonstration

Order No. 8377 until the earlier of: [TA&O No. 8365, para. B.1; CO 8377, para. C.4]

- (A) May 31, 2023;
  - (B) The commissioner issues written notice to the Permittee stating that the Permittee is no longer allowed to use emissions trading due to the Permittees' violation of any provision of TA&O No. 8365; or
  - (C) The commissioner issues written notice to the Permittee notifying the Permittee that the commissioner has determined the use of emissions trading as a compliance option has been further restricted, modified or nullified by:
    - (1) the promulgation of an Act, Statute, or Regulations; or
    - (2) the issuance of a judgment or court order.
- ii. The Permittee agrees that the actual NOx emissions rate from the emission units described in Table 1 of TA&O No. 8365, at times, exceed the corresponding AELs.  
[TA&O No. 8365, para. A.5.]
- iii. The Permittee and the commissioner agree that the ozone and non-ozone season average NOx emission rate from the emissions units described in Table 1 of TA&O No. 8365, at times, may be less than the corresponding AELs. At such times, the Permittee propose to generate DERCs.  
[TA&O No. 8365, para. A.6.]
- iv. The Permittee proposes to use the actual 24-hour average emissions rate measured by CEMS for the purposes of calculating Actual DERCs generated and/or Actual DERCs Required for the emissions units described in Table 1 of TA&O No. 8365.  
[TA&O No. 8365, para. A.8.]
- v. The Permittee shall obtain and use sufficient DERCs in such a manner as to comply with paragraphs B.6 and B.8 of TA&O No. 8365. All DERCs used during the Ozone Season for the emissions units described in Table 1 of TA&O No. 8365, shall have been generated during an Ozone Season.  
[TA&O No. 8365, para. B.2]
- vi. Daily DERC Use. On the first day of each calendar month, the Permittee shall possess a quantity of DERCs that equals or exceeds the quantity of Actual DERCs Required in that month. Compliance with Paragraph B.6 of TA&O No. 8365 shall be determined as follows:  
[TA&O No. 8365, para. B.6]
- (A) Before the first day of each month, the Permittee shall estimate DERCs required for such calendar month for each emission unit identified in Table 1 of TA&O No. 8365 as follows:  
Estimated DERCs Required =  
$$\{(\text{Estimated fuel use in MMBtu}) \times ((\text{estimated 24-hr average NOx emission rate lb/MMBtu}) - (0.95 \times \text{AEL}))\} \div 2000 \text{ lb/ton}$$
  - (B) No later than the twentieth day of each month, the Permittee shall calculate actual DERCs used in the preceding calendar month for each emission unit described in Table 1 of TA&O No. 8365 as follows:  
Actual DERCs Required =  
$$\Sigma\{(\text{Daily fuel use in MMBtu}) \times ((\text{actual 24-hr average emission rate lb/MMBtu}) - (0.95 \times \text{AEL}))\} \div 2000 \text{ lb/ton}$$

### Section III: Applicable Requirements and Compliance Demonstration

For all days in the month where actual 24-hr average emissions rate > AEL

- vii. Ozone Season DERC Use. In addition to the requirements of Paragraph B.6 of TA&O No. 8365, on the first day of each Ozone Season, the Permittee shall possess a quantity of DERCs that equals or exceeds the quantity of Ozone Season Actual DERCs Required for that Ozone Season. Compliance with Paragraph B.7 of TA&O No. 8365 shall be determined as follows: [TA&O No. 8365, para. B.7]
- (A) Before the first day of each Ozone Season, the Permittee shall estimate DERCs required for that Ozone Season for each emission unit described in Table 1 of TA&O No. 8365 as follows:
- Estimated Ozone Season DERCs Required =
- $$\{(\text{Estimated Ozone Season fuel use in MMBtu}) \times ((\text{Estimated average NOx Emission Rate lb/MMBtu}) - (0.95 \times \text{ozone season average AEL}))\} \div 2000 \text{ lb/ton}$$
- (B) No later than 30 days after the end of each Ozone Season, the Permittee shall calculate Actual Ozone Season DERCs used during that Ozone Season for each emission unit as follows:
- Actual Ozone Season DERCs Required =
- $$\{(\text{Actual Ozone Season fuel use in MMBtu}) \times ((\text{Ozone Season Average Actual NOx Emission Rate lb/MMBtu}) - (0.95 \times \text{ozone season average AEL}))\} \div 2000 \text{ lb/ton} - \Sigma(\text{DERCS Required for all months of the Ozone Season calculated pursuant to Paragraph B.6 of TA\&O No. 8365})$$
- viii. Non-Ozone Season DERC Use. In addition to the requirements of Paragraphs B.6 and B.7 of TA&O No. 8365, on the first day of each Non-Ozone Season, the Permittee shall possess a quantity of DERCs that equals or exceeds the quantity of Non-Ozone Season Actual DERCs Required for that Non-Ozone Season. Compliance with Paragraph B.8 of TA&O No. 8365 shall be determined as follows: [TA&O No. 8365, para. B.8]
- (A) Before the first day of each Non-Ozone Season, the Permittee shall estimate DERCs required for that Non-Ozone Season for each emission unit described in Table 1 of TA&O No. 8365 based on an emission limit of 0.15 lb/MMBtu as follows:
- Estimated Non-Ozone Season DERCs Required =
- $$\{(\text{Estimated Non-Ozone Season fuel use in MMBtu}) \times ((\text{Estimated average NOx Emission Rate lb/MMBtu}) - (0.95 \times 0.15 \text{ lb/MMBtu}))\} \div 2000 \text{ lb/ton}$$
- (B) No later than 30 days after the end of each Non-Ozone Season, the Permittee shall calculate Actual Non-Ozone Season DERCs used during that Non-Ozone Season for each emission unit as follows:
- Actual Non-Ozone Season DERCs Required =
- $$\{(\text{Actual Non-Ozone Season fuel use in MMBtu}) \times ((\text{Non-Ozone Season Average Actual NOx Emission Rate lb/MMBtu}) - (0.95 \times 0.15 \text{ lb/MMBtu}))\} \div 2000 \text{ lbs/ton} - \Sigma(\text{DERCS Required for all months of the Non-Ozone Season calculated pursuant to Paragraph B.6 of TA\&O No. 8365})$$
- ix. Ozone Season DERC Generation. No later than 30 days after the end of the Ozone Season, the Permittee shall calculate actual DERCs generated during the Ozone Season from each emission unit described in Table 1 of TA&O No. 8365 as follows: [TA&O No. 8365, para. B.9]
- Actual Ozone Season DERCs Generated =
- $$\{\text{Ozone Season fuel use (MMBtu)} \times [(\text{Ozone Season average AEL}) - \text{Ozone Season average emission rate (lb/MMBtu)}]\} \div 2000 \text{ lb/ton}$$
- Where Ozone Season fuel use and Ozone Season Average Emission rate shall exclude missing data substituted in accordance with any missing data substitution procedures, including those allowed under

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RCSA §22a-174-22c and 40 CFR Part 75.

- x. Non-Ozone Season DERC Generation. No later than 30 days after the end of the Non-Ozone Season, the Permittee shall calculate actual DERCs generated during the Non-Ozone Season from each emission unit described in Table 1 of TA&O No. 8365 as follows:

[TA&O No. 8365, para. B.10]

Actual Non-Ozone Season DERCs Generated =

{Non-Ozone Season fuel use (MMBtu) x [(0.15 lb/MMBtu) – Non-Ozone Season average emission rate (lb/MMBtu)]} ÷ 2000 lb/ton

Where:

Non-Ozone Season Average Emission Rate < 0.15 lb/MMBtu; and

Where Non-Ozone Season fuel use and Non-Ozone Season Average Emission rate shall exclude missing data substituted in accordance with any missing data substitution procedures, including those allowed under RCSA §22a-174-22c and 40 CFR Part 75.

- xi. The Permittee shall retire ten percent of all DERCs (tons) generated by the emission units identified in Table 1 of TA&O No. 8365, prior to use, and shall deduct them from any calculations of DERCs available and possessed by the Permittee to assure a benefit to the environment.

[TA&O No. 8365, para. B.11]

- xii. On or before January 31 of each calendar year, the Permittee shall deduct a quantity of DERCs from the current balance of DERCs possessed by the Permittee such that the total is equal to the sum of (Actual DERCs Required determined pursuant to Paragraphs B.6 and B.7 of TA&O No. 8365 for the preceding calendar year) – 0.9\*(Actual DERCs Generated determined pursuant to Paragraph B.9 of TA&O No. 8365 in the preceding calendar year) for all emissions units.

[TA&O No. 8365, para. B.12]

- xiii. Not more than 90 days after the completion of the Non-Ozone Season, the Permittee shall deduct a quantity of DERCs from the current balance of DERCs possessed by the Permittee such that the total is equal to 0 or the total of (Actual Non-Ozone Season DERCs Required for the most recently completed Non-Ozone Season) – 0.9\*(Actual Non-Ozone Season DERCs Generated in the most recently completed Non-Ozone Season) for all emissions units described in Table 1 of TA&O No. 8365, whichever is greater.

[TA&O No. 8365, para. B.13]

- xiv. Vintage Restriction. For the purposes of compliance with RCSA §22a-174-22e and the provisions of TA&O No. 8365, DERCs shall only remain valid for five calendar years from the year of the generation of such DERCs. DERCs older than five calendar years from their creation are not valid for use for compliance with RCSA §22a-174-22e and the provisions of TA&O No. 8365. Ozone Season DERCs generated by a Affected Unit during 2013 shall remain valid until December 31, 2018.

[TA&O No. 8365, para. B.3]

- xv. Ozone Season Fuel Use Restriction. Notwithstanding the provisions of Paragraph B.2 of TA&O No. 8365, when operating the emission units during the Ozone Season, the Permittee shall operate those units while firing or co-firing the lowest NOx emitting fuel type or combination of fuel types that the units are authorized to burn in accordance with Departmental permit, registration, or applicable regulation.

[TA&O No. 8365, para. B.4]

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- xvi. Notwithstanding Paragraph B.4 of TA&O No. 8365, during the Ozone Season, the Permittee may operate the emission units described above on fuels that result in higher emissions of NO<sub>x</sub>, if either:

[TA&O No. 8365, para. B.5]

- (A) the availability of fuel oil that complies with Paragraph B.4 of TA&O No. 8365 is inadequate to meet the needs of residential, commercial and industrial users in this state and that such inadequate supply constitutes an emergency; or
- (B) the supply of gaseous fuels to the emission units is interrupted due to inadequate supply or in accordance with an interruptible supply agreement between the Permittee and the gaseous fuel supplier; or
- (C) the unit is operating in order to conduct testing required by any governmental agency or auditing/testing required to demonstrate the ability to satisfy commitments made to ISO-NE in the Forward Capacity and/or Locational Forward Reserve Markets.

b. *Maintenance and Tune-Up* [TA&O No. 8365, para. B.14]

Not more than one year from the date of issuance of TA&O No. 8365, the Permittee shall perform maintenance and inspection of each emissions unit described in Table 1 of TA&O No. 8365. Such maintenance and inspection shall include, but not be limited to, the following:

- i. Inspect the combustion system, and clean or replace any components of the combustion system as necessary, in accordance with manufacturer's specification or current good engineering practice;
- ii. Inspect the system controlling the air-to-fuel ratio, and ensure that it is calibrated and functioning in accordance with the manufacturer's specifications or current good engineering practice; and
- iii. Measure the operating parameters of the emission unit used to determine that the emission unit is operating in accordance with manufacturer's specification or current good engineering practice prior to and after any adjustments are made during maintenance, tune-up, or inspection activity.

c. *Record Keeping Requirements*

- i. The Permittee shall make and keep records including, but not limited to, the following:

[TA&O No. 8365, para. B.14.d.]

- (A) Demonstration that any maintenance, tune-up, and/or inspection activity performed on the emission units described in Table 1 of TA&O No. 8365 in accordance with Paragraph B.14 of TA&O No. 8365 has been performed in accordance with the manufacturer's specifications or current good engineering practice;
  - (B) The date and a description of any maintenance, tune-up, and/or inspection activity performed on the emission units described in Table 1 of TA&O No. 8365 in accordance with Paragraph B.14 of TA&O No. 8365;
  - (C) The name, title and affiliation of the person conducting any maintenance, tune-up, and/or inspection activity performed on the emission units described in Table 1 of TA&O No. 8365 in accordance with Paragraph B.14 of TA&O No. 8365; and
  - (D) The operating parameters of the emission unit used to determine that the emission unit is operating in accordance with manufacturer's specification or current good engineering practice prior to and after any adjustments are made during maintenance, tune-up, or inspection activity performed in accordance with Paragraph B.14 of TA&O No. 8365.
- ii. By the close of each calendar day, the Permittee shall record the actual 24-hour average NO<sub>x</sub> emission rate for any emission unit equipped with an approved CEM, the actual fuel type and the

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actual quantity of each type of fuel in units of volume per day or MMBtu per day for each fuel used on the preceding day in an emission unit described in TA&O No. 8365.

[TA&O No. 8365, para. B.15.a.]

- iii. On or before the first day of each calendar month, the Permittee shall record the number of DERCS and corresponding serial numbers and vintages for all DERCS in its possession on the first calendar day of that calendar month.

[TA&O No. 8365, para. B.15.b.]

- iv. On or before the first day of each calendar month, the Permittee shall record the number of DERCS and corresponding serial numbers, vintages, purchase/sales dates, and seller/buyer for all DERCS purchased or sold during the proceeding calendar month.

[TA&O No. 8365, para. B.15.c.]

- v. On or before the first day of each calendar month, the Permittee shall record the Estimated DERCS Required for that calendar month determined in accordance with Paragraph B.6 of TA&O No. 8365.

[TA&O No. 8365, para. B.15.d.]

- vi. On or before the twentieth calendar day of each calendar month, the Permittee shall record the Actual DERCS Required for the preceding calendar month determined in accordance with Paragraph B.6 of TA&O No. 8365.

[TA&O No. 8365, para. B.15.e.]

- vii. On or before January 31 of each calendar year, the Permittee shall record the Ozone Season Average NOx emission rate for all emissions units described in Table 1 of TA&O No. 8365, the Actual DERCS Generated for the preceding ozone season determined in accordance with Paragraph B.9 of TA&O No. 8365 and the DERCS retired for environmental benefit in accordance with Paragraph B.11 of TA&O No. 8365.

[TA&O No. 8365, para. B.15.f.]

- viii. On or before January 31 of each calendar year, the Permittee shall record the quantity of DERCS possessed on the first day of the Ozone Season and the quantity of DERCS deducted in accordance with Paragraphs B.6 and B.7 of TA&O No. 8365. Such records shall include the serial number and vintage of each DERC deducted from the Permittees' current balance pursuant to Paragraphs B.6 and B.7 of TA&O No. 8365.

[TA&O No. 8365, para. B.15.g.]

- ix. Not more than 90 days after the completion of each Non-Ozone Season, the Permittee shall record the Non-Ozone Season Average NOx emission rate for all emissions units described in Table 1 of TA&O No. 8365, the quantity of DERCS generated during the Non-Ozone Season in accordance with Paragraph B.10 of TA&O No. 8365, and the quantity of DERCS generated during the Non-Ozone Season and retired for environmental benefit in accordance with Paragraph B.11 of TA&O No. 8365. [TA&O No. 8365, para. B.15.h.]

- x. Not more than 90 days after the completion of each Non-Ozone Season, the Permittee shall record the quantity of DERCS possessed on the first day of the Non-Ozone Season, and the quantity of DERCS deducted in accordance with Paragraph B.13 of TA&O No. 8365. Such records shall include the serial number and vintage of each DERC deducted from the Permittees' current balance pursuant to Paragraphs B.6 and B.8 of TA&O No. 8365. [TA&O No. 8365, para. B.15.i.]

- xi. For each month of the Ozone Season, the Permittee shall maintain records attesting to the fact that



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any DERCs deducted from its balance in accordance with Paragraph B.12 of TA&O No. 8365 satisfy the requirements of Paragraph B.2. of TA&O No. 8365. Generator certification of this fact shall be sufficient.

[TA&O No. 8365, para. B.15.j.]

- xii. On each day during the Ozone Season that the Permittee operates in accordance with Paragraph B.5 of TA&O No. 8365, the Permittee shall make and keep records of all emission unit operation in accordance with Paragraph B.5 of TA&O No. 8365, including copies of any written correspondence from the Permittees' fuel supplier detailing the duration and circumstances of the inadequate fuel oil supply or interruption of gaseous fuel supply to the emission units.

[TA&O No. 8365, para. B.15.k.]

- xiii. The Permittee shall retain records and supporting documentation required by TA&O No. 8365 for a minimum of five years, commencing on the date such records were created. Respondents shall provide the records specified above to the commissioner within 30 days of receipt of a written request from the commissioner. All records shall be maintained in accordance with RCSA §§22a-174-4 and 22a-174-22e.

[TA&O No. 8365, para. B.16]

*d. Reporting Requirements* [TA&O No. 8365, para. B.17]

No later than March 1 of every year after issuance of TA&O No. 8365, the Permittee shall submit to the commissioner a written report containing copies of all of the records required pursuant to Paragraphs B.15.a. – B.15.g, B.15.j, and B.15.k of TA&O No. 8365. Not later than July 30 of each calendar year, the Permittee shall submit a written report containing copies of all records required pursuant to Paragraphs B.15.h. and B.15.i. of TA&O No. 8365. The commissioner may prescribe the forms to be used for the submission of these reports. The Permittee shall submit these reports on such forms, if prescribed by the commissioner.

#### **2a. EU-3 Case-by-Case NOx RACT Requirements [Consent Order No. 8377]**

*a. Limitation or Restriction*

- i. The Permittee shall install NOx emissions controls by May 1, 2020. Following the installation and tuning of the NOx emissions control system on EU-3, the Permittee shall operate the boiler in compliance with the applicable Phase 2 emissions limits specified in RCSA §22a-174-22e(d)(2)(C). (see Section III.A.1.a.ii of this Title V permit) [CO No. 8377, para C.4]
- ii. Optimization of NOx Emission Controls. After initial start-up following the installation of NOx emissions controls, the commissioner will allow the Permittee to operate EU-3 for a period of 240 run hours combusting No. 6 oil to tune the boiler, optimize controls and meet the Phase 2 emissions limits specified in RCSA §22a-174-22e(d)(2)(C). [CO No. 8377, para. C.5]
- iii. Baseline Emissions Analysis. If the commissioner requires that any boiler operate without NOx controls during a stack test, the data collected during the no-control test runs shall not be used to determine compliance with the emissions limits specified in RCSA §22a-174-22e(d)(2)(C). The Permittee shall include such emissions when calculating and recording monthly and consecutive 12-month NOx emissions. [CO No. 8377, para. C.6]
- iv. If the Permittee exceeds the RCSA §22a-174-22e(d)(2)(C) emissions limits found in Sections III.A.1.a.ii. and iii. of this Title V permit during the NOx RACT Phase 1 period, the Permittee shall retire DERCs in accordance with TA&O No. 8365, with the additional stipulation that the Phase 2 emissions limits specified in RCSA §22a-174-22e(d)(2)(C) will be used for DERC retirement calculations. [CO No. 8377, para. C.7]
- v. Notwithstanding Sections III.2a.a.i through iv. of this Title V permit, during the Phase 1 period when the Independent Systems Operator of New England (ISO-NE) declares and actual deficiency of operating reserves requiring implementation of Actions 4, 5, 6, 7, 8 or 9 of Operating Procedure No. 4 – Actions

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During a Capacity Deficiency (OP-4) or an emergency under Operating Procedure No. 7 – Actions in an Emergency (OP-7) and ISO-NE dispatches EU-3, the Permittee may, for the dispatch of EU-3, comply with CO No. 8377 by retiring DERC's in accordance with TA&O No. 8365, with the additional stipulations that the Permittee use the Phase 2 emissions limits specified in RCSA §22a-174-22e(d)(2)(C) in the DERC retirement calculations and retire twice the number of DERC's as required under TA&O No. 8365. The Permittee shall operate available NOx emissions controls during such operations except during periods of startup and shutdown. [CO No. 8377, para. C.8]

- vi. The Permittee shall notify the commissioner, in writing, of the dates of commencement of construction, completion of construction, and initial startup of the urea injection and combustion modification equipment, as applicable, no later than 30 days after the subject event. [CO No. 8377, para. C.9]
- vii. The Permittee shall retire prior to use all DERCs generated on and after January 1, 2020 by EU-3 pursuant to TA&O No. 8365 and shall deduct such DERCs from any calculations of DERCs available and possessed by the Permittee in lieu of retiring ten (10) percent of all DERC's generated by EU-3 as required by Paragraph B.11 of TA&O No. 8365. [CO No. 8377, para. C.13]

#### b. Recordkeeping and Reporting

- i. The Permittee shall by the close of each calendar day record the actual 24-hour average NOx emission rate, the actual fuel type and the actual quantity of each type of fuel in units of volume per day or MMBtu per day for each fuels sued on the preceding day. [CO No. 8377, para. C.10.b]
- ii. The Permittee shall provide the records required by Section III.2a.b.i. of this Title V permit to the commissioner within thirty (30) days of receipt of a written request from the commissioner.  
[CO No. 8377, para. C.10.e]
- iii. No later than March 1 of every year, the Permittee shall submit to the commissioner a written report containing copies of all records required by Section III.2a.b.i. of this Title V permit.  
[CO No. 8377, para. C.10.f]

### 3. CAIR NOx Ozone Season Trading Program

Grouped Emissions Unit 1 (GEU1) is comprised of CAIR NOx Ozone season units and therefore subject to RCSA §22a-174-22c. The units shall comply with all applicable requirements stated in RCSA §22a-174-22c and the standard requirements of the CAIR permit application.

### 4. Particulate Matter Emissions (PM)

#### a. Limitation or Restriction

- i. 0.14 lb/MMBtu No. 6 Oil [RCSA §22a-174-18(e)(2)(A) (GEU-1); P104-0003 (EU-3)]
- ii. 0.12 lb/MMBtu when operating on ULSD [RCSA §22a-174-18(e)(2)(B) (GEU-1); P104-0003 (EU-3)]
- iii. 0.10 lb/MMBtu when operating on natural gas (**EU-1 and EU-2 only**)  
[RCSA §22a-174-18(e)(2)(C)]

#### b. Monitoring Requirements

Record keeping specified in Section III.A.4.c of this Title V permit shall be sufficient to meet other Monitoring and Testing Requirements pursuant to RCSA §22a-174-33. [RCSA §22a-174-33(j)(1)(K)(ii)]

#### c. Record Keeping Requirements [RCSA §22a-174-33(j)(1)(K)(ii)]

The Permittee shall maintain records sufficient to determine compliance with the limitation or restriction in Section III.A.4.a. of this Title V permit.

[RCSA §22a-174-33(j)(1)(K)]

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#### d. Reporting Requirements

The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

#### 4a. Compliance Assurance Monitoring (CAM) Plan for EU-1 (Unit No. 2) and EU-2 (Unit No. 3) only Hamon Research Cottrell Electrostatic Precipitator (ESP) Monitoring

##### a. CAM Plan Justification

EU-1 and EU-2 are subject to CAM since the potential uncontrolled particulate matter (PM) emissions exceed major source threshold and are subject to an emissions limitation or standard which is not otherwise exempt under 40 CFR §64.2(b)(1).

An ESP Performance Model using actual stack test data, opacity, and secondary voltage was used to estimate actual PM emission across all modes of operation.

The justification for using secondary kilowatts to the ESP as an indicator is based on the principle that adequate power must be applied to the ESP in order to develop the electrically charged field that collects PM as the exhaust gas passes through the various electrical fields. As power fluctuates from moderate to high levels the relationship between power and performance becomes relatively "flat".

Unit No. 2 and No. 3 were last tested for PM on July 20, 2006 and October 3, 2001, respectively, while firing No. 6 oil to demonstrate compliance with the PM limit. Compliance was demonstrated well below the PM limit for both No. 6 oil and natural gas. These tests along with the engineering assessment, conducted as required by 40 CFR §64.4(d)(2), are used to demonstrate that operation of the ESP is not required to meet the PM while firing natural gas. The breakpoint on the PM efficiency curve while firing natural gas on Unit No. 2 and Unit No. 3 therefore is zero because the ESP is not being operated in order to achieve the PM emission limit, but rather to reduce accumulations of debris, including rust from the ESP that would be exhausted through the stack upon the next startup of the boiler.

When firing No. 6 oil the breakpoint below which the ESP becomes inefficient for Unit No. 2 is 28 kW and 19 kW of total secondary power for Unit No. 3. Therefore the total secondary power delivered to the ESP will be monitored to maintain these power levels while firing No. 6 oil, except during periods of startup and shutdown to ensure compliance with the PM limit. Startup is defined as the period of time between boiler light-off and the online connection to the electrical grid. Shutdown is defined as the period beginning when the unit is disconnected from the electrical grid to the extinguishment of fires in the boiler.

The justification for using opacity COMS data as an indicator of PM compliance is based on the assumption that as opacity increases PM emissions are also increasing. However, the relationship between increasing opacity and PM emissions does not necessarily result in an absolute quantifiable PM emissions rate. Opacity can still be used as an indicator of PM emissions and serve as a warning that additional action may be required. The correlation data between opacity and PM emission rates using the ESP Performance Model clearly shows if the boilers were to emit at the regulatory PM limit of 0.14 lb/MMBtu, the corresponding opacity would exceed the regulatory opacity limits in the range of 2-4 times the allowable. Historical steady state opacity for these units is usually significantly less than the regulatory limit. Therefore using an opacity operational limit of 50% of the regulatory limit as a CAM excursion will provide reasonable confidence of PM compliance and will also require the Permittee to check the secondary power levels to the transformer-rectifier (TR) Sets.

##### b. CAM Indicator(s)

i. An excursion is defined as the following:

(A) When total secondary kilowatts falls below 28 kW for Unit No. 2 ESP TR Sets; or

(B) When total secondary kilowatts falls below 19 kW for Unit No. 3 ESP TR Sets; or

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- (C) Greater than 10% opacity during any one hour block.
- ii. When there is an excursion, the Permittee shall:
  - (A) Make a record that there is a problem;
  - (B) Investigate cause of the excursion;
  - (C) Take corrective action; and
  - (D) Take preventative action.
- iii. Quality Assurance and Quality Control (QA/QC)

In addition to the monitoring of the indicators, the Permittee shall conduct the following activities to assure compliance:

- (A) TR readings will be recorded when the system is operating under conditions described in this CAM Plan. The Permittee will compare the recorded data with past data under similar operating conditions, looking for changes that signal developing problems with the ESP.
- (B) An annual inspection during the maintenance outage of the ESP will be conducted to assess the general overall condition. The inspection will include visual assessment of the condition of the guards, wires and plates, particulate deposits on the discharge and collecting electrodes, rapper rod insulators, support bushing insulators, lower stabilizer insulators, gas distribution plates, hopper trough, ash clinkers, access doors, shell seams, and alignment between collecting plates and discharge electrodes to assure that each component is in good physical condition and operating properly. These records will be useful in identifying possible patterns of repetitive component failures and will be the basis for future outage inspections.
- (C) In the event that the annual ESP inspections cannot be conducted on the scheduled date due to plant operations, the Permittee shall conduct the inspections within 30 calendar days after the date the unit is released for shutdown by ISO-NE.

#### *c. Monitoring Requirements*

The Permittee shall monitor the following:

- i. Total secondary power to the ESP system at least once per eight hour shift while firing No. 6 oil or when opacity, during any 1-hour block average, exceeds 10% when the unit is connected to the electrical grid:
  - (A) Total secondary voltage and amperage from all TR sets combined;
  - (B) Gross electrical load in MW; and
- ii. Opacity using the COMS.

#### *d. Record Keeping Requirements*

The Permittee shall make and keep the following records:

- i. The total secondary voltage and amperage from all TR sets combined;
- ii. Gross Electrical load in MW;
- iii. Outage inspections of ESP functional operation;
- iv. Annual inspection of overall ESP condition;
- v. Opacity data shall be collected electronically and maintained on the data acquisition system on a continuous basis, reduced to six-minute and one-minute block averages;
- vi. Daily COMS calibration; and

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vii. Quarterly COMS audit and recalibration.

e. *Reporting*

Semi-annually, as part of the semi-annual monitoring report and/or compliance certification, the Permittee shall submit a report of date, duration, cause and corrective action of any excursions.

#### 5. Opacity

a. *Limitation or Restriction*

- i. GEU-1 shall comply with Consent Order No. 1888 at all times.
- ii. Except as provided in RCSA §22a-174-18(j), visible emission of no greater than 20% for any six-minute block and no greater than 40% for any one-minute block. [RCSA §22a-174-18(b)(2); Consent Order No. 1888; P104-0003 (EU-3)]
- iii. The Permittee shall implement the corrective actions approved by the commissioner according to the schedule approved by the commissioner. [Consent Order 1888, Section B.5]

**(EU-1 and EU-3 only)**

b. *Monitoring Requirements*

The Permittee shall operate and maintain a continuous opacity monitoring system (COMS), for each unit, in accordance with the regulations. [RCSA §22a-174-4(b); Consent Order No. 1888]

c. *Record Keeping Requirements*

- i. The Permittee shall make and keep records of the dates and times of all opacity exceedances including the operating conditions at the time of the exceedance using the COMS.  
[RCSA §22a-174-4(d)(4)]
- ii. The Permittee shall make and keep records required to demonstrate compliance with Consent Order No. 1888.

d. *Reporting Requirements*

- i. The Permittee shall submit all required reports in accordance with Consent Order No. 1888.
- ii. The Permittee shall submit a report each calendar quarter with the following information:  
[RCSA §22a-174-18(d)(4)]
  - (A) The data obtained through such equipment during the preceding calendar quarter that is required to determine compliance with an emission limitation or standard;
  - (B) A summary of such data;
  - (C) A copy of the quality assurance audit conducted for that calendar quarter; and
  - (D) A summary of all corrective actions taken in response to a failed CEM equipment audit.
- iii. The Permittee shall notify the commissioner, in writing, within seven days of the discovery of factors that may or will delay the completion of specific tasks set forth in the approved corrective actions. Such notice shall contain a detailed explanation of the reason(s) for the delay and an amended schedule for the implementation of the remaining tasks. [Consent Order No. 1888, Section B.6]
- iv. On or before the fifteenth day of the month immediately following the close of each calendar quarter, the Permittee shall submit a progress report to the commissioner describing the actions that the Permittee has taken to date to comply with this consent order. Such report shall include, at least, the following:

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- (A) A list of approved corrective actions completed during the quarter; and
- (B) A list of any other actions performed during the quarter for the purpose of reducing the frequency of the occurrence of visible emissions that exceed the standards of RCSA §22a-174-18(b)(2). [Consent Order No. 1888, Section B.7]

#### 6. SO<sub>2</sub>: RCSA §22a-174-19a

##### a. *Limitation or Restriction* [RCSA §22a-174-19a(e); [P104-0003 (EU-3)]]

###### i. The Permittee shall:

- (A) Combust liquid fuel, gaseous fuel or a combination of each provided that each fuel possess a fuel sulfur limit equal to or less than 0.3% sulfur, by weight (dry basis);
- (B) Meet an average emission rate of equal to or less than 0.33 pounds SO<sub>2</sub> per MMBtu for each calendar quarter for an affected unit at the premises; or
- (C) Meet an average emission rate of equal to or less than 0.3 pounds SO<sub>2</sub> per MMBtu calculated for each calendar quarter, if such owner or operator averages the emissions from two or more affected units at the premises.

##### b. *Monitoring Requirements* [RCSA §22a-174-19a(i)]

The Permittee shall maintain and operate CEM to monitor SO<sub>2</sub> emissions from each unit.

##### c. *Record Keeping Requirements* [RCSA §22a-174-33(j)(1)(K)(ii)]

- i. The Permittee shall obtain a fuel certification from the fuel supplier certifying the type of fuel and the weight percent of sulfur in the fuel (dry basis).

[RCSA §22a-174-33(j)(1)(K)(ii)]

- ii. The Permittee shall make and keep records that demonstrate the fuel sulfur content of each shipment of fuel received.

[RCSA §22a-174-19a(i)(1)(A)]

- iii. If fuel with sulfur content above any applicable limit is blended at the premises for combustion in an affected unit or units, the Permittee shall make and keep daily records demonstrating that all fuel combusted at the affected unit or units meets the applicable fuel sulfur limits of RCSA §22a-174-19a(e)(1). Fuel sulfur analysis shall be conducted in accordance with the American Society for Testing and Material (ASTM) test method D4294 and automatic sampling equipment shall conform to ASTM test method D4177-82. [RCSA §22a-174-19a(i)(1)(B)]

- iv. The Permittee shall make and keep records of hourly SO<sub>2</sub> emission rate values, as lb/MMBtu heat input, determined from data measured by a CEM in accordance with the applicable provisions of 40 CFR Part 75 and shall determine the averages consistent with Part III.A.6.a of this Title V permit.

##### d. *Reporting Requirements*

The Permittee shall, as part of any compliance certification pursuant to RCSA §22a-174-33(q)(2) certify in writing to the commissioner compliance with the applicable provisions of such section. Such certification shall include actual quarterly SO<sub>2</sub> emissions in tons and either average quarterly fuel sulfur content or average quarterly emission rate, whichever is applicable, for each affected unit.

[RCSA §22a-174-19a(j)(1)]

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#### 7. National Emission Standards (NESHAP) for Hazardous Air Pollutants: Coal and Oil Fired Electric Utility Steam Generating Units, 40 CFR Part 63 Subpart UUUUU

##### a. Limitation or Restriction

- i. The Permittee shall comply with the applicable emission limitations, work practice standards, and operating limits in 40 CFR §63.9991 and 40 CFR §63.10021.
- ii. The Permittee shall comply with the applicable requirements in 40 CFR §63.10000.
- iii. The Permittee shall comply with the applicable requirements of the General Provisions, 40 CFR Part 63, Subpart A. [40 CFR §63.10040]

##### b. Monitoring Requirements

The Permittee shall comply with the applicable *requirements* in 40 CFR §63.10010.

##### c. Record Keeping Requirements

- i. The Permittee shall keep applicable records pursuant to 40 CFR §63.10032.
- ii. The Permittee shall keep sufficient records of the type(s) and amount(s) of fuel use in each calendar quarter to document the capacity factor for each unit. [RCSA §22a-174-33(j)(1)(K)(ii)]

##### d. Reporting Requirements

The Permittee shall submit all required reports pursuant to 40 CFR §63.10030 and 40 CFR §63.10031.

#### 8. Hazardous Air Pollutants (State Only Requirement)

##### a. Limitation or Restriction

GEU-1 shall not cause and exceedance of the Maximum Allowable Stack Concentration (MASC) for any Hazardous Air Pollutant (HAP), as applicable. [RCSA §22a-174-29 ; P104-0003]

##### b. Monitoring Requirements

Record keeping specified in Section III.A.8.c of this Title V permit shall be sufficient to meet other Monitoring Requirements pursuant to RCSA §22a-174-33.

[RCSA §22a-174-33(j)(1)(K)(ii)]

##### c. Record Keeping Requirements

The Permittee shall maintain records sufficient to determine compliance with the limitation or restriction in Section III.A.8.a of this Title V permit. [RCSA §22a-174-33(j)(1)(K)]

##### d. Reporting Requirements

The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

#### 9. EU-3 Specific Requirements [P104-0003]

##### a. Limitation or Restriction

- i. No. 6 Fuel Oil and ULSD (ignition only)
  - (A) Maximum Fuel Firing Rate (gal/hr): 31,864
  - (B) Maximum Fuel Consumption over any 12 Month Period (gal/yr):  $2.8 \times 10^8$
  - (C) Maximum Fuel Sulfur Content (% by weight, dry basis): 0.3

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- (D) Maximum Heat Input: 4,684
  - ii. Urea Injection (TBD; tentative installation 2022)
  - iii. The Permittee shall operate and maintain this equipment in accordance with the manufacturer's specifications and written recommendations.
- b. *Monitoring Requirements*
- i. The Permittee shall continuously monitor fuel consumption using a non-resettable totalizing fuel meter.
  - ii. The Permittee shall continuously monitor the urea injection rate (lb/hr or gal/hr), if applicable.
  - iii. The Permittee shall continuously monitor SO<sub>2</sub>, NO<sub>x</sub>, and CO<sub>2</sub> using CEM.
  - iv. Stack Emission Test Requirements
    - (A) Stack testing shall be required for the following pollutants: PM<sub>10</sub>, PM<sub>2.5</sub>, CO, and Ammonia
      - (1) Emissions testing for CO shall be required within 240 operating hours of the initial startup of the combustion modification equipment.
      - (2) The Permittee shall conduct emissions testing for PM<sub>10</sub>, PM<sub>2.5</sub>, and ammonia with and without the urea injection in operation (if applicable). Emissions testing shall be conducted within 240 operating hours on No. 6 Fuel Oil. Such testing timeframe shall begin with the initial startup of the urea injection control system.
    - (B) Recurrent testing for the above pollutants shall be conducted within five years from the date of the previous test.
    - (C) Stack test results shall be reported as follows: all pollutants in lb/MMBtu
  - v. Record keeping specified in Section III.A.9.c of this Title V permit shall be sufficient to meet other Monitoring Requirements pursuant to RCSA §22a-174-33. [RCSA §22a-174-33(j)(1)(K)(ii)]
- c. *Record Keeping Requirements* [P104-0002]
- i. The Permittee shall keep records of monthly and consecutive 12 month fuel consumption, for each fuel. The consecutive 12 month fuel consumption shall be determined by adding (for each fuel) the current month's fuel consumption to that of the previous 11 months. The Permittee shall make these calculations within 30 days of the end of the previous month.
  - ii. The Permittee shall keep records of the fuel certification for each delivery of fuel oil from a bulk petroleum provider or a copy of the current contract with the fuel supplier supplying the fuel used by this equipment that includes the applicable sulfur content of the fuel as a condition of each shipment. The shipping receipt or contract shall include the date of delivery, the name of the fuel supplier, type of fuel delivered, the percentage of sulfur in such fuel, by weight, dry basis, and the method used to determine the sulfur content of such fuel.
  - iii. The Permittee shall continuously record urea injection rate, if applicable.
  - iv. The Permittee shall records of each delivery of urea. The records shall include:
    - (A) the date of delivery;
    - (B) the name of the supplier;
      - (1) the quantity of aqueous ammonia delivered; and
      - (2) the percentage of ammonia in solution, by weight.
  - v. The Permittee shall calculate and record the monthly and consecutive 12 month PM, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, VOC, CO and Ammonia emissions in tons. The consecutive 12 month emissions shall be



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determined by adding (for each pollutant) the current month's emissions to that of the previous 11 months. Such records shall include a sample calculation for each pollutant. The Permittee shall make these calculations within 30 days of the end of the previous month.

(A) Demonstration of compliance may be met by using emission factors from the following sources:

- (1) All Particulate, Ammonia: Latest Approved Stack Test
- (2) NO<sub>x</sub>, SO<sub>2</sub>, CO<sub>2</sub>: The Permittee shall comply with the CEM requirements as set forth in RCSA §22a-174-4. CEM shall be enforced on the following basis:
  - (a) NO<sub>x</sub>: As required by RCSA §22a-174-22e(m)
  - (b) SO<sub>2</sub>: 3 hour rolling; calendar quarter
  - (c) CO<sub>2</sub>: 1 hour block

v. The Permittee shall maintain records sufficient to determine compliance with the limitation or restriction in Section III.A.9.a of this Title V permit. [RCSA §22a-174-33(j)(1)(K)]

#### d. Reporting Requirements

- i. The Permittee shall notify the commissioner, in writing, of the dates of commencement of construction, completion of construction, and initial startup of the urea injection and combustion modification equipment no later than 30 days after each subject event.
- ii. No later than March 1 of each year the Permittee shall submit a written report of the actual annual emissions of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, VOC, CO, Pb, and ammonia for the prior calendar year compared to the 2-year baseline average emissions, immediately preceding the installation of the urea injection and/or combustion modification equipment, on an annual basis for five years after the installation of such controls. Such report shall be submitted to Office of Director, Engineering, Bureau of Air Management, Department of Energy and Environmental Protection, 79 Elm Street, 5<sup>th</sup> Floor, Hartford, CT 06106-5127.
- iii. The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

### 10. Baseline Annual Emissions Analysis for EU-2 and EU-3 only

#### a. Limitation or Restriction

- i. The Permittee shall not exceed a significant emissions increase for any pollutant subject to regulation under the CAA, for a period of five years after EU-2 (Unit 3) resumes normal operation, after the installation of the over-fire air system, except as provided in 40 CFR §§51.165(a)(1)(v)(A) and 51.165(a)(1)(xxi).
- ii. The Permittee shall not exceed a significant emissions increase for any pollutant subject to regulation under the CAA, for a period of five years after EU-3 (Unit 4) resumes normal operation, after the installation of the Combustion Modification and/or Urea Injection System, except as provided in 40 CFR §§51.165(a)(1)(v)(A) and 51.165(a)(1)(xxi). [P104-0003]

#### b. Monitoring and Testing Requirements

- i. The Permittee shall conduct emissions testing on EU-2 for PM<sub>2.5</sub>, PM<sub>10</sub>, and ammonia, with and without the SNCR in operation for natural gas and No. 6 Oil. Emissions testing shall be conducted for each fuel within 240 operating hours on such fuel. Such testing timeframe shall begin from the issuance of this revised permit. (Application No. 202008146)

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[RCSA §22a-174-33(j)(1)(K)(ii)]

- ii. The Permittee shall conduct emissions testing on EU-3 in accordance with Section III.A.10.b.iv of this modified permit.

[RCSA §22a-174-33(j)(1)(K)(ii)]

#### c. Record Keeping Requirements

The Permittee shall calculate and record the monthly and consecutive 12 month PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, VOC, CO, Pb, and ammonia emissions in units of tons for each unit of EU-2 and EU-3. The consecutive 12 month emissions shall be determined by adding the current month's emissions to that of the previous 11 months. Such records shall include a sample calculation. The Permittee shall make these calculations within 30 days of the end of the previous month. [RCSA §22a-174-33(j)(1)(K)]

#### d. Reporting Requirements

- i. The Permittee shall notify the commissioner, in writing, of the dates of commencement of construction, completion of construction, and initial startup of the urea injection and combustion modification equipment no later than 30 days after the subject event.

[RCSA §22a-174-33(j)(1)(X)]

- ii. No later than March 1 of each year the Permittee shall submit a written report of the actual annual emissions of PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, VOC, CO, Pb, and ammonia for the prior calendar year compared to the 2-year baseline average emissions, immediately preceding the installation of the urea injection and/or combustion modification equipment, on an annual basis for five (5) years after the installation of the control systems for EU-2 and EU-3. Such report shall be submitted to Office of Director, Engineering, Bureau of Air Management, Department of Energy and Environmental Protection, 79 Elm Street, 5<sup>th</sup> Floor, Hartford, CT 06106-5127 [40 CFR §51.165(a)(1)(xii)(E)]

### **B. EMISSIONS UNIT 4A (EU-4): Babcock and Wilcox ULSD and natural gas fired auxiliary steam boiler; Permit No. 104-0002; NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR Part 63 Subpart DDDDD. The boiler is operated under the *light liquid* subcategory with an oxygen trim system to maintain the air-to-fuel ratio in accordance with 40 CFR Part 63 Subpart DDDDD; Installed March 1982**

#### **1. Allowable Fuel Use**

##### a. Limitation or Restriction [P104-0002]

- i. ULSD
  - (A) 873 gallons/hour, daily block average
  - (B) Maximum Fuel Consumption over any 12 Month Period: 3,874,374 gallons
  - (C) Maximum Sulfur Content: 0.0015%, by weight
  - (D) Maximum Heat Input: 117 MMBtu/hr, based on HHV of 134,000 Btu/gal (daily block average)
- ii. Natural Gas
  - (A) 90,196 ft<sup>3</sup>/hour
  - (B) Maximum Fuel Consumption over any 12 Month Period: 790,116,960 cubic feet
  - (C) Maximum Heat Input: 92 MMBtu/hr, daily block average

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*b. Monitoring Requirements* [P104-0002]

For each fuel, the Permittee shall continuously monitor fuel consumption using a totalizing fuel meter and a daily block average.

*c. Record Keeping Requirements* [P104-0002]

- i. The Permittee shall keep records of monthly and consecutive 12 month fuel consumption, for each fuel. The consecutive 12 month fuel consumption shall be determined by adding (for each fuel) the current month's fuel consumption to that of the previous 11 months. The Permittee shall make these calculations within 30 days of the end of the previous month.
- ii. The Permittee shall keep records of the fuel certification for each delivery of fuel oil from a bulk petroleum provider or a copy of the current contract with the fuel supplier supplying the fuel used by this equipment that includes the applicable sulfur content of the fuel as a condition of each shipment. The shipping receipt or contract shall include the date of delivery, the name of the fuel supplier, type of fuel delivered, the percentage of sulfur in such fuel, by weight, dry basis, and the method used to determine the sulfur content of such fuel.
- iii. The Permittee shall keep records of the fuel flow rate using a daily block average.

*d. Reporting Requirements*

The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

## 2. Pollutant Emissions

*a. Limitation or Restriction* [P104-0002]

- i. The Permittee shall not exceed the following ULSD emission limits (lb/MMBtu):
  - (A) PM<sub>10</sub>: 0.025
  - (B) PM<sub>2.5</sub>: 0.025
  - (C) SO<sub>2</sub>: 1.6 E-03
  - (D) NO<sub>x</sub>:
    - (1) NO<sub>x</sub>: 0.15 lb/MMBtu (Daily Block Average)
    - (2) On and After June 1, 2023
      - (a) 0.15 lb/MMBtu (Daily Block Average)
- ii. The Permittee shall not exceed the following Natural Gas emission limits (lb/MMBtu):
  - (A) PM<sub>10</sub>: 7.4 E-03
  - (B) PM<sub>2.5</sub>: 7.4 E-03
  - (C) SO<sub>2</sub>: 5.4 E-04

[RCSA §22a-174-22e(d)(3)(C)]

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- (D) NO<sub>x</sub>:
    - (1) NO<sub>x</sub>: 0.10 lb/MMBtu (Daily Block Average)
    - (2) On and After June 1, 2023
      - (a) 0.05 lb/MMBtu (Daily Block Average)  
[RCSA §22a-174-22e(d)(3)(C)]
  - (E) VOC: 5.3 E-03
  - (F) CO: 8.1 E-02
- iii. The Permittee shall not exceed the following ULSD annual emission limits (tpy)
- (A) PM<sub>10</sub>: 6.4
  - (B) PM<sub>2.5</sub>: 6.4
  - (C) SO<sub>2</sub>: 0.4
  - (D) NO<sub>x</sub>: 38.9
  - (E) VOC: 2.2
  - (F) CO: 16.6
  - (G) Pb: 2.33 E-03
- iv. The Permittee shall not exceed the following Natural Gas annual emission limits (tpy):
- (A) PM<sub>10</sub>: 3.0
  - (B) PM<sub>2.5</sub>: 3.0
  - (C) SO<sub>2</sub>: 0.24
  - (D) NO<sub>x</sub>: 40.3
  - (E) VOC: 2.2
  - (F) CO: 33.2
- v. The Permittee shall not exceed the Maximum Worst Case annual emissions (tpy):
- (A) PM<sub>10</sub>: 7.9
  - (B) PM<sub>2.5</sub>: 7.9
  - (C) SO<sub>2</sub>: 0.51
  - (D) NO<sub>x</sub>: 58.8
  - (E) VOC: 3.3
  - (F) CO: 33.2
  - (G) Pb: 2.33 E-03
- b. *Monitoring Requirements* [P104-0002]
- i. The Permittee shall calculate emissions from the following sources:
    - (A) PM<sub>2.5/10</sub>, VOC: Manufacturer's data, AP-42 or other appropriate emissions factor
    - (B) NO<sub>x</sub>, CO: Most recent stack test data

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- (1) Recurrent stack testing for NO<sub>x</sub> shall be conducted within five years from the date of the previous stack test. Stack test results shall be in units of lb/hr and lb/MMBtu.
- (2) The Permittee shall conduct NO<sub>x</sub> emission testing in accordance with RCSA §22a-174-22e(k)(1) and RCSA §22a-174-22e(l)(1).
- (3) The Permittee shall comply with the applicable monitoring requirements pursuant to RCSA §22a-174-22e.
- (4) Record keeping specified in Section III.B.2.c. of this Title V permit shall be sufficient to meet other Monitoring and Testing Requirements pursuant to RCSA §22a-174-33.  
[RCSA §22a-174-33(j)(1)(K)(ii)]

(C) SO<sub>2</sub>: Fuel sulfur content based on a HHV of 134,000 Btu/gal

*c. Record Keeping Requirements* [P104-0002]

- i. The Permittee shall calculate and record the monthly and consecutive 12 month PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, VOC, CO, and Lead emissions in units of tons. The consecutive 12 month emissions shall be determined by adding (for each pollutant) the current month's emissions to that of the previous 11 months. Such records shall include a sample calculation for each pollutant. The Permittee shall make these calculations within 30 days of the end of the previous month.
- ii. The Permittee shall comply with the applicable record keeping requirements specified in RCSA §22a-174-22e(j) for NO<sub>x</sub> emissions.

*d. Reporting Requirements*

- i. The Permittee shall comply with the applicable reporting requirements specified in RCSA §22a-174-22e(k) for NO<sub>x</sub> emissions.
- ii. For all other pollutants, the Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

### 3. Opacity

*a. Limitation or Restriction*

- i. Except as provided in RCSA §22a-174-18(j):
  - (A) Visible emissions of no greater than 20% opacity during any six-minute block average as measured by 40 CFR Part 60, Appendix A, Reference Method 9; or  
[P104-0002]
  - (B) Forty percent (40%) opacity during any one-minute block average.  
[RCSA §22a-174-18(b)(2)(B)]

*b. Monitoring Requirements* [P104-0002]

- i. The Permittee shall continuously monitor the opacity using COMS.
- ii. The Permittee shall comply with the COM requirements as set forth in RCSA §22a-174-4.

*c. Record Keeping Requirements*

The Permittee shall keep records of opacity. Records shall include the dates and times of all opacity exceedance and the operating conditions at the time of the exceedance. [P104-0002]

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*d. Reporting Requirements*

The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

**4. Hazardous Air Pollutants (STATE ONLY REQUIREMENT)**

*a. Limitation or Restriction*

This equipment shall not cause an exceedance of the MASC for any hazardous air pollutant (HAP) emitted and listed in RCSA §22a-174-29. [P104-0002]

*b. Monitoring Requirements*

Record keeping specified in Section III.B.4.c of this Title V permit shall be sufficient to meet other Monitoring Requirements pursuant to RCSA §22a-174-33.

[RCSA §22a-174-33(j)(1)(K)(ii)]

*c. Record Keeping Requirements*

The Permittee shall maintain records sufficient to determine compliance with the limitation or restriction in Section III.B.4.a of this Title V permit. [RCSA §22a-174-33(j)(1)(K)]

*d. Reporting Requirements*

The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

**5. Operation and Maintenance Requirements**

*a. Limitation or Restriction* [P104-0002]

- i. The Permittee shall operate and maintain this equipment in accordance with the manufacturer's specifications and written recommendations.
- ii. The Permittee shall perform inspections of the control devices as recommended by the manufacturer.
- iii. The Permittee shall properly operate the control equipment at all times that this equipment is in operation and emitting air pollutants.

*b. Monitoring Requirements*

Record keeping specified in Section III.B.5.c of this Title V permit shall be sufficient to meet other Monitoring Requirements pursuant to RCSA §22a-174-33.

[RCSA §22a-174-33(j)(1)(K)(ii)]

*c. Record Keeping Requirements* [P104-0002]

- i. The Permittee shall make and keep records of all maintenance activities performed on combustion or pollution control components, to include the following:
  - (A) The date of the maintenance activity;
  - (B) The reason for the maintenance; and
  - (C) Documentation that the replacement parts do not result in an increase in emissions, the emissions of any new pollutants, or an increase in unit capacity.

*d. Reporting Requirements*

The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of

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receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

#### 6. National Emission Standards (NESHAP) for Hazardous Air Pollutants: Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR Part 63 Subpart DDDDD

##### a. Limitation or Restriction

- i. The Permittee shall comply with the applicable requirements found in the General Provisions, 40 CFR §§63.1 through 15. [40 CFR §63.7565]
- ii. The Permittee shall comply with the applicable emission limits, work practice standards, and operating limits pursuant to 40 CFR §63.7505(a).
- iii. The Permittee shall develop a site-specific monitoring plan according to the requirements in 40 CFR §63.7505(d).
- iv. The Permittee shall comply with the tune-up requirements found in 40 CFR §63.7540(a)(12).  
[40 CFR §63.7500(e)]
- v. The Permittee shall maintain the 30-day rolling average operating load such that it does not exceed 110 percent of the highest hourly average operating load recorded during the performance test.  
[40 CFR §63.7540(a)(1), Table 4, Item No. 7]
- vi. The Permittee shall operate the oxygen trim system with the oxygen level set no lower than the lowest hourly average oxygen concentration measured during the most recent CO performance test as the operating limit for oxygen according to 40 CFR Part 63 Subpart DDDDD, Table 7.  
[40 CFR §63.7525(a)(7)]

##### b. Monitoring Requirements

- i. The Permittee shall comply with the applicable stack test requirements pursuant to 40 CFR §63.7515(a).
- ii. The Permittee shall conduct subsequent tune-ups no more than 61 months after the previous tune-up.  
[40 CFR §63.7515(d)]
- iii. The Permittee shall monitor the operating load or steam. [40 CFR §63.7540(a)]
- iv. The Permittee shall operate the oxygen trim system with the oxygen level. [40 CFR §63.7525(a)]
- v. The Permittee shall comply with the applicable requirements pursuant to 40 CFR §63.7535.
- vi. The Permittee shall monitor the type of fuel combusted on a monthly basis pursuant to 40 CFR §63.7515(h).

##### c. Record Keeping Requirements

- i. The Permittee shall keep all applicable records in accordance with 40 CFR §§63.7555(a) through (h).
- ii. The Permittee shall reduce load data to 30-day rolling averages.  
[40 CFR §63.7540(a), Table 8, Item No. 10]
- iii. The Permittee shall keep records of the type of fuel combusted on a monthly basis pursuant to 40 CFR §63.7515(h).

##### d. Reporting Requirements

- i. The Permittee shall comply with the notification requirements in accordance with 40 CFR §§63.7545(f) and (h).

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- ii. The Permittee shall submit all applicable reports pursuant to 40 CFR §63.7540(b).
- iii. The Permittee shall submit all applicable compliance reports pursuant to 40 CFR §63.7550(c).
- iv. The Permittee shall submit all applicable reports pursuant to 40 CFR §63.7515(f).

#### 7. Compliance Assurance Monitoring (CAM) Plan for NOx emissions

##### a. CAM Plan Justification

EU-4A is subject to CAM since the potential uncontrolled NOx emissions exceed major source threshold, uses a control device, and is subject to an emissions limitation or standard which is not otherwise exempt under 40 CFR §64.2(b)(1).

This unit is also operated as a *light-liquid* subcategory unit pursuant to 40 CFR Part 63 Subpart DDDDD. As such, a minimum percent oxygen limit must be established to ensure compliance with the CO limit contained in this regulation.

The compliance testing determined that the minimum furnace excess oxygen concentration in the flue gas exhaust stack while firing natural gas is 4.4% and the minimum furnace excess oxygen while firing ULSD is 5.9%. The Reference method measures Oxygen (O<sub>2</sub>) in dry percent.

Using actual stack test data for fuel flow and furnace percent oxygen, a relationship was developed to estimate actual NOx emissions across all modes of operation.

EU-4 was last tested in December 2018 to establish both the minimum furnace excess oxygen concentration and fuel flow for both natural gas and ULSD firing. Operational curves were established that correlate to a minimum NOx emission rate for each fuel while firing ULSD fuel oil to demonstrate compliance with the PM limit. Compliance was demonstrated well below the NOx and CO limits for both natural gas and ULSD during the December 2018 emissions compliance demonstration test.

Fuel firing rate, furnace excess oxygen and wind box oxygen concentrations provide parametric indication of NOx (CAM) and CO (Subpart DDDDD) emissions and are inter-related to actual emissions of each pollutant.

NOx and CO are directly affected by the furnace excess oxygen concentration, which is matched to the fuel firing rate to ensure compliance with the applicable NOx and CO limits. Additional NOx and CO reductions are achieved by the wind box oxygen concentration which is programmed to operate on a curve between 17.0 and 22.0 percent. The induced flue gas recirculation damper (IFGR) is programmed to modulate between zero and 100 percent open to maintain the wind box oxygen range.

The fuel and air flows are controlled automatically by the boiler management system in response to steam flow demand. Programmed flow curves ensure that the air-to-fuel ratio is maintained within an operation range that is in compliance with the NOx and CO across the operating range of the boiler.

The furnace excess oxygen concentration is an indicator that ensures compliance with NOx and CO limits across the fuel firing range of the boiler.

##### b. Measurement Approach

- i. Fuel flow is monitored as an input to the boiler operating control system. ULSD and natural gas heat content are obtained from fuel analysis to calculate heat input.
- ii. Excess furnace oxygen and wind box oxygen concentrations necessary to ensure compliance with the NOx and CO limits are programmed into the boiler operating control system. Oxygen is continually measured by the excess furnace oxygen and wind box oxygen analyzers. These analyzer measurements are in wet O<sub>2</sub> percent



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#### c. CAM Indicators

- i. An excursion is defined as the following:
  - (A) When the fuel flow limit exceeds:
    - (1) 90,196 scfh (daily block average) while firing natural gas; or
    - (2) 873 gph (daily block average) while firing ULSD; and
  - (B) The minimum furnace excess oxygen concentration is less than:
    - (1) 4.4% while firing natural gas; or
    - (2) 5.9% while firing ULSD
    - (3) Reference O<sub>2</sub> is dry percent as measured in the flue gas exhaust stack.
  - (C) The wind box oxygen concentration is not maintained between:
    - (1) 17.0 – 22.0 percent oxygen for both oil and gas firing (3 hour block average)
- ii. When there is an excursion, the Permittee shall:
  - (A) Record the excursion;
  - (B) Investigate cause of the excursion;
  - (C) Take corrective action; and
  - (D) Take preventative action.
- iii. Quality Assurance and Quality Control (QA/QC)

In addition to the monitoring of the indicator parameters, the Permittee shall conduct the following activities to assure compliance:

  - (A) Five year calibration of ULSD flow meter, beginning with the initial calibration date (acceptance criteria:  $\pm 2\%$ ).
  - (B) Five year calibration of natural gas flow meter beginning with the initial calibration date (acceptance criteria;  $\pm 2\%$ ).
  - (C) Annual calibration of oxygen meter (acceptance criterial:  $\pm 0.5\%$ ).
  - (D) Data availability shall not be less than 90% of the quarterly operating time.

#### d. Monitoring Requirements

The Permittee shall monitor the following:

- i. Fuel Flow, furnace excess oxygen, and wind box oxygen are monitored continuously and logged on an hourly basis.
- ii. Fuel Flow, furnace excess oxygen, and wind box oxygen are logged on a continuous basis
  - (A) Fuel Flow: 24-hour daily block average
  - (B) Percent Oxygen: 1-hour average

#### e. Record Keeping Requirements

The Permittee shall record and maintain the following:

- i. The data acquisition system (DAS) records of the hourly and daily block average fuel flow.

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- iii. The DAS records of the furnace oxygen concentration on an hourly basis.
- iii. Inspections, excursions, and corrective actions

*f. Reporting*

Semi-annually, as part of the semi-annual monitoring report and/or compliance certification, the Permittee shall submit a report of date, duration, cause and corrective action of any excursions.

#### **C. EMISSIONS UNIT 5 (EU-5): Pratt & Whitney FT4A-8 20 MW Gas Turbine (Unit 10)**

**104-0102-R; TA&O No. 8366A; Consent Order No. 8377; RCSA §§22a-174-19a, 22c, 22e; Installed August 1966**

##### **1. Nitrogen Oxide (NOx)**

*a. Limitation or Restriction*

- i. Until May 31, 2023, the Permittee shall not exceed the following emissions limitations, unless allowed by alternate NOx compliance in Section III.C.2 of this Title V permit:
  - (A) Less than or equal to 75 ppmvd  
[RCSA §22a-174-22e(d)(4)(A)]
  - (B) Less than or equal to 50 ppmvd (5 month average) during the period from May 1 through September 30, inclusive  
[RCSA §22a-174-22e(d)(4)(B)]
  - (C) Less than or equal to 0.15 lb/MMBtu (7 month average) during the period October 1 through April 30, inclusive  
[RCSA §22a-174-22e(d)(4)(B)]
- ii. On and After June 1, 2023, the Permittee shall not exceed the following emissions limitation:
  - (A) Less than or equal to 0.67 lb/MMBtu [CO No. 8377, para. C.1, Table C.1]

*b. Monitoring Requirements*

- i. The Permittee shall conduct NOx emission tests of the unit at least once every five years from the date of the previous stack test. [RCSA § 22a-174-22e(l)]
- ii. Record keeping specified in Section III.C.1.c. of this Title V permit shall be sufficient to meet other Monitoring and Testing Requirements pursuant to RCSA §22a-174-33.  
[RCSA §22a-174-33(j)(l)(K)(ii)]

*c. Record Keeping Requirements*

The Permittee shall comply with the applicable record keeping requirements specified in RCSA § 22a-174-22e(j).

*d. Reporting Requirements*

The Permittee shall comply with the applicable reporting requirements specified in RCSA §22a-174-22e(k).

##### **2. Alternate NOx RACT Compliance: EU-5 shall comply with TA&O No. 8366A And Consent Order No. 8377 at all times.**

*a. Limitation or Restriction*

- i. The Permittee shall not combust more than 850,000 gallons of fuel during any consecutive 12 month

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period. [CO No. 8377, para. C.2.]

- ii. The Permittee may only use emissions trading, subject to the provisions of TA&O No. 8366A, until the date of the expiration of TA&O No. 8366A. The date of expiration of TA&O No. 8366A shall be the earlier of:  
[TA&O No. 8366A, para. B.1.]
  - (A) May 31, 2023;
  - (B) The date upon which the Permittee demonstrates to the commissioner's satisfaction that actual NO<sub>x</sub> emissions from the emission units, at all times, do not exceed the corresponding AEL;
  - (C) The date specified in any written notice from the commissioner stating that the Permittee is no longer allowed to use emissions trading due to the Permittees' violation of any provision of TA&O No. 8366A; or
  - (D) The date specified in any written notice from the commissioner, notifying the Permittee that the commissioner has determined the use of emissions trading as a compliance option has been further restricted, modified or nullified by:
    - (1) the promulgation of an Act, Statute, or Regulation; or
    - (2) the issuance of a judgment or court order.
- iii. The Permittee shall obtain and use sufficient DERCs in such a manner as to comply with Paragraphs B.7 through B.9 of TA&O No. 8366A. All DERCs used during the Ozone Season for each emissions unit described in Table 1 of TA&O No. 8366A, shall have been generated during an Ozone Season.  
[TA&O No. 8366A, para. B.2.]
- iv. Vintage Restriction. For the purposes of compliance with RCSA §22a-174-22e and the provisions of TA&O No. 8366A, DERCs shall only remain valid for five calendar years from the year of the generation of such DERCs. DERCs older than five calendar years from their creation are not valid for use for compliance with RCSA §22a-174-22e and the provisions of TA&O No. 8366A. Ozone Season DERCs generated by an Affected Unit during 2013 shall remain valid until December 31, 2018.  
[TA&O No. 8366A, para. B.3.]
- v. The Permittee shall not cause or allow actual NO<sub>x</sub> emissions from the operation of the emission units described in Table 1 of TA&O No. 8366A to exceed the corresponding FLERs. Compliance with the corresponding FLER specified in Table 1 shall be determined based on the results of emissions testing performed in accordance with RCSA §22a-174-22e(l) or based on NO<sub>x</sub> emissions monitored and recorded by a continuous emissions monitoring system that was approved by the Commissioner and that complies with RCSA §22a-174-4.  
[TA&O No. 8366A, para. B.4.]
- vi. Ozone Season Fuel Use Restriction. Notwithstanding the provisions of Paragraph B.2 TA&O No. 8366A, when operating the emission units described in Table 1 of TA&O No. 8366A during the Ozone Season, the Permittee shall operate those units while firing or co-firing the lowest NO<sub>x</sub> emitting fuel type or combination of fuel types that the units are physically able to burn and that the Permittee are authorized to burn in accordance with Departmental permit, registration, or applicable regulation.  
[TA&O No. 8366A, para. B.5.]
- vii. Notwithstanding Paragraph B.5 of TA&O No. 8366A, during the Ozone Season, the Permittee may operate the emission units described above on fuels that result in higher emissions of NO<sub>x</sub>, if either:  
[TA&O No. 8366A, para. B.6.]

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- (A) the availability of fuel oil that complies with Paragraph B.5 of TA&O No. 8366A is inadequate to meet the needs of residential, commercial and industrial users in this state and that such inadequate supply constitutes an emergency; or
  - (B) the supply of gaseous fuels to the emission units is interrupted due to inadequate supply or in accordance with an interruptible supply agreement between the Permittee and the gaseous fuel supplier; or
  - (C) the reliance on the lowest NOx emitting fuel type or combination of fuel types would prevent a timely response to dispatch directive issued by the Independent System Operator New England (ISO-NE) to provide electricity pursuant to obligations in the Locational Forward Reserve Market; or
  - (D) the reliance on the lowest NOx emitting fuel type or combination of fuel types would prevent a timely response to “Real-time” activation by ISO-NE as operating or replacement reserve in accordance with the units’ designation as a “Fast Start Generator”; or
  - (E) the unit is operating in order to conduct testing required by any governmental agency or auditing/testing required to demonstrate the ability to satisfy commitments made to ISO-NE.
- viii. DERC Use. On the first day of each calendar month, the Permittee shall possess a quantity of DERCs that equals or exceeds the quantity of Actual DERCs Required in that month. Compliance with Paragraph B.7 of TA&O No. 8366A shall be determined as follows:

[TA&O No. 8366A, para. B.7.]

- (A) Before the first day of each month, the Permittee shall estimate DERCs required for such calendar month for the emission units described in Table 1 of TA&O No. 8366A as follows

Estimated DERCs Required =

$$\{(Estimated\ fuel\ use\ in\ MMBtu) \times ((FLER\ lb/MMBtu) - (0.95 \times AEL))\} \div 2000\ lb/ton$$

Where

- AEL = Allowable Emission limit, as defined in Paragraph A.4 of TA&O No. 8366A
- Discount (0.95) = 5% design margin applied to the AEL.

- (B) No later than the twentieth day of each month, the Permittee shall calculate actual DERCs used in the preceding calendar month for the emission units described in Table 1 of TA&O No. 8366A as follows:

Actual DERCs Required =

$$\{(Monthly\ fuel\ use\ in\ MMBtu) \times ((FLER\ lb/MMBtu) - (0.95 \times AEL))\} \div 2000\ lb/ton$$

- ix. Ozone Season DERC Use. In addition to the requirements of Paragraph B.7 of TA&O No. 8366A, on the first day of each Ozone Season, the Permittee shall possess a quantity of DERCs that equals or exceeds the quantity of Ozone Season Actual DERCs Required for that Ozone Season. Compliance with Paragraph B.8 of TA&O No. 8366A shall be determined as follows:

[TA&O No. 8366A, para. B.8.]

- (A) Before the first day of each Ozone Season, the Permittee shall estimate DERCs required for that Ozone Season for the emission units described in Table 1 of TA&O No. 8366A based on the ozone season average actual NOx emission rate from the emission unit as follows:

Estimated Ozone Season DERCs Required =

$$\{(Estimated\ Ozone\ Season\ fuel\ use\ in\ MMBtu) \times ((FLER\ lb/MMBtu) - (0.95 \times AEL))\} \div 2000$$

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lb/ton- $\Sigma$ (Estimated DERCS Required for all months of the Ozone Season calculated pursuant to Paragraph B.7 of TA&O No. 8366A)

- (B) No later than 30 days after the end of each Ozone Season, the Permittee shall calculate Actual Ozone Season DERCS used during that Ozone Season for the emission units described in Table 1 of TA&O No. 8366A as follows:

Actual Ozone Season DERCS Required =

$\{(\text{Actual Ozone Season fuel use in MMBtu}) \times ((\text{FLER lb/MMBtu}) - (0.95 \times \text{AEL}))\} \div 2000 \text{ lb/ton} - \Sigma(\text{Actual DERCS required for all months of the Ozone Season calculated pursuant to Paragraph B.7 of TA\&O No. 8366A})$

Where:

AEL = Ozone season average Allowable Emission Limit, as listed in Table 1 of TA&O No. 8366A.

- x. Non-Ozone Season DERC Use. In addition to the requirements of Paragraphs B.7 and B.8 of TA&O No. 8366A on the first day of each Non-Ozone Season, the Permittee shall possess a quantity of DERCS that equals or exceeds the quantity of Non-Ozone Season Actual DERCS Required for that Non-Ozone Season. Compliance with Paragraph B.9 of TA&O No. 8366A shall be determined as follows:

[TA&O No. 8366A, para. B.9.]

- (A) Before the first day of each Non-Ozone Season, the Permittee shall estimate DERCS required for that Non-Ozone Season for the emission units described in Table 1 of TA&O No. 8366A based on the average actual NOx emission rate from the emission unit and an emission limit of 0.15 lb/MMBtu as follows:

Estimated Non-Ozone Season DERCS Required (Table 1 units) =

$\{(\text{Estimated Non-Ozone Season fuel use in MMBtu}) \times ((\text{FLER lb/MMBtu}) - (0.95 \times 0.15 \text{ lb/MMBtu}))\} \div 2000 \text{ lb/ton} - \Sigma(\text{Estimated DERCS Required for all months of the Non-Ozone Season calculated pursuant to Paragraph B.7 of TA\&O No. 8366A})$

- (B) No later than 30 days after the end of each Non-Ozone Season, the Permittee shall calculate Actual Non-Ozone Season DERCS used during that Non-Ozone Season for the emission units described in Table 1 of TA&O No. 8366A as follows:

Actual Non-Ozone Season DERCS Required (Table 1 units) =

$\{(\text{Actual Non-Ozone Season fuel use in MMBtu}) \times ((\text{FLER lb/MMBtu}) - (0.95 \times 0.15 \text{ lb/MMBtu}))\} \div 2000 \text{ lb/ton} - \Sigma(\text{Actual DERCS Required for all months of the Non-Ozone Season calculated pursuant to Paragraph B.7 of TA\&O No. 8366A})$

- xi. On or before January 31, of each calendar year, the Permittee shall deduct a quantity of DERCS from the current balance of DERCS possessed by the Permittee such that the total is equal to the sum of Actual DERCS required pursuant to Paragraph B.7 and B.8 of TA&O No. 8366A for the preceding calendar year, rounded up to the nearest whole ton.

[TA&O No. 8366A, para. B.10.]

- xii. Not more than 90 days after the completion of the Non-Ozone Season, the Permittee shall deduct a quantity of DERCS from the current balance of DERCS possessed by the Permittee such that the total is equal to Actual Non-Ozone Season DERCS Required for the most recently completed Non-Ozone Season.

[TA&O No. 8366A, para. B.11.]

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- xiii. Fuel Flow Meters. The Permittee shall install, calibrate, maintain and operate a fuel flow meter to continuously monitor fuel feed and heat input to each emission unit described in Table 1 of TA&O No. 8366A.

[TA&O No. 8366A, para. B.16.]

- xiv. FLER Violation. Violation of an established FLER shall subject the Permittee to make restitution by matching the quantity of emissions (“true up”) caused by the exceedance plus a 100% premium. The true up in tons of DERCs shall be equal to the FLER exceedance in lb/MMBtu, multiplied by the total heat input during the period of noncompliance divided by 2000 lb/ton. If the period of noncompliance is not known, the time period from the completion of the last/previous Department witnessed emission test through the date that FLER compliance is achieved as approved by the commissioner shall be used. Notwithstanding this requirement, exceedance of any FLER contained in Table 1 is a violation in Paragraph B.4 of TA&O No. 8366A subject to enforcement action in accordance with the Department of Energy & Environmental Protection’s Enforcement Response Policy, in effect at the time of such violation.

[TA&O No. 8366A, para. B.17.]

- xv. Emissions Testing. The Permittee shall perform emissions testing in accordance with RCSA §22a-174-22e(l) for each emission unit described in Table 1 of TA&O No. 8366A that is not equipped with a continuous emissions monitoring system that was approved by the commissioner and that complies with RCSA §22a-174-4.

[TA&O No. 8366A, para. B.19.]

- xvi. CO No. 8377 case-by-case NO<sub>x</sub> RACT determination expires on May 1, 2028, at which time the Permittee shall operate EU-5 in compliance with the applicable emissions limits and other requirements of RCSA §22a-174-22e or cease operation. [CO No. 8377, para. C.14]

b. *Maintenance and Tune-up* [TA&O No. 8366A, para. B.12.a-c]

Not more than one year from the date of issuance of TA&O No. 8366A, the Permittee shall perform maintenance and inspection of the emission units listed in Table 1 of TA&O No. 8366A. Such maintenance and inspection shall include, but not be limited to, the following:

- i. Inspect the combustion system, and clean or replace any components of the combustion system as necessary, in accordance with manufacturer’s specification or current good engineering practice;
- ii. Inspect the system controlling the air-to-fuel ratio, and ensure that it is calibrated and functioning in accordance with the manufacturer’s specifications or current good engineering practice; and
- iii. Measure the operating parameters of the emission unit used to determine that the emission unit is operating in accordance with manufacturer’s specification or current good engineering practice prior to and after any adjustments are made during maintenance, tune-up, or inspection activity.

c. *Record Keeping Requirements*

- i. The Permittee shall make and keep records including, but not limited to the following:

[TA&O No. 8366A, para. B.12.d.]

- (A) Demonstration that any maintenance, tune-up, and/or inspection activity performed on the emission unit described in Table 1 in accordance with Paragraph B.11 of TA&O No. 8366A has been performed in accordance with the manufacturer’s specifications or current good engineering practice;
- (B) The date and a description of any maintenance, tune-up, and/or inspection activity performed on the emission unit described in Table 1 in accordance with Paragraph B.11 of TA&O No. 8366A;

### **Section III: Applicable Requirements and Compliance Demonstration**

- (C) The name, title and affiliation of the person conducting any maintenance, tune-up, and/or inspection activity performed on the emission unit described in Table 1 in accordance with Paragraph B.11 of TA&O No. 8366A; and
  - (D) The operating parameters of the emission unit used to determine that the emission unit is operating in accordance with manufacturer's specification or current good engineering practice prior to and after any adjustments are made during maintenance, tune-up, or inspection activity performed in accordance with Paragraph B.11 of TA&O No. 8366A.
- ii. By the close of each calendar day, the Permittee shall record the actual fuel type and the actual quantity of each type of fuel in units of volume per day or MMBtu per day for each fuel used the preceding day in an emission unit described in TA&O No. 8366A. [TA&O No. 8366A, para. B.13.a.]
  - iii. On or before the first day of each calendar month, the Permittee shall record the number of DERCs and corresponding serial numbers and vintages for all DERCs in its possession on the first calendar day of that calendar month.  
[TA&O No. 8366A, para. B.13.b.]
  - iv. On or before the first day of each calendar month, the Permittee shall record the number of DERCs and corresponding serial numbers, vintages, purchase/sales dates, and seller/buyer for all DERCs purchased or sold during the preceding calendar month.  
[TA&O No. 8366A, para. B.13.c.]
  - v. On or before the first day of each calendar month, the Permittee shall record the Estimated DERCs Required for that calendar month determined in accordance with Paragraph B.7 of TA&O No. 8366A.  
[TA&O No. 8366A, para. B.13.d.]
  - vi. On or before the twentieth calendar day of each calendar month, the Permittee shall record the Actual DERCs Required for the preceding calendar month determined in accordance with Paragraph B.7 of TA&O No. 8366A.  
[TA&O No. 8366A, para. B.13.e.]
  - vii. On or before January 31 of each calendar year, the Permittee shall record the quantity of DERCs possessed on the first day of the Ozone Season and the quantity of DERCs deducted in accordance with Paragraphs B.7 and B.8 of TA&O No. 8366A. Such records shall include the serial number and vintage of each DERC deducted from the Permittees' current balance pursuant to Paragraphs B.7 and B.8 of TA&O No. 8366A. [TA&O No. 8366A, para. B.13.f.]
  - viii. Not more than 90 days after the completion of each Non-Ozone Season, the Permittee shall record the Non-Ozone Season average NOx emission rate for the emission units described in Table 1, the quantity of DERCs possessed on the first day of the Non-Ozone Season, and the quantity of DERCs deducted in accordance with Paragraph B.9 of TA&O No. 8366A.  
[TA&O No. 8366A, para. B.13.g.]
  - ix. For each month of the Ozone Season, the Permittee shall maintain records attesting to the fact that any DERCs deducted from its balance in accordance with Paragraphs B.7 and B.8 of TA&O No. 8366A satisfy the requirements of Paragraph B.2 of TA&O No. 8366A. Generator certification of this fact shall be sufficient.  
[TA&O No. 8366A, para. B.13.h.]
  - x. On each day during the Ozone Season that the Permittee operate in accordance with Paragraph B.6 of TA&O No. 8366A, the Permittee shall make and keep records of all emission unit operation in accordance with Paragraph B.6 of TA&O No. 8366A, including copies of any written correspondence from the Permittees' fuel supplier detailing the duration and circumstances of the inadequate fuel oil supply or interruption of gaseous fuel supply to the emission units.

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[TA&O No. 8366A, para. B.13.i.]

- xi. The Permittee shall by the close of each calendar day record the actual hours of operation and the actual quantity of fuel combusted during the preceding day and shall calculate and record NOx emissions for EU-5. The Permittee shall calculate NOx emissions using the emissions rate determined during the latest emissions test performed in accordance with RCSA §22a-174-22e(l).

[CO No. 8377, para. C.10.a]

- xii. The Permittee shall keep records of monthly and consecutive 12 month fuel consumption for EU05. The consecutive 12 month fuel consumption shall be determined by adding the current month's fuel consumption to that of the previous 11 months. The Permittee shall make these calculations within 30 days of the end of the previous month. [CO No. 8377, para. C.10.c]

#### d. Reporting Requirements

- i. No later than March 1 of every year after issuance of TA&O No. 8366A, the Permittee shall submit to the commissioner a written report containing copies of all of the records required pursuant to Paragraphs B.13.a – B.13.f, B.13.h and B.13.i of TA&O No. 8366A. Not later than July 30 of each calendar year, the Permittee shall submit a written report containing copies of all records required pursuant to Paragraph B.13.g of TA&O No. 8366A. The commissioner may prescribe the forms to be used for the submission of these reports. The Permittee shall submit these reports on such forms, if prescribed by the commissioner. [TA&O No. 8366A, para. B.15.]

- ii. The Permittee shall retain records and supporting documentation required by TA&O No. 8366A for a minimum of five years, commencing on the date such records were created. The Permittee shall provide the records specified by TA&O No. 8366A to the commissioner within 30 days of receipt of a written request from the commissioner. All records shall be maintain in accordance with RCSA §§22a-174-4 and 22a-174-22e.

[TA&O No. 8366A, para. B.14.]

- iii. The Permittee shall provide the records required by Sections III.C.2.c.xi and xii of this Title V permit to the commissioner within thirty (30) days of receipt of a written request from the commissioner. [CO No. 8377, para C.10.e]

- iv. No later than March 1 of every year, the Permittee shall submit to the commissioner a written report containing copies of all records required by Sections III.C.2.c.xi and xii of this Title V permit.

[CO No. 8377, para. C.10.f]

### 3. CAIR NOx Ozone Season Trading Program: [RCSA §22a-174-22c]

Emissions Unit 5 (EU-5) is a CAIR NOx Ozone season unit and therefore is subject to RCSA §22a-174-22c. The unit shall comply with all applicable requirements stated in RCSA §22a-174-22c and the standard requirements of the CAIR permit application.

### 4. TSP

#### a. Limitation or Restriction

Less than or equal to 0.20 lb/MMBtu heat input. [RCSA §22a-174-18(e)(2)(D)]

#### b. Monitoring Requirements

Record keeping specified in Section III.C.4.c. of this Title V permit shall be sufficient to meet other Monitoring and Testing Requirements pursuant to RCSA §22a-174-33.

[RCSA §22a-174-33(j)(1)(K)(ii)]



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*c. Record Keeping Requirements*

The Permittee shall maintain records sufficient to determine compliance with the limitation or restriction in Section III.C.4.a. of this Title V permit.

[RCSA §22a-174-33(j)(1)(K)]

*d. Reporting Requirements*

The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

#### 5. Opacity

*a. Limitation or Restriction* [RCSA §22a-174-18(b)(1)]

- i. Visible emissions of no greater than 20% opacity during any six-minute block average as measured by 40 CFR Part 60, Appendix A, Reference Method 9; or
- ii. 40% opacity as measured by 40 CFR Part 60, Appendix A, Reference Method 9, reduced to a one-minute block average.

*b. Monitoring Requirements* [RCSA §22a-174-33(j)(1)(K)(ii)]

Testing shall be conducted concurrent with the required NO<sub>x</sub> testing, using EPA Method 9 (or equivalent EPA approved Method). Recurring tests shall be every five years concurrent with the required NO<sub>x</sub> testing.

*c. Record Keeping Requirements*

The Permittee shall maintain records sufficient to determine compliance with the limitation or restriction in Section III.C.5.a. of this Title V permit. [RCSA §22a-174-33(j)(1)(K)]

*d. Reporting Requirements*

- i. The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]
- ii. The Permittee shall submit reports of all testing in accordance with the requirements of this Title V permit. [RCSA §22a-174-33(j)(1)(K)(ii)]

#### 6. SO<sub>2</sub>

*a. Limitation or Restriction*

- i. The Permittee shall comply with the following fuel sulfur limits:

(A) Combust liquid fuel, gaseous fuel or a combination of each provided that each fuel possess a fuel sulfur limit equal to or less than 0.05% sulfur, by weight (dry basis). [104-0102-R]

(B) Combust liquid fuel, gaseous fuel or a combination of each provided that each fuel possess a fuel sulfur limit of equal to or less than 3000 ppm (0.3 % sulfur, by weight);

[RCSA §22a-174-19a(e)(1)]

(C) Notwithstanding the fuel sulfur limit in Section III.C.6.a.i.B. of this Title V Permit, the Permittee shall comply with the most stringent applicable emission limitation or standard.

[RCSA §22a-174-19a(k)(1)]

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b. *Monitoring Requirements* [RCSA §22a-174-33(j)(1)(K)(ii)]

The Permittee shall obtain a certification from the fuel supplier stating the sulfur content in each fuel shipment received at the premises.

c. *Record Keeping Requirements*

The Permittee shall make and keep records pursuant to RCSA §22a-174-19a(i)(1).

d. *Reporting Requirements*

The Permittee shall submit reports in accordance with the requirements RCSA §22a-174-19a(j)(1).

**D. GROUPED EMISSIONS UNIT 2 (GEU-2): Four General Electric LM6000PC 50 MW Gas Turbines: EU-8 through EU-11**

**NSR Permit Nos. 104-0144; 104-0145, 104-0146, 104-0147; 40 CFR Part 60 Subpart KKKK; RCSA §§22a-174-19a, 22c, 22e**

**1. Allowable Fuel Usage** [P104-0144, 104-0145, 104-0146, and 104-0147]

a. *Limitation or Restriction*

All fuel firing rate limits are per turbine and all annual fuel usage limits are combined limits for EU-8, EU-9, EU-10, and EU-11.

i. Ultra-Low Sulfur Distillate Fuel Oil (ULSD)

(A) 3,600 gallons/hour per turbine

(B) Maximum Fuel Consumption over any Consecutive 12 Month Period:  $8,363 \times 10^3$  gallons

(C) Maximum Fuel Sulfur Content: 0.0015% (15 ppmvd)

(D) Maximum Heat Input: 482.4 MMBtu/hr

ii. Natural Gas

(A) 498,000 scf/hour per turbine

(B) Maximum Fuel Consumption over any Consecutive 12 Month Period:  $2,312 \times 10^6$  scf

(C) Maximum Heat Input: 510.9 MMBtu/hr

iii. Maximum Amount of Fuel Usage

The Permittee shall use the following equation to determine the maximum amount of fuel available to be burned in GEU-2:

$$\text{Maximum Natural Gas Use} = \text{Fuel}_{\text{ng}} - (276.45) \times \text{Fuel}_{\text{oil}}$$

Where :  $\text{Fuel}_{\text{ng}} = 2,312 \times 10^6$  scf natural gas

$\text{Fuel}_{\text{oil}} =$  gallons of ULSD fuel burned (not to exceed  $8,363 \times 10^3$  gal/yr)

b. *Monitoring Requirements* [P104-0144, 104-0145, 104-0146, and 104-0147]

The Permittee shall use individual totalizing fuel metering devices or billing meters to continuously monitor fuel feed to each unit of GEU-2.

c. *Record Keeping Requirements* [P104-0144, 104-0145, 104-0146, and 104-0147]

i. The Permittee shall keep records of monthly and consecutive 12 month fuel consumption for of each unit of GEU-2 and all units in GEU-2 combined (for each fuel). The consecutive 12 month fuel consumption shall be determined by adding (for each fuel) the current month's fuel consumption to that of the previous

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11 months. The Permittee shall make these calculations within 30 days of the end of the previous month.

- ii. The Permittee shall keep records of the fuel certification for each delivery of fuel oil from a bulk petroleum provider or a copy of the current contract with the fuel supplier supplying the fuel used by the equipment that includes the applicable sulfur content of the fuel as a condition of each shipment. The shipping receipt or contract shall include the date of delivery, the name of the fuel supplier, type of fuel delivered, the percentage of sulfur in such fuel, by weight, dry basis, and the method used to determine the sulfur content of such fuel.

d. *Reporting Requirements* [P104-0144, 104-0145, 104-0146, and 104-0147]

The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

#### 2. PM<sub>2.5</sub>

a. *Limitations or Restrictions* [P104-0144, 104-0145, 104-0146, and 104-0147]

All short term emission rate limits are per turbine and all annual tonnage limits are combined worst case for GEU-2 using either natural gas, ULSD or a combination thereof.

i. ULSD

Less than or equal to 12.0 lb/hour per turbine

ii. Natural Gas

Less than or equal to 6.0 lb/hour per turbine

iii. Annual PM<sub>2.5</sub> for GEU-2 shall not exceed 14.9 ton/yr regardless of fuel.

b. *Monitoring and Testing Requirements* [P104-0144, 104-0145, 104-0146, and 104-0147]

The Permittee shall demonstrate compliance with the PM<sub>2.5</sub> emission limit using the latest stack test data.

c. *Record Keeping Requirements*

- i. The Permittee shall calculate and record the monthly and consecutive 12 month PM<sub>2.5</sub> emissions in units of tons. The consecutive 12 month emissions shall be determined by adding the current month's emissions to that of the previous 11 months. Such records shall include a sample calculation. The Permittee shall make these calculations within 30 days of the end of the previous month.

[P104-0144, 104-0145, 104-0146, and 104-0147]

- ii. The Permittee shall maintain records of stack test results and make calculations demonstrating continual compliance with the above emission factors and limits. [RCSA §22a-174-33(j)(1)(K)(ii)]

d. *Reporting Requirements*

The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

#### 3. PM<sub>10</sub>

a. *Limitations or Restrictions* [P104-0144, 104-0145, 104-0146, and 104-0147]

All short term emission rate limits are per turbine and all annual tonnage limits are combined worst case for GEU-2, using either natural gas, ULSD or a combination thereof.

i. ULSD

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Less than or equal to 12.0 lb/hour per turbine

ii. Natural Gas

Less than or equal to 6.0 lb/hour per turbine

iii. Annual PM<sub>10</sub> for GEU-2 shall not exceed 14.9 ton/yr regardless of fuel.

b. *Monitoring and Testing Requirements* [P104-0144, 104-0145, 104-0146, and 104-0147]

The Permittee shall demonstrate compliance with the PM<sub>10</sub> emission limit using the latest stack test data.

c. *Record Keeping Requirements*

- i. The Permittee shall calculate and record the monthly and consecutive 12 month PM<sub>10</sub> emissions in units of tons. The consecutive 12 month emissions shall be determined by adding the current month's emissions to that of the previous 11 months. Such records shall include a sample calculation. The Permittee shall make these calculations within 30 days of the end of the previous month.

[P104-0144, 104-0145, 104-0146, and 104-0147]

- ii. The Permittee shall maintain records of stack test results and make calculations demonstrating continual compliance with the above emission factors and limits. [RCSA §22a-174-33(j)(1)(K)(ii)]

d. *Reporting Requirements*

The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

#### 4. NO<sub>x</sub>

a. *Limitations or Restrictions* [P104-0144, 104-0145, 104-0146, and 104-0147]

All short term emission rate limits are per turbine and all annual tonnage limits are combined worst case for GEU-2, using either natural gas, ULSD or a combination thereof.

i. ULSD

(A) Less than or equal to 10.5 lb/hour per turbine

(B) Less than or equal to 5.9 ppmvd @15% O<sub>2</sub>

(C) 42 ppm @ 15% O<sub>2</sub> [40 CFR §60.4320(a), Table 1]

ii. Natural Gas

(A) Less than or equal to 4.4 lb/hour per turbine

(B) Less than or equal to 2.5 ppmvd @15% O<sub>2</sub>

(C) 15 ppm @ 15% O<sub>2</sub> [40 CFR §60.4320(a), Table 1]

iii. Until May 31, 2023, the Permittee shall not exceed the following emissions limitations:

(A) Natural Gas

(i) Less than or equal to 55 ppmvd (daily block average) [RCSA §22a-174-22e(d)(4)(A)]

(B) ULSD

(i) Less than or equal to 75 ppmvd (daily block average) [RCSA §22a-174-22e(d)(4)(A)]

(C) Less than or equal to 0.15 lb/MMBtu (7 month average) during the period October 1 through April 30, inclusive (**Both Fuels**) [RCSA §22a-174-22e(d)(4)(B)]

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- iv. On and After June 1, 2023, the Permittee shall not exceed the following emissions limitations:
  - (A) Natural Gas
    - (i) Less than or equal to 40 ppmvd (daily block average) [RCSA §22a-174-22e(d)(4)(C)]
  - (B) ULSD
    - (i) Less than or equal to 50 ppmvd (daily block average) [RCSA §22a-174-22e(d)(4)(C)]
  - (C) Less than or equal to 0.15 lb/MMBtu (7 month average) during the period October 1 through April 30, inclusive. **(Both Fuels)** [RCSA §22a-174-22e(d)(4)(D)]
- v. Annual NOx emissions shall not exceed 10.8 ton/yr regardless of fuel.

#### b. Monitoring and Testing Requirements

- i. The Permittee shall demonstrate compliance with NOx emissions using the latest stack test data.
  - (A) The Permittee shall conduct NOx emission tests of the unit at least once every five years from the date of the previous stack test.  
[P104-0144, 104-0145, 104-0146, and 104-0147; RCSA §22a-174-22e(l)(1)]
    - (1) The Permittee shall comply with the applicable NOx monitoring requirements in 40 CFR §§60.4335 through 60.4355.
    - (2) The Permittee shall conduct NOx stack testing, if required, pursuant to 40 CFR Part 75, Appendix E.

#### c. Record Keeping Requirements

- i. The Permittee shall calculate and record the monthly and consecutive 12 month NOx emissions in units of tons. The consecutive 12 month emissions shall be determined by adding the current month's emissions to that of the previous 11 months. Such records shall include a sample calculation. The Permittee shall make these calculations within 30 days of the end of the previous month.  
[P104-0144, 104-0145, 104-0146, and 104-0147]
- ii. The Permittee shall make and keep records for each tune-up, repairs, replacement of parts and other maintenance, such records shall include the following:  
[RCSA §22a-174-22e(j)(2)(E)]
  - (A) The date on which the emissions unit is tuned-up;
  - (B) The name, title and affiliation of the person performing the tune-up; and
  - (C) A description of work performed, including the procedures used to inspect and perform adjustments.
- iii. The Permittee shall make and keep records of all documents, other records or reports required by an order or permit by the commissioner.  
[RCSA §22a-174-22e(j)(F) & (G)]
- iv. The Permittee shall make and keep records of the dates, times, and places of all emission testing required by RCSA §22a-174-22e(j)(2)(C), the persons performing the measurements, the testing methods used, the operating conditions at the time of testing, and the results of such testing.  
[RCSA §22a-174-22e(j)(2)(C)]
- v. The Permittee shall maintain records of stack test results and make calculations demonstrating continual

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compliance with the above emission factor and limits.

[RCSA §22a-174-33(j)(1)(K)(ii)]

#### d. Reporting Requirements

- i. The Permittee shall submit the required reports in accordance with 40 CFR §§60.4375(a) and 60.4395.
- ii. The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

#### 5. CAIR NO<sub>x</sub> Ozone Season Trading Program

Grouped Emissions Unit 2 (GEU-2) is comprised of CAIR NO<sub>x</sub> Ozone season units and therefore are subject to RCSA §22a-174-22c. The units shall comply with all applicable requirements stated in RCSA §22a-174-22c and the standard requirements of the CAIR permit application.

#### 6. SO<sub>2</sub>

##### a. Limitations or Restrictions [P104-0144, 104-0145, 104-0146, and 104-0147]

All short term emission rate limits are per turbine and all annual tonnage limits are combined worst case for GEU-2, using either natural gas, ULSD or a combination thereof.

- i. ULSD  
Less than or equal to 0.70 lb/hour per turbine
- ii. Natural Gas  
Less than or equal to 0.26 lb/hour per turbine
- iii. 0.060 lb/MMBtu, both fuels [40 CFR §60.4330(a)(2)]
- iv. Annual SO<sub>2</sub> emissions shall not exceed 0.9 ton/yr regardless of fuel.
- v. The Permittee shall: [**RCSA §22a-174-19a**]
  - (A) Combust liquid fuel, gaseous fuel or a combination of each provided that each fuel possess a fuel sulfur limit of equal to or less than 0.3 % sulfur, by weight (dry basis);
  - (B) Meet an average emission rate of equal to or less than 0.33 pounds SO<sub>2</sub> per MMBTU for each calendar quarter for an affected unit at a premises; or
  - (C) Meet an average emission rate of equal to or less than 0.3 pounds SO<sub>2</sub> per MMBTU calculated for each calendar quarter, if such owner or operator averages the emissions from two or more affected units at a premises.

##### b. Monitoring and Testing Requirements

The Permittee shall comply with the monitoring requirements of 40 CFR §§60.4360 through 60.4370.

##### c. Record Keeping Requirements

- i. The Permittee keep records of the fuel sulfur content in accordance with 40 CFR §60.4365(a).
- ii. The Permittee shall calculate and record the monthly and consecutive 12 month SO<sub>x</sub> emissions in units of tons. The consecutive 12 month emissions shall be determined by adding the current month's emissions to that of the previous 11 months. Such records shall include a sample calculation. The Permittee shall make these calculations within 30 days of the end of the previous month.

[P104-0144, 104-0145, 104-0146, and 104-0147]

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- iii. The Permittee shall make and keep records pursuant to RCSA §22a-174-19a(i).  
[P104-0144, 104-0145, 104-0146, and 104-0147]

#### d. Reporting Requirements

- i. The Permittee shall submit reports in accordance with RCSA §22a-174-19a(j).
- ii. The Permittee shall submit the required reports pursuant to 40 CFR §60.4375.

### 7. Volatile Organic Compounds (VOC)

#### a. Limitations or Restrictions [P104-0144, 104-0145, 104-0146, and 104-0147]

All short term emission rate limits are per turbine and all annual tonnage limits are combined worst case for GEU-2, using either natural gas, ULSD or a combination thereof.

- i. ULSD  
Less than or equal to 0.75 lb/hour
- ii. Natural Gas  
Less than or equal to 1.11 lb/hour
- iii. Annual VOC emissions shall not exceed 2.8 ton/yr regardless of fuel.

#### b. Monitoring Requirements

The Permittee shall demonstrate compliance with VOC emission limits shall be met by calculating the emission rates using emission factors from AP-42 Chapter 3, Fifth Edition, Volume 1, Table 3.1-2a, dated 04/00.

[P104-0144, 104-0145, 104-0146, and 104-0147]

#### c. Record Keeping Requirements

The Permittee shall calculate and record the monthly and consecutive 12 month VOC emissions in units of tons. The consecutive 12 month emissions shall be determined by adding the current month's emissions to that of the previous 11 months. Such records shall include a sample calculation. The Permittee shall make these calculations within 30 days of the end of the previous month.

[P104-0144, 104-0145, 104-0146, and 104-0147]

#### d. Reporting Requirements

The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

### 8. Carbon Monoxide (CO)

#### a. Limitation or Restriction [P104-0144, 104-0145, 104-0146, and 104-0147]

All short term emission rate limits are per turbine and all annual tonnage limits are combined worst case for GEU-2, using either natural gas, ULSD or a combination thereof.

- i. ULSD
  - (A) Less than or equal to 1.1 lb/hour.
  - (B) Less than or equal to 1.0 ppmvd @ 15% O<sub>2</sub>.
- ii. Natural Gas
  - (A) Less than or equal to 5.3 lb/hour.

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- (B) Less than or equal to 5.0 ppmvd @ 15% O<sub>2</sub>.
- iii. Annual CO emissions shall not exceed 19.9 ton/yr regardless of fuel.
- b. *Monitoring and Testing Requirements* [P104-0144, 104-0145, 104-0146, and 104-0147]
  - i. The Permittee shall conduct stack testing at least once every five years from the date of the last stack test.
  - ii. The Permittee shall demonstrate compliance with CO emission limits shall be met by calculating the emission rates using the most recent stack test data.  
[P104-0144, 104-0145, 104-0146, and 104-0147]
- c. *Record Keeping Requirements* [P104-0144, 104-0145, 104-0146, and 104-0147]

The Permittee shall calculate and record the monthly and consecutive 12 month CO emissions in units of tons. The consecutive 12 month emissions shall be determined by adding the current month's emissions to that of the previous 11 months. Such records shall include a sample calculation for each pollutant. The Permittee shall make these calculations within 30 days of the end of the previous month.
- d. *Reporting Requirements*
  - i. The Permittee shall submit a written report to the commissioner of any testing results within 30 days of the completion of such CO test. [RCSA §22a-174-33(j)(1)(K)(ii)]
  - ii. The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

#### 9. Startup and Shutdown: NO<sub>x</sub> and CO

- a. *Limitation or Restriction* [P104-0144, 104-0145, 104-0146, and 104-0147]
  - i. The Permittee shall minimize emissions during periods of startup and shutdown by the following work practices and time constraints:
    - (A) Start the ammonia injection as soon as the minimum catalyst temperature is reached;
    - (B) The oxidation catalyst will not be bypassed during startup or shutdown;
    - (C) The duration of startup and malfunction shall not exceed 60 minutes; and
    - (D) The duration of the shutdown shall not exceed 30 minutes.
  - ii. ULSD
    - (A) NO<sub>x</sub>:
      - (1) 40 lb/event during startup
      - (2) 25 lb/event during shutdown
    - (B) CO:
      - (1) 18 lb/event during startup
      - (2) 9 lb/event during shutdown
  - iii. Natural Gas
    - (A) NO<sub>x</sub>:
      - (1) 20 lb/hr during startup
      - (2) 13 lb/hr during shutdown



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(B) CO:

- (1) 32 lb/hr during startup
- (2) 27 lb/hr during shutdown

iv. Emissions during these periods shall be counted towards the annual emissions limits stated in Sections III.D.4.a.v. and III.D.8.a.iii. of this Title V permit for NO<sub>x</sub> and CO respectively.

*b. Monitoring Requirements*

The Permittee shall demonstrate compliance with the NO<sub>x</sub> and CO startup and shutdown emission limits by calculating the emission rates using the Manufacturer's Data.

[P104-0144, 104-0145, 104-0146, and 104-0147]

*c. Record Keeping Requirements* [P104-0144, 104-0145, 104-0146, and 104-0147]

i. The Permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the combustion turbines; any malfunction of the air pollution control equipment; or any periods during which a monitoring device is inoperative.

Such records shall contain the following information:

- (A) Type of event (startup, shutdown, or malfunction);
- (B) Equipment affected;
- (C) Date of event;
- (D) Duration of event;
- (E) Fuel being used during event; and
- (F) Total NO<sub>x</sub> and CO emissions emitted (lb) during event.

*d. Reporting Requirements*

The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

#### 10. Lead (Pb)

*a. Limitation or Restriction* [P104-0144, 104-0145, 104-0146, and 104-0147]

All short term emission rate limits are per turbine and all annual tonnage limits are for GEU-2, using ULSD.

- i. Less than or equal to 6.4E-3 lb/hour.
- ii. Annual Pb emissions shall not exceed 6.4E-3 ton/yr.

*b. Monitoring and Testing Requirements* [P104-0144, 104-0145, 104-0146, and 104-0147]

The Permittee shall demonstrate compliance with Pb emission limits shall be met by calculating the emission rates using the emission factors from AP-42 Chapter 3, Fifth Edition, Volume 1, Table 3.1-2a, dated 04/00.

[P104-0144, 104-0145, 104-0146, and 104-0147]

*c. Record Keeping Requirements*

The Permittee shall maintain records sufficient to determine compliance with the limitation or restriction in Section III.D.10.a. of this Title V permit. [RCSA §22a-174-33(j)(1)(K)]

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#### d. Reporting Requirements

The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

### 11. Ammonia

#### a. Limitations or Restrictions [P104-0144, 104-0145, 104-0146, and 104-0147]

Ammonia emissions from each unit shall be less than or equal to 5.0 ppmvd @ 15% O<sub>2</sub>.

#### b. Monitoring and Testing Requirements [P104-0144, 104-0145, 104-0146, and 104-0147]

The Permittee shall demonstrate compliance through stack testing once every five years starting from the date of the initial stack test to demonstrate compliance with the permit limit listed above.

#### c. Record Keeping Requirements

i. The Permittee shall keep records of each delivery of aqueous ammonia. The records shall include:  
[P104-0144, 104-0145, 104-0146, and 104-0147]

(A) The date of delivery;

(B) The name of the supplier;

(C) The quantity of aqueous ammonia delivered; and

(D) The percentage of ammonia in solution, by weight.

ii. The Permittee shall maintain records of stack test results and make calculations demonstrating continual compliance with the above emission factor and limits. [RCSA §22a-174-33(j)(1)(K)(ii)]

#### d. Reporting Requirements

The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

### 12. Opacity

#### a. Limitation or Restriction [P104-0144, 104-0145, 104-0146, and 104-0147]

Each unit in GEU-2 shall not exceed 10% opacity during any six minute block average as measured by 40 CFR Part 60, Appendix A, Reference Method 9.

#### b. Monitoring Requirements [RCSA §22a-174-33(j)(1)(K)(ii)]

Record keeping specified in Section III.D.12.c of this Title V permit shall be sufficient to meet other Monitoring Requirements pursuant to RCSA §22a-174-33.

[RCSA §22a-174-33(j)(1)(K)(ii)]

#### c. Record Keeping Requirements

The Permittee shall maintain records sufficient to determine compliance with the limitation or restriction in Section III.D.12.a. of this Title V permit. [RCSA §22a-174-33(j)(1)(K)]

#### d. Reporting Requirements

The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

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### 13. Hazardous Air Pollutants

#### a. Limitation or Restriction

This equipment shall not cause an exceedance of the MASC for any hazardous air pollutant (HAP) emitted and listed in RCSA §22a-174-29.

[STATE ONLY REQUIREMENT] [P104-0144, 104-0145, 104-0146, and 104-0147]

#### b. Monitoring Requirements

Record keeping specified in Section III.D.13.c of this Title V permit shall be sufficient to meet other Monitoring Requirements pursuant to RCSA §22a-174-33.

[RCSA §22a-174-33(j)(1)(K)(ii)]

#### c. Record Keeping Requirements

The Permittee shall maintain records sufficient to determine compliance with the limitation or restriction in Section III.D.13.a of this Title V permit.

#### d. Reporting Requirements

The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

### 14. Pollution Control Equipment (SCR/Oxidation Catalyst/Water Injection)

#### a. Limitation or Restriction [P104-0144, 104-0145, 104-0146, and 104-0147]

- i. The Permittee shall operate and maintain the air pollution control equipment in accordance with the manufacturer's specifications and written recommendations. The Permittee shall operate and maintain these stationary combustion turbines, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emission at all times including during startup, shutdown, and malfunction. [40 CFR §60.4333(a)]
- ii. The Permittee shall maintain the water-to-fuel ratio when the turbines are in operation between 0.480 – 1.602 lb/lb, as determined by the initial performance test to show compliance with the NO<sub>x</sub> emission rates in this Title V permit.
- iii. The Permittee shall maintain the following SCR parameters within the ranges recommended by the manufacturer to achieve compliance with the NO<sub>x</sub> emission limits in Section III.D.4.a. of this Title V permit:
  - (A) Ammonia injection rate (lb/hr),
  - (B) SCR operating temperature (°F), and
  - (C) Pressure Drop across the catalyst bed (inches of water)
- iv. The Permittee shall maintain the oxidation catalyst inlet temperature (°F) within the ranges recommended by the manufacturer to achieve compliance with the CO emission limits in Section III.D.8.a. of this Title V permit.

#### b. Monitoring Requirements [P104-0144, 104-0145, 104-0146, and 104-0147]

- i. The Permittee shall continuously monitor the water-to-fuel ratio.
- ii. The Permittee shall continuously monitor the SCR ammonia injection rate (lb/hr), operating temperature (°F) and the pressure drop (inches of water) across the SCR catalyst bed.
- iii. The Permittee shall continuously monitor the oxidation catalyst inlet temperature (°F).

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- iv. The Permittee shall perform inspections of the SCR and oxidation catalysts as recommended by the manufacturer.
  - v. The Permittee 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 each unit in GEU-2 in accordance with 40 CFR §60.4335(a).
  - vi. The Permittee must develop and keep on-site a parameter monitoring plan which explains the procedures used to document proper operation of the NO<sub>x</sub> emission controls in accordance with 40 CFR §60.4355(a).
- c. *Record Keeping Requirements* [P104-0144, 104-0145, 104-0146, and 104-0147]
- i. The Permittee shall keep records of the inspection and maintenance of the SCR and oxidation catalyst. The records shall include the name of the person, the date, the results or actions and the date the catalyst is replaced.
  - ii. The Permittee shall continuously record the SCR ammonia injection rate (lb/hr), operating temperature (°F) and the pressure drop (inches of water) across the SCR catalyst bed.
  - iii. The Permittee shall continuously record the oxidation catalyst inlet temperature (°F).
  - iv. The Permittee shall keep records of manufacturer's specifications and written recommendations.
  - v. The Permittee shall keep records of all exceedances of any operating parameter. Such records shall include:
    - (A) The date and time of the exceedance;
    - (B) A detailed description of the exceedance; and
    - (C) The duration of the exceedance.
- d. *Reporting Requirements* [P104-0144, 104-0145, 104-0146, and 104-0147]
- i. The Permittee shall notify the commissioner in writing of any exceedance of an operating parameter, and shall identify the cause or likely cause of such exceedance, all corrective actions and preventive measures taken with respect thereto, and the dates of such actions and measures as follows:
    - (A) For any hazardous air pollutant, no later than 24 hours after such exceedance commenced; and
    - (B) For any other operating parameter, no later than ten days after such exceedance commenced.
  - ii. The Permittee shall notify the commissioner in writing of any malfunction of the stationary gas turbines, the air pollution control equipment or the continuous monitoring system. The Permittee shall submit such notification with seven days of the malfunction. The notification shall include the following:
    - (A) Description of the malfunction and a description of the circumstances surrounding the cause or likely cause of such malfunction; and
    - (B) Description of all corrective actions and preventative measures taken and/or planned with respect to such malfunction and the dates of such actions and measures.

#### **15. Turbine Operation and Maintenance**

- a. *Limitation or Restriction* [P104-0144, 104-0145, 104-0146, and 104-0147]
- i. The Permittee shall operate and maintain GEU-2 in accordance with the manufacturer's specifications and written recommendations.
  - ii. The Permittee shall operate and maintain this equipment, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all

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times including during startup, shutdown, and malfunction.

- iii. The Permittee shall properly operate the control equipment at all times that this equipment is in operation and emitting air pollutants, except as allowed during startup/shutdown events in Section III.D.9. of this Title V permit.
- iv. The Permittee shall immediately institute a shutdown of GEU-2 in the event of a malfunction that cannot be correct within three hours.

*b. Monitoring Requirements*

Record keeping specified in Section III.D.15.c of this Title V permit shall be sufficient to meet other Monitoring Requirements pursuant to RCSA §22a-174-33.

[RCSA §22a-174-33(j)(1)(K)(ii)]

*c. Record Keeping Requirement*

The Permittee shall maintain records sufficient to determine compliance with the limitation or restriction in Section III.D.15.a of this Title V permit.

[RCSA §22a-174-33(j)(1)(K)]

*d. Reporting Requirements*

The Permittee shall submit additional information in writing, at the commissioner’s request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier. [RCSA §22a-174-33(j)(1)(X)]

#### 16. Turbine Exchanges

*a. Record Keeping Requirements* [P104-0144, 104-0145, 104-0146, and 104-0147]

The Permittee shall make and keep records of when the turbines are exchanged for routine maintenance, to include the following:

- i. The date the turbine was changed;
- ii. the reason for the change;
- iii. Documentation that the replacement turbine or gas generator is the same make and model number; and
- iv. Documentation that the replacement turbine does not result in an increase in emissions, the emission of any new air pollutants, or increases in electrical output of the turbine.

#### E. FEDERAL ACID RAIN PERMIT REQUIREMENTS

##### 1. SO<sub>2</sub> Allowance Allocations and NO<sub>x</sub> Requirements for Each Affected Unit

*a. Unit 2: 117 MW Riley boiler rated at 1,295 MMBtu/hr*

		2020	2021	2022	2023	2024
EU-1 Unit 2	SO <sub>2</sub> Allowances under Tables 2, 3, or 4 of 40 CFR Part 73	1,332	1,332	1,332	1,332	1,332
	NO <sub>x</sub> Limit	Not an Affected Unit under 40 CFR Part 76				

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b. Unit 3: 236 MW B&W cyclone boiler rated at 2,370 MMBtu/hr

		2020	2021	2022	2023	2024
EU-2 Unit 3	SO <sub>2</sub> Allowances under Tables 2, 3, or 4 of 40 CFR Part 73	3,345	3,345	3,345	3,345	3,345
	NO <sub>x</sub> Limit	Not an Affected Unit under 40 CFR Part 76				

c. Unit 4: 400 MW Combustion Engineering boiler rated at 4,684 MMBtu/hr

		2020	2021	2022	2023	2024
EU-3 Unit 4	SO <sub>2</sub> Allowances under Tables 2, 3, or 4 of 40 CFR Part 73	2,393	2,393	2,393	2,393	2,393
	NO <sub>x</sub> Limit	Not an Affected Unit under 40 CFR Part 76				

d. Unit 12: General Electric 50 MW Combustion Turbine Model LM6000PC

		2020	2021	2022	2023	2024
EU-8 Unit 12	SO <sub>2</sub> Allowances under Tables 2, 3, or 4 of 40 CFR Part 73	0	0	0	0	0
	NO <sub>x</sub> Limit	Not an Affected Unit under 40 CFR Part 76				

e. Unit 13: General Electric 50 MW Combustion Turbine Model LM6000PC

		2020	2021	2022	2023	2024
EU-9 Unit 13	SO <sub>2</sub> Allowances under Tables 2, 3, or 4 of 40 CFR Part 73	0	0	0	0	0
	NO <sub>x</sub> Limit	Not an Affected Unit under 40 CFR Part 76				

### Section III: Applicable Requirements and Compliance Demonstration

f. Unit 14: General Electric 50 MW Combustion Turbine Model LM6000PC

		2020	2021	2022	2023	2024
EU-10 Unit 14	SO <sub>2</sub> Allowances under Tables 2, 3, or 4 of 40 CFR Part 73	0	0	0	0	0
	NO <sub>x</sub> Limit	Not an Affected Unit under 40 CFR Part 76				

g. Unit 13: General Electric 50 MW Combustion Turbine Model LM6000PC

		2020	2021	2022	2023	2024
EU-11 Unit 15	SO <sub>2</sub> Allowances under Tables 2,3,or 4 of 40 CFR Part 73	0	0	0	0	0
	NO <sub>x</sub> Limit	Not an Affected Unit under 40 CFR Part 76				

#### 2. Phase II Acid Rain Permit Application

The attached Phase II Acid Rain Permit Application is hereby incorporated by reference into this Title V permit. If this Title V permit is in conflict with or inconsistent with the Phase II Acid Rain Permit Application, the Title V permit requirements, including any applicable requirement under 40 CFR Parts 72 through 78, inclusive, shall supersede the Phase II Acid Rain Permit Application and the Permittee shall be governed by and adhere to this Title V permit and any applicable requirement under 40 CFR Parts 72 through 78, inclusive.

#### F. PREMISES-WIDE GENERAL REQUIREMENTS

1. **Annual Emission Statements:** The Permittee shall submit annual emission statements requested by the commissioner as set forth in RCSA §22a-174-4(d)(1).
2. **Emission Testing:** The Permittee shall comply with the procedures for sampling, emission testing, sample analysis, and reporting as set forth in RCSA §22a-174-5.
3. **Emergency Episode Procedures:** The Permittee shall comply with the procedures for emergency episodes as set forth in RCSA §22a-174-6.
4. **Reporting of Malfunctioning Control Equipment:** The Permittee shall comply with the reporting requirements of malfunctioning control equipment as set forth in RCSA §22a-174-7.
5. **Prohibition of Air Pollution:** The Permittee shall comply with the requirement to prevent air pollution as set forth in RCSA §22a-174-9.
6. **Public Availability of Information:** The public availability of information shall apply, as set forth in RCSA §22a-174-10.
7. **Prohibition Against Concealment/Circumvention:** The Permittee shall comply with the prohibition against

### Section III: Applicable Requirements and Compliance Demonstration

concealment or circumvention as set forth in RCSA §22a-174-11.

8. **Violations and Enforcement:** The Permittee shall not violate or cause the violation of any applicable regulation as set forth in RCSA §22a-174-12.
9. **Variations:** The Permittee may apply to the commissioner for a variance from one or more of the provisions of these regulations as set forth in RCSA §22a-174-13.
10. **No Defense to Nuisance Claim:** The Permittee shall comply with the regulations as set forth in RCSA §22a-174-14.
11. **Severability:** The Permittee shall comply with the severability requirements as set forth in RCSA §22a-174-15.
12. **Responsibility to Comply:** The Permittee shall be responsible to comply with the applicable regulations as set forth in RCSA §22a-174-16.
13. **Particulate Emissions:** The Permittee shall comply with the standards for control of particulate matter and visible emissions as set forth in RCSA §22a-174-18.
14. **Fuel Sulfur Content:** The Permittee shall not use No. 2 heating oil that exceeds fifteen parts per million of sulfur by weight as set forth in CGS §16a-21a(a)(2)(B) .
15. **Sulfur Dioxide Emissions:** The Permittee shall comply with the requirements for Control of Sulfur Dioxide Emissions from Power Plants and other large stationary sources of air pollution as set forth in RCSA §22a-174-19a.
16. **Sulfur Compound Emissions:** The Permittee shall comply with the requirements for control of sulfur compound emissions as set forth in RCSA §§22a-174-19, 22a-174-19a and 22a-174-19b, as applicable.
17. **Organic Compound Emissions:** The Permittee shall comply with the requirements for control of organic compound emissions as set forth in RCSA §22a-174-20.
18. **Nitrogen Oxide Emissions:** The Permittee shall comply with the requirements for control of nitrogen oxide emissions as set forth in RCSA §22a-174-22e.
19. **Ambient Air Quality:** The Permittee shall not cause or contribute to a violation of an ambient air quality standard as set forth in RCSA §22a-174-24(b).
20. **Open Burning:** The Permittee is prohibited from conducting open burning, except as may be allowed by CGS §22a-174(f).
21. **Asbestos:** Should the premises, as defined in 40 CFR §61.145, become subject to the national emission standard for asbestos regulations in 40 CFR Part 61 Subpart M when conducting any renovation or demolition at this premises, then the Permittee shall submit proper notification as described in 40 CFR §61.145(b) and shall comply with all other applicable requirements of 40 CFR Part 61 Subpart M.
22. **Emission Fees:** The Permittee shall pay an emission fee as set forth in RCSA §22a-174-26(d).
23. **Fuel Oil Blending:** The DEEP has granted approval to the Permittee to receive, store, and blend fuel oil with greater than one half of one percent (0.5%) sulfur by dry weight in its non-operating, non-day tanks which are filled for daily burn, at the site, provided that the permittee complies with the following conditions:



### **Section III: Applicable Requirements and Compliance Demonstration**

- a. The Permittee shall maintain records of the volume and sulfur content by dry weight of any and all fuel transfers into, out of, and between tanks;
- b. The Permittee shall inform the DEEP in writing at least three days prior to transferring fuel with greater than one half of one percent (0.5%) sulfur dry weight from the facility to site(s) outside of Connecticut and shall specify the volume, percent (%) sulfur content by dry weight, and destination(s) of the fuel transferred;
- c. The Permittee shall not dispense, under any circumstances, any fuel with greater than one half of one percent (0.5%) sulfur content by dry weight or any non-conforming fuel from any tank for distribution to a fuel user in Connecticut. Any fuel with greater than one half of one percent (0.5%) sulfur dry weight at any facility shall only be transferred to sites outside of Connecticut, and never transferred to site(s) in Connecticut; and
- d. The Permittee shall designate one operating tank on the premises at all times to store fuel with one half of one percent (0.5%) sulfur by dry weight or less to supply its own generating units. Such operating tank(s) may be designated as any of the non-day tanks to allow for routine maintenance or repairs. Failure to maintain such records or failure to inform the DEEP of all transfers may result in the DEEP's revocation of approval.

**Section IV: Compliance Schedule**

<b>TABLE IV: COMPLIANCE SCHEDULE</b>				
<b>Emissions Unit</b>	<b>Applicable Regulations</b>	<b>Steps Required for Achieving Compliance (Milestones)</b>	<b>Date by which Each Step is to be Completed</b>	<b>Dates for Monitoring, Record Keeping, and Reporting</b>
		No Steps are required for achieving compliance at this time		

## Section V: State Enforceable Terms and Conditions

Only the Commissioner of the Department of Energy and Environmental Protection has the authority to enforce the terms, conditions and limitations contained in this section.

### SECTION V: STATE ENFORCEABLE TERMS AND CONDITIONS

- A. This Title V permit does not relieve the Permittee of the responsibility to conduct, maintain and operate the emissions units in compliance with all applicable requirements of any other Bureau of the Department of Energy and Environmental Protection or any federal, local or other state agency. Nothing in this Title V permit shall relieve the Permittee of other obligations under applicable federal, state and local law.
- B. Nothing in this Title V permit shall affect the commissioner's authority to institute any proceeding or take any other action to prevent or abate violations of law, prevent or abate pollution, investigate air pollution, recover costs and natural resource damages, and to impose penalties for violations of law, including but not limited to violations of this or any other permit issued to the Permittee by the commissioner.
- C. Additional Emissions Units
  - 1. The Permittee shall make and submit a written record, at the commissioner's request, within 30 days of receipt of notice from the commissioner, or by such other date specified by the commissioner, of each additional emissions unit or group of similar or identical emissions units at the premises.
  - 2. Such record of additional emissions units shall include each emissions unit, or group of emissions units, at the premises which is not listed in Section II.A of this Title V permit, unless the emissions unit, or group of emissions units, is:
    - a. an insignificant emissions unit as defined in RCSA §22a-174-33; or
    - b. an emissions unit or activity listed in *White Paper for Streamlined Development of Part 70 Permit Applications, Attachment A* (EPA guidance memorandum dated July 10, 1995).
  - 3. For each emissions unit, or group of emissions units, on such record, the record shall include, as available:
    - a. Description, including make and model;
    - b. Year of construction/installation or if a group, range of years of construction/installation;
    - c. Maximum throughput or capacity; and
    - d. Fuel type, if applicable.
- D. Odors: The Permittee shall not cause or permit the emission of any substance or combination of substances which creates or contributes to an odor that constitutes a nuisance beyond the property boundary of the premises as set forth in RCSA §22a-174-23.
- E. Noise: The Permittee shall operate in compliance with the regulations for the control of noise as set forth in RCSA §§22a-69-1 through 22a-69-7.4, inclusive.
- F. Hazardous Air Pollutants (HAPs): The Permittee shall operate in compliance with the regulations for the control of HAPs as set forth in RCSA §22a-174-29.
- G. The Permittee shall comply with the requirements for Control of Carbon Dioxide Emissions as set forth in RCSA §22a-174-31.

## **Section VI: Title V Requirements**

The Administrator of the United States Environmental Protection Agency and the Commissioner of the Department of Energy and Environmental Protection have the authority to enforce the terms and conditions contained in this section.

### **SECTION VI: TITLE V REQUIREMENTS**

#### **A. SUBMITTALS TO THE COMMISSIONER & ADMINISTRATOR**

The date of submission to the commissioner of any document required by this Title V permit shall be the date such document is received by the commissioner. The date of any notice by the commissioner under this Title V permit, including, but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is delivered or the date three days after it is mailed by the commissioner, whichever is earlier. Except as otherwise specified in this Title V permit, the word "day" means calendar day. Any document or action which is required by this Title V permit to be submitted or performed by a date which falls on a Saturday, Sunday or legal holiday shall be submitted or performed by the next business day thereafter.

Any document required to be submitted to the commissioner under this Title V permit shall, unless otherwise specified in writing by the commissioner, be directed to: Compliance Analysis and Coordination Unit, Bureau of Air Management, Department of Energy and Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.

Any submittal to the Administrator of the Environmental Protection Agency shall be submitted per the procedure required by the applicable requirement or otherwise in a computer-readable format and addressed to: Director, Enforcement and Compliance Assurance Division, U.S. EPA Region I, 5 Post Office Square, Suite 100 (Mailcode: 04-02), Boston, Massachusetts 02109-3912, Attn: Air Compliance Clerk.

#### **B. CERTIFICATIONS [RCSA §22a-174-33(b)]**

In accordance with RCSA §22a-174-33(b), any report or other document required by this Title V permit and any other information submitted to the commissioner or Administrator shall be signed by an individual described in RCSA §22a-174-2a(a), or by a duly authorized representative of such individual. Any individual signing any document pursuant to RCSA §22a-174-33(b) shall examine and be familiar with the information submitted in the document and all attachments thereto, and shall make inquiry of those individuals responsible for obtaining the information to determine that the information is true, accurate, and complete, and shall also sign the following certification as provided in RCSA §22a-174-2a(a)(4):

“I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under Section 22a-175 of the Connecticut General Statutes, under Section 53a-157b of the Connecticut General Statutes, and in accordance with any applicable statute.”

#### **C. SIGNATORY RESPONSIBILITY [RCSA §22a-174-2a(a)]**

For purposes of signing any Title V-related application, document, report or certification required by RCSA §22a-174-33, any corporation's duly authorized representative may be either a named individual or any individual occupying a named position. Such named individual or individual occupying a named position is a duly authorized representative if such individual is responsible for the overall operation of one or more manufacturing, production or operating facilities subject to RCSA §22a-174-33 and either:

## **Section VI: Title V Requirements**

1. The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding 25 million dollars in second quarter 1980 dollars; or
2. The delegation of authority to the duly authorized representative has been given in writing by an officer of the corporation in accordance with corporate procedures and the following:
  - i. Such written authorization specifically authorizes a named individual, or a named position, having responsibility for the overall operation of the Title V premises or activity,
  - ii. Such written authorization is submitted to the commissioner and has been approved by the commissioner in advance of such delegation. Such approval does not constitute approval of corporate procedures, and
  - iii. If a duly authorized representative is a named individual in an authorization submitted under subclause ii. of this subparagraph and a different individual is assigned or has assumed the responsibilities of the duly authorized representative, or, if a duly authorized representative is a named position in an authorization submitted under subclause ii. of this subparagraph and a different named position is assigned or has assumed the duties of the duly authorized representative, a new written authorization shall be submitted to the commissioner prior to or together with the submission of any application, document, report or certification signed by such representative.

### **D. ADDITIONAL INFORMATION [RCSA §22a-174-33(j)(1)(X), RCSA §22a-174-33(h)(2)]**

The Permittee shall submit additional information in writing, at the commissioner's request, within 30 days of receipt of notice from the commissioner or by such other date specified by the commissioner, whichever is earlier, including information to determine whether cause exists for modifying, revoking, reopening, reissuing, or suspending this Title V permit or to determine compliance with this Title V permit.

In addition, the Permittee shall submit information to address any requirements that become applicable to the subject source and shall submit correct, complete, and sufficient information within 15 days of the applicant's becoming aware of any incorrect, incomplete, or insufficient submittal, during the pendency of the application, or any time thereafter, with an explanation for such deficiency and a certification pursuant to RCSA §22a-174-2a(a)(5).

### **E. MONITORING REPORTS [RCSA §22a-174-33(o)(1)]**

A Permittee, required to perform monitoring pursuant to this Title V permit, shall submit to the commissioner, on forms prescribed by the commissioner, written monitoring reports on March 1 and September 1 of each year or on a more frequent schedule if specified in such permit. Such monitoring reports shall include the date and description of each deviation from a permit requirement including, but not limited to:

1. Each deviation caused by upset or control equipment deficiencies; and
2. Each deviation of a permit requirement that has been monitored by the monitoring systems required under this Title V permit, which has occurred since the date of the last monitoring report; and
3. Each deviation caused by a failure of the monitoring system to provide reliable data.

## **Section VI: Title V Requirements**

### **F. PREMISES RECORDS [RCSA §22a-174-33(o)(2)]**

Unless otherwise required by this Title V permit, the Permittee shall make and keep records of all required monitoring data and supporting information for at least five years from the date such data and information were obtained. The Permittee shall make such records available for inspection at the site of the subject source, and shall submit such records to the commissioner upon request. The following information, in addition to required monitoring data, shall be recorded for each permitted source:

1. The type of monitoring or records used to obtain such data, including record keeping;
2. The date, place, and time of sampling or measurement;
3. The name of the individual who performed the sampling or the measurement and the name of such individual's employer;
4. The date(s) on which analyses of such samples or measurements were performed;
5. The name and address of the entity that performed the analyses;
6. The analytical techniques or methods used for such analyses;
7. The results of such analyses;
8. The operating conditions at the subject source at the time of such sampling or measurement; and
9. All calibration and maintenance records relating to the instrumentation used in such sampling or measurements, all original strip-chart recordings or computer printouts generated by continuous monitoring instrumentation, and copies of all reports required by the subject permit.

### **G. PROGRESS REPORTS [RCSA §22a-174-33(q)(1)]**

The Permittee shall, on March 1 and September 1 of each year, or on a more frequent schedule if specified in this Title V permit, submit to the commissioner a progress report on forms prescribed by the commissioner, and certified in accordance with RCSA §22a-174-2a(a)(5). Such report shall describe the Permittee's progress in achieving compliance under the compliance plan schedule contained in this Title V permit. Such progress report shall:

1. Identify those obligations under the compliance plan schedule in this Title V permit which the Permittee has met, and the dates on which they were met; and
2. Identify those obligations under the compliance plan schedule in this Title V permit which the Permittee has not timely met, explain why they were not timely met, describe all measures taken or to be taken to meet them and identify the date by which the Permittee expects to meet them.

Any progress report prepared and submitted pursuant to RCSA §22a-174-33(q)(1) shall be simultaneously submitted by the Permittee to the Administrator.

## Section VI: Title V Requirements

### H. COMPLIANCE CERTIFICATIONS [RCSA §22a-174-33(q)(2)]

The Permittee shall, on March 1 of each year, or on a more frequent schedule if specified in this Title V permit, submit to the commissioner a written compliance certification certified in accordance with RCSA §22a-174-2a(a)(5) and which includes the information identified in 40 CFR §§70.6(c)(5)(iii)(A) to (C), inclusive.

Any compliance certification prepared and submitted pursuant to RCSA §22a-174-33(q)(2) shall be simultaneously submitted by the Permittee to the Administrator.

### I. PERMIT DEVIATION NOTIFICATIONS [RCSA §22a-174-33(p)]

Notwithstanding Section VI.E. of this Title V permit, the Permittee shall notify the commissioner in writing, on forms prescribed by the commissioner, of any deviation from an emissions limitation, and shall identify the cause or likely cause of such deviation, all corrective actions and preventive measures taken with respect thereto, and the dates of such actions and measures as follows:

1. For any hazardous air pollutant, no later than 24 hours after such deviation commenced; and
2. For any other regulated air pollutant, no later than ten days after such deviation commenced.

### J. PERMIT RENEWAL [RCSA §22a-174-33(j)(1)(B)]

All of the terms and conditions of this Title V permit shall remain in effect until the renewal permit is issued or denied provided that a timely renewal application is filed in accordance with RCSA §§22a-174-33(g), -33(h), and -33(i).

### K. OPERATE IN COMPLIANCE [RCSA §22a-174-33(j)(1)(C)]

The Permittee shall operate the source in compliance with the terms of all applicable regulations, the terms of this Title V permit, and any other applicable provisions of law. In addition, any noncompliance constitutes a violation of the Clean Air Act and Chapter 446c of the Connecticut General Statutes and is grounds for federal and/or state enforcement action, permit termination, revocation and reissuance, or modification, and denial of a permit renewal application.

### L. COMPLIANCE WITH PERMIT [RCSA §22a-174-33(j)(1)(G)]

This Title V permit shall not be deemed to:

1. Preclude the creation or use of emission reduction credits or allowances or the trading thereof in accordance with RCSA §§22a-174-33(j)(1)(I) and -33(j)(1)(P), provided that the commissioner's prior written approval of the creation, use, or trading is obtained;
2. Authorize emissions of an air pollutant so as to exceed levels prohibited pursuant to 40 CFR Part 72;
3. Authorize the use of allowances pursuant to 40 CFR Parts 72 through 78, inclusive, as a defense to noncompliance with any other applicable requirement; or
4. Impose limits on emissions from items or activities specified in RCSA §§22a-174-33(g)(3)(A) and -33(g)(3)(B) unless imposition of such limits is required by an applicable requirement.

## Section VI: Title V Requirements

### **M. INSPECTION TO DETERMINE COMPLIANCE [RCSA §22a-174-33(j)(1)(M)]**

The commissioner may, for the purpose of determining compliance with this Title V permit and other applicable requirements, enter the premises at reasonable times to inspect any facilities, equipment, practices, or operations regulated or required under such permit; to sample or otherwise monitor substances or parameters; and to review and copy relevant records lawfully required to be maintained at such premises in accordance with this Title V permit. It shall be grounds for permit revocation should entry, inspection, sampling, or monitoring be denied or effectively denied, or if access to and the copying of relevant records is denied or effectively denied.

### **N. PERMIT AVAILABILITY**

The Permittee shall have available at the facility at all times a copy of this Title V permit.

### **O. SEVERABILITY CLAUSE [RCSA §22a-174-33(j)(1)(R)]**

The provisions of this Title V permit are severable. If any provision of this Title V permit or the application of any provision of this Title V permit to any circumstance is held invalid, the remainder of this Title V permit and the application of such provision to other circumstances shall not be affected.

### **P. NEED TO HALT OR REDUCE ACTIVITY [RCSA §22a-174-33(j)(1)(T)]**

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Title V permit.

### **Q. PERMIT REQUIREMENTS [RCSA §22a-174-33(j)(1)(V)]**

The filing of an application or of a notification of planned changes or anticipated noncompliance does not stay the Permittee's obligation to comply with this Title V permit.

### **R. PROPERTY RIGHTS [RCSA §22a-174-33(j)(1)(W)]**

This Title V permit does not convey any property rights or any exclusive privileges. This Title V permit is subject to, and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the facility or regulated activity affected thereby, including CGS §4-181a(b) and RCSA §22a-3a-5(b). This Title V permit shall neither create nor affect any rights of persons who are not parties to this Title V permit.

### **S. ALTERNATIVE OPERATING SCENARIO RECORDS [RCSA §22a-174-33(o)(3)]**

The Permittee shall, contemporaneously with making a change authorized by this Title V permit from one alternative operating scenario to another, maintain a record at the premises indicating when changes are made from one operating scenario to another and shall maintain a record of the current alternative operating scenario.



## **Section VI: Title V Requirements**

### **T. OPERATIONAL FLEXIBILITY AND OFF-PERMIT CHANGES [RCSA §22a-174-33(r)(2)]**

The Permittee may engage in any action allowed by the Administrator in accordance with 40 CFR §§70.4(b)(12)(i) to (iii)(B), inclusive, and 40 CFR §§70.4(b)(14)(i) to (iv), inclusive, without a Title V non-minor permit modification, minor permit modification or revision and without requesting a Title V non-minor permit modification, minor permit modification or revision provided such action does not:

1. Constitute a modification under 40 CFR Part 60, 61 or 63;
2. Exceed emissions allowable under the subject permit;
3. Constitute an action which would subject the Permittee to any standard or other requirement pursuant to 40 CFR Parts 72 to 78, inclusive; or
4. Constitute a non-minor permit modification pursuant to RCSA §22a-174-2a(d)(4).

At least seven days before initiating an action specified in RCSA §22a-174-33(r)(2)(A), the Permittee shall notify the Administrator and the commissioner in writing of such intended action.

### **U. INFORMATION FOR NOTIFICATION [RCSA §22a-174-33(r)(2)(A)]**

Written notification required under RCSA §22a-174-33(r)(2)(A) shall include a description of each change to be made, the date on which such change will occur, any change in emissions that may occur as a result of such change, any Title V permit terms and conditions that may be affected by such change, and any applicable requirement that would apply as a result of such change. The Permittee shall thereafter maintain a copy of such notice with the Title V permit. The commissioner and the Permittee shall each attach a copy of such notice to their copy of the Title V permit.

### **V. TRANSFERS [RCSA §22a-174-2a(g)]**

No person other than the Permittee shall act or refrain from acting under the authority of this Title V permit unless such permit has been transferred to another person in accordance with RCSA §22a-174-2a(g).

The proposed transferor and transferee of a permit shall submit to the commissioner a request for a permit transfer on a form provided by the commissioner. A request for a permit transfer shall be accompanied by any fees required by any applicable provision of the general statutes or regulations adopted thereunder. The commissioner may also require the proposed transferee to submit with any such request, the information identified in CGS §22a-6o.

### **W. REVOCATION [RCSA §22a-174-2a(h)]**

The commissioner may revoke this Title V permit on his own initiative or on the request of the Permittee or any other person, in accordance with CGS §4-182(c), RCSA §22a-3a-5(d), and any other applicable law. Any such request shall be in writing and contain facts and reasons supporting the request. The Permittee requesting revocation of this Title V permit shall state the requested date of revocation and provide evidence satisfactory to the commissioner that the subject source is no longer a Title V source.

Pursuant to the Clean Air Act, the Administrator has the power to revoke this Title V permit. Pursuant to the Clean Air Act, the Administrator also has the power to reissue this Title V permit if the Administrator has determined that the commissioner failed to act in a timely manner on a permit renewal application.

## **Section VI: Title V Requirements**

This Title V permit may be modified, revoked, reopened, reissued, or suspended by the commissioner, or the Administrator in accordance with RCSA §22a-174-33(r), CGS §22a-174c, or RCSA §22a-3a-5(d).

### **X. REOPENING FOR CAUSE [RCSA §22a-174-33(s)]**

This Title V permit may be reopened by the commissioner, or the Administrator in accordance with RCSA §22a-174-33(s).

### **Y. CREDIBLE EVIDENCE**

Notwithstanding any other provision of this Title V permit, for the purpose of determining compliance or establishing whether a Permittee has violated or is in violation of any permit condition, nothing in this Title V permit shall preclude the use, including the exclusive use, of any credible evidence or information.

# MEMORANDUM

DATE: 01/28/22

Application No.: 202110301

TO: Tracy Babbidge, Bureau Chief

Date Received: 10/01/2021

FROM: James Grillo, APCE  
Louis J. Corsino III, Supervising APCE  
Jaimeson Sinclair, Director

SUBJECT: Revision to Permit No. 104-0106-TV for Middletown Power LLC, Milford, CT

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Middletown Power LLC, has submitted a Title IV/V revision application for their Middletown facility due to the sale of the facility to Generation Bridge Acquisition, LLC on December 1, 2021. The requested change constitutes a revision pursuant to RCSA §22a-174-2a(f)(2)(B) & (E), where the Responsible Official is changing and to reflect the transfer of ownership.

Mr. Kurt Huizing has been named as the responsible official for Middletown Power by Mr. Ali Khurram, Sr. Vice President of Operations & Engineering, Generation Bridge Acquisition, LLC. (see letter from A. Khurram to K. Huizing, dated [12/22/2021](#); see Written Authorization Form ([DEEP-TV-SIG-REG-002](#)))

The applicant also submitted a new [Acid Rain Permit](#) application which was signed by Mr. Andrew Oliver. A check of [CAMD](#) Data Base indicates that Mr. Oliver is the Acid Rain Signatory for Devon Power.

Public notice, public comment or hearing will not be required for this revision pursuant to RCSA §22a-174-2a(f)(3).

The compliance record was reviewed in accordance with the Environmental Compliance History Policy. The applicant's submitted compliance information form was reviewed along with agency records for information to evaluate the applicant's compliance history and the relevance of such history to the activity for which authorization is being sought. Additionally, a review of air program compliance was requested from the Enforcement Section and that response forms a part of this record.

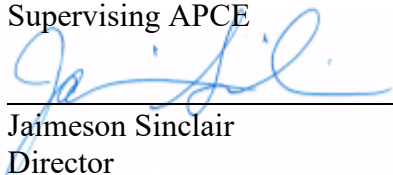
/s/James Grillo  
James Grillo, APCE

01/28/2022  
Date

Approvals:

/s/ Louis J. Corsino III  
Louis J. Corsino III  
Supervising APCE

2/2/2022  
Date

  
Jaimeson Sinclair  
Director

02/16/2022  
Date

February 28, 2022

Mr. Kurt Huizing  
Middletown Power LLC  
c/o Eastern Generation, LLC  
300 Atlantic Street, 5<sup>th</sup> Floor  
Stamford, CT 06901  
[khuizing@camsops.com](mailto:khuizing@camsops.com)

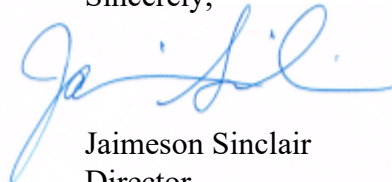
Dear Mr. Huizing:

Enclosed is a certified copy of your revised original combined Title V and Title IV permit to operate at 1866 River Road, Middletown, CT.

This letter does not relieve you of the responsibility to comply with the requirements of other appropriate Federal, State, and municipal agencies. The permit is not transferable from one permittee to another (without prior written notification).

Permit renewal applications must be filed at least 12 months prior to the permit expiration date, if applicable. Pursuant to Section 22a-174-33 of the Regulations of Connecticut State Agencies, Middletown Power LLC must apply for a permit modification in writing if it plans any physical change, change in method of operation, or addition to this source. Any such changes should first be discussed with James Grillo of the Bureau of Air Management, at [james.grillo@ct.gov](mailto:james.grillo@ct.gov) or (860) 424-4152. Such changes shall not commence prior to the issuance of a permit modification.

Sincerely,



Jaimeson Sinclair  
Director  
Engineering Division  
Bureau of Air Management

JS:JAG:jad  
cc (via electronic mail): Ali Khurram, Generation Bridge Acquisition, LLC;  
[akhurram@easterngen.com](mailto:akhurram@easterngen.com)  
Enclosure