# August 23, 2022

Mr. George Korvah, Environmental Manager

Environmental & Water Chemistry Branch

GSA Heating Operations & Transmission District

U.S. General Services Administration (GSA)

13th and C Streets SW

Washington DC 20407

**RE: Permit No. 5197-R1 to Operate a Cogeneration System Consisting of Two 58 MMBTU/hr (LHV) Combustion Turbines and Modified Boiler #5 with a Natural Gas-fired Duct Burner System Rated at 190 MMBTU/hr (LHV), at the Central Heating and Refirigeration Plant**

Dear Mr. Korvah:

Pursuant to sections 200.1 and 200.2 of Title 20 of the District of Columbia Municipal Regulations (20 DCMR), a permit from the Department of Energy and Environment (the Department) shall be obtained before any person may construct and operate a stationary source in the District of Columbia. The renewal application of the U.S. General Services Administration (GSA), Central Heating and Refrigeration Plant (the Permittee) to operate the cogeneration system at the Permittee’s facility located at 325 13th Street SW, Washington DC, per the submitted plans and specifications, has been reviewed. The cogeneration system consists of the following significant components:

|  |  |  |  |
| --- | --- | --- | --- |
| Equipment Location | Equipment Size | Description | Permit Number |
| GSA-Central Heating and Refrigeration Plant | Two (2) 58 MMBTU/hr LHV basis (approximately 64 MMBTU/hr HHV basis) combustion turbines | Two Dual fuel Solar Taurus Turbine 60 T7300S combustion turbines (natural gas and No. 2 fuel oil), identified as CT1 and CT2 | 5197-R1 |
| Natural gas-fired duct burner system with six burner elements with a combined rating of 190 MMBTU/hr heat input LHV basis (approximately 211 MMBTU/hr HHV basis) | Modified (converted) Zurn Boiler #5 with installed natural gas-fired duct burners |

Based on the submitted plans and specifications as detailed in the application package dated July 19, 2018 (received July 23, 2019) your application to operate the cogeneration system are hereby approved subject to the following conditions:

**I.** **General Requirements:**

1. The equipment shall be operated in compliance with applicable air pollution control requirement of 20 DCMR.

b. This permit expires on August 22, 2027 [20 DCMR 200.4]. If continued operation after this date is desired, the Permittee shall submit an application for renewal by April 22, 2027.

c. Operation of equipment under the authority of this permit shall be considered acceptance of its terms and conditions.

1. The Permittee shall allow authorized officials of the Department, upon presentation of identification, to:

1. Enter upon the Permittee’s premises where a source or emission unit is located, an emissions related activity is conducted, or where records required by this permit are kept;

2. Have access to and copy, at reasonable times, any records that must be kept under the terms and conditions of this permit;

3. Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and

4. Sample or monitor, at reasonable times, any substance or parameter for the purpose of assuring compliance with this permit or any applicable requirement.

e. This permit shall be kept on the premises and produced upon request.

f. Failure to comply with the provisions of this permit may be grounds for suspension or revocation. [20 DCMR 202.2]

g. The Permittee has already included the equipment covered by this permit in a complete application for a renewal and update of the facility’s existing Title V operating permit, pursuant to 20 DCMR 301.1(a)(2). As a condition of this Chapter 2 permit, the requirements of this Chapter 2 permit, updated as determined appropriate during the Title V renewal process, will be incorporated into the Title V operating permit upon completion of the renewal action. The Department may require submission of any additional relevant information related to this equipment as part of the Title V renewal process, as deemed necessary pursuant to 20 DCMR 301.1(b)(3).

**II**. **Emission Limitations:**

1. Emissions from the equipment covered by this permit shall not exceed those specified in the following table [20 DCMR 201]:

|  |  |  |  |
| --- | --- | --- | --- |
| **Allowable Emissions (lb/hr)** | | | |
| **Pollutant** | **Each Combustion Turbine** | | **Additional Allowable when Operating Duct Burners** |
| **Burning Natural Gas** | **Burning No. 2 Fuel Oil** |
| Carbon Monoxide (CO) | 5.25 | 0.21 | 17.38 |
| Total Particulate Matter (PM total)† | 4.16 | 4.16 | 9.92‡ |

† PM Total includes both filterable and condensable fractions.

‡ This is a streamlined limit. The limit established pursuant to 20 DCMR 201 for duct burner emissions of PM Total is more stringent than that for total filterable particulate matter (also known as total suspended particulate matter or TSP) found in 20 DCMR 600.1, thus compliance with this limit will also ensure compliance with 20 DCMR 600.1.

b. Except as specified in Condition II(c), the Permittee shall not discharge into the atmosphere from each of the combustion turbines any gas which contain nitrogen oxides (NOx) in excess of [40 CFR 60.332(a)(2) and (c)]:

Where:

STD = allowable ISO corrected (if required as given in 40 CFR 60.335(b)(1)[[1]](#footnote-1)) NOx emission concentration (percent by volume at 15 percent oxygen and on a dry basis);

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

F = NOx emissions allowance for fuel-bound nitrogen as defined in 40 CFR 60.332(a)(4)[[2]](#footnote-2).

c. The Permittee is exempt from compliance with Condition II(b) when burning No. 2 fuel oil, as long as compliance with Condition III(b) is maintained. [40 CFR 60.332(k)]

d. Emissions of NOx shall comply with the following:

1. Emissions from each stationary combustion turbine alone shall not be greater than [20 DCMR 805.4(a)(2)(A)]:

i. Twenty-five (25) ppmvd, corrected to fifteen percent (15%) O2 when fired on any combination of gaseous fuels; and

ii. The Permittee shall comply with Conditions III(a) through (d) and V(e) and (f) in lieu of complying with the standard specified in 20 DCMR 805.4(a)(2)(A)(ii);

2. Emissions from any stationary combustion turbine and all duct burners combined shall not be greater than twenty hundredths (0.20) pounds per million BTU, based on a calendar day average, when fired on any fuel or combination of fuels [20 DCMR 805.4(a)(2)(B)]; and

3. Emissions from the equipment covered by this permit (the two combustion turbines plus the duct burners), combined with Boilers 3 and 4 at the facility, shall not exceed 25 tons per control period. The control period is defined as the period beginning May 1st of each year and ending on September 30th of the same year, inclusive [20 DCMR 1001.1 and 20 DCMR 1099.1]; and

4. Emissions from either combustion turbine, alone or in combination with the duct burners, shall not exceed [20 DCMR 804.1 and 20 DCMR Chapter 8, Appendix 8-1]:

i. Two tenths (0.2) lb. per million BTU heat input (0.36 g. per million cal.) maximum two (2) hour average, expressed in NO2, when natural gas is burned: and

ii. Three tenths (0.3) lb. per million BTU heat input (0.54 g. per million cal.) maximum two (2) hour average, expressed as NO2, when No. 2 fuel oil is burned.

5. NOx emissions from the system, expressed as NO2, whenever the duct burners are running, on a 30-day rolling average basis, shall not exceed 0.20 lb/MMBTU. [40 CFR 60.40b(i), 40 CFR 60.44b(a)(4)(i), 40 CFR 60.46b(f)(2)]

e. Visible emissions whose opacity is in excess of five percent (5%) (unaveraged) shall not be emitted into the outdoor atmosphere from the equipment covered by this permit; provided that discharges not exceeding forty percent (40%) opacity (unaveraged) shall be permitted for two (2) minutes in any sixty (60) minute period and for an aggregate of twelve (12) minutes in any twenty-four hour (24 hr.) period during start-up, cleaning, soot blowing, adjustment of combustion controls, or malfunction of equipment. [20 DCMR 606.1 and 606.3]

*Note that 20 DCMR 606 is subject to an EPA-issued call for a State Implementation Plan (SIP) revision (known as a “SIP call”) requiring the District to revise 20 DCMR 606. See “State Implementation Plans: Response to Petition for Rulemaking; Restatement and Update of EPA’s SSM Policy Applicable to SIPs; Findings of Substantial Inadequacy; and SIP Calls To Amend Provisions Applying to Excess Emissions During Periods of Startup, Shutdown and Malfunction”, 80 Fed. Reg. 33840 (June 12, 2015). It is likely that this federal action will result in changes to the requirements of 20 DCMR 606. Any such changes, once finalized in the DCMR, will supersede the language of Condition II(e) as stated above.*

f. Total suspended particulate matter (TSP) (also known as total filterable PM) emissions from the cogeneration system, when the duct burners are operational, shall not exceed 0.05 pounds per MMBTU. [20 DCMR 600.1]

g. Total particulate matter (total filterable plus condensable fractions) shall not be emitted from the combustion turbines, when operating alone, in excess of 0.065 pounds per MMBTU. [20 DCMR 201; reference also previous permit 5197, Table 1]

h. An emission into the atmosphere of odorous or other air pollutants from any source in any quantity and of any characteristic, and duration which is, or is likely to be injurious to the public health or welfare, or which interferes with the reasonable enjoyment of life or property is prohibited. [20 DCMR 903.1]

**III. Operational Limitations:**

a. The Permittee shall burn only natural gas (as defined in 40 CFR 60.41b[[3]](#footnote-3) in the duct burners. [40 CFR 60.42b(k)(2)]

b. The Permittee shall burn natural gas (as defined in 40 CFR 60.331(u)[[4]](#footnote-4)) as the primary fuel in the combustion turbines. The back-up fuel for the combustions turbines, which shall be considered an “emergency fuel” for purposes of 40 CFR 60.332(k), shall be No. 2 fuel oil that complies with the requirements of Condition III(d) and shall only be burned in the following circumstances [20 DCMR 201 and 20 DCMR 805.4(a)(2)(D)]:

1. During periods of gas curtailment;

2. During periods of gas supply interruption; or

3. For periodic testing, maintenance, or operator training on liquid fuel not to exceed a combined total of 48 hours during any calendar year.

*Streamlining note: Compliance with this condition and Condition III(d) is also considered compliance with the less stringent requirements of 20 DCMR 801.1 and 40 CFR 60.333.*

c. The duct burners shall not be operated when the combustion turbines are operating on No. 2 fuel oil.

d. The sole back-up fuel burned in the combustion turbines shall be No. 2 fuel oil with a maximum sulfur content of 15 ppm (0.0015% by weight) by weight sulfur [20 DCMR 201, 20 DCMR 801.3, 20 DCMR 805.4(a)(2)(A)(ii) and (D)(i); and 40 CFR 60.333(b)]. *Note that this is a streamlined requirement. The standard reflected here is consistent with that specified in the listed District regulations and more stringent than that found in 40 CFR 60.333(b), thus compliance with this standard will ensure compliance with the latter federal standard.*

e. No. 2 fuel oil use in all equipment at the Central Heating and Refrigeration Plant facility, including equipment not otherwise covered by this permit, shall not exceed 4,435,035 gallons in any 12-month rolling period. [20 DCMR 201, also reference Condition B(a) of Title V Permit #032, dated July 28, 2000, which references “District Permit, October 1997” and 40 CFR 52.470(d) which adopts portions of the same permit issued October 17, 1997]

f. The Permittee shall tune up the combustion processes of the cogeneration system, including both combustion turbines and duct burners each calendar year, not to exceed 13 months from the date of the last tune-up, or within 30 days of start up for any unit not operating on the required date for the tune-up. These adjustments shall be performed while burning the type of fuel that provided the majority of the heat input to the equipment over the 12 months prior to the adjustment. Persons performing the tune-ups shall, at a minimum [20 DCMR 805.8(a) and (b), 40 CFR 63 Subpart DDDDD: 40 CFR 63.7500(a)(1) and (e), 63.7540(a)(10), Table 3(3)]:

1. As applicable, inspect the burner, and clean or replace any components of the burner as necessary for proper operation;

2. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer’s specifications, if available;

3. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly;

4. Optimize total emissions of NOx, and to the extent possible, CO. This optimization should be consistent with the manufacturer’s specifications, if available, and shall be consistent with any NOx and CO requirements to which the unit is subject; and

4. Measure the concentrations in the effluent stream of CO and NOx in ppmvd and O2 in percent by volume dry basis, before and after the adjustments are made. Measurements may be taken using a portable analyzer;

5. Adjustments shall be made such that the maximum emission rate for any contaminant does not exceed the maximum allowable emission rate as set forth in this permit.

*Note that this is a streamlined permit condition combining the requirements of 20 DCMR 805.9 and 40 CFR 63.7540(a)(10). Compliance with these requirements in combination with Condition V(l) will ensure compliance with both adjustment/tuning requirements.*

g. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, maintain and operate the units in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether acceptable operating procedures are being used will be based on information available to the Department which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. [20 DCMR 201 and 40 CFR 63.7500(a)(3)]

h. The Permittee shall not operate the duct burner system in Boiler 5 for more than eleven (11) months per calendar year. The one-month shutdown shall occur during a thirty-consecutive-day period between April 1 and November 1 of each year. [District Permit, October 1997]

**IV. Monitoring and Testing Requirements:**

a. For the cogeneration system, the Permittee shall install, calibrate, maintain, and operate continuous emission monitoring systems (CEMS) for measuring NOx and O2 (or CO2) emissions discharged to the atmosphere, so as to determine compliance with the NOx emission standards contained in Condition II of this permit as follows: [20 DCMR 501.1, 20 DCMR 805.4(b)(1); 40 CFR 60.48b(b), (c), (d), (e), (f), and (g)(1)]

1. The CEMS shall comply with the CEMS provisions of 40 CFR 75, Subpart H for determining compliance with Condition II(d)(3). [20 DCMR 1002.1]

2. In order to show compliance with Condition II(b), the CEMS procedures in Condition IV(a)(1) shall be used, except that the missing data substitution methodology provided for at 40 CFR 75, Subpart D is not required for purposes of identifying excess emissions. Instead, periods of missing CEMS data are to be reported as monitor downtime in the excess emissions and monitoring performance report required in Condition VI(d). [40 CFR 60.334(b)(3)(iii)]

3. In order to show compliance with Condition II(d)(5):

i. The CEMS procedures in Condition IV(a)(1) shall be used, except that the Permittee shall also meet the requirements of 40 CFR 60.49b as incorporated throughout this permit [40 CFR 60.48b(b)(2)];

ii. Data reported to meet the requirements of 40 CFR 60.49b shall not include data substituted using the missing data procedures in 40 CFR 75, Subpart D, nor shall the data have been bias adjusted according to the procedures in 40 CFR 75 [40 CFR 60.48b(b)(2)]; and

iii. The CEMS shall be operated and data recorded during all periods of operation of the cogeneration system to which it is associated, except for CEMS breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments. [40 CFR 60.48b(c)]

iv. The 1-hour average NOx rates measured by the continuous NOx monitor required by Condition IV(a) shall be expressed in lb/MMBTU heat input and shall be used to calculate average emission rates under Condition II(d)(5). The 1-hour averages shall be calculated using the data points required under Condition IV(a)(3)(v). [40 CFR 60.48b(d)]

v. One-hour averages of NOx shall be computed as follows, except that the provisions pertaining to the validation of partial operating hours are only applicable for affected facilities that are required by 40 CFR 60, Supart Db to include partial hours in the emission calculations [40 CFR 60.13(h)(2)]:

A. Except as provided under Condition IV(a)(3)(v)(C), for a full operating hour (any clock hour with 60 minutes of unit operation), at least four valid data points are required to calculate the hourly average, i.e., one data point in each of the 15-minute quadrants of the our.

B. Except as provided under Condition IV(a)(3)(v)(C), for a partial operating hour (any clock hour with less than 60 minutes of unit operation), at least one valid data point in each 15-mnute quadrant of the hour in which the unit operates is required to calculate the hourly average.

C. For any operating hour in which required maintenance or quality-assurance activities are performed:

1. If the unit operates in two or more quadrants of the hour, a minimum of two valid data points, separated by at least 15 minutes, is required to calculate the hourlay average; or

2. If the unit operates in only one quadrant of the hour, at least one valid data point is required to calculate the hourly average.

D. If a daily calibration error check is failed during any operating hour, all data for that hour shall be invalidated, unless a subsequent calibration error test is passed in the same hour and the requirements of Condition IV(a)(3)(v)(C) are met, based solely on valid data recorded after the successful calibration.

E. For each full or partial operating hour, all valid data points shall be used to calculate the hourly average.

F. Except as provided under Condition IV(a)(3)(v)(G), data recorded during periods of continuous monitoring system breakdown, repair, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this permit condition.

G. Owners and operators complying with the requirements of 40 CFR 60.7(f)(1) or (2) must include any data recorded during periods of monitor breakdown or malfunction in the data averages.

H. When specified in an applicable subpart, hourly averages for certain partial operating hours shall not be computed or included in the emission averages (e.g., hours with < 30 minutes of unit operation under 40 CFR 60.47b(d)).

I. Either arithmetic or integrated averaging of all data may be used to calculate the hourly averages. The data may be recorded in reduced or nonreduced form (e.g., ppm pollutant and percent O2 or ng/J of pollutant).

vi. All excess emissions shall be converted into lb/MMBTU using the applicable conversion procedures specified in the 40 CFR 60, Subpart Db. After conversion into lb/MMBTU, the data may be rounded to the same number of significant digits used in Condition III(e)(5) used to specify the emission limit. [40 CFR 60.13(h)(3)]

vii. The Permittee shall use the NOx span values determined and rounded according to 40 CFR 75, Appendix A, Section 2.1.2. [40 CFR 60.48b(e)(2)(ii) and 40 CFR 60.48b(e)(3)].

viii. When NOx emission data are not obtained because of CEMS breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using standby monitoring systems, Method 7 of 40 CFR 60, Appendix A, Method 7A of 40 CFR 60, Appendix A, or other approved reference methods to provide emission data for a minimum of 75 percent of the operating hours in each steam generating unit operating day[[5]](#footnote-5), in at least 22 out of 30 successive steam generating unit operating days. [40 CFR 60.48b(f)]

4. In order to show compliance with Conditions II(d)(1) and (2), the Permittee shall comply with Condition IV(a)(1) and the emissions monitoring system shall also do the following [20 DCMR 805.4(b)(1)]:

i. Continuously monitor the NOx emission rate from the major stationary source;

ii. Continuously record the NOx emission rate from the major stationary source;

iii. Be installed and operated in a manner approved by the Department and acceptable to the EPA; and

iv. Demonstrate that the NOx emission rate does not exceed the applicable maximum allowable NOx emission rates specified in Conditions II(d)(1) and (2).

*Note that Condition IV(a)(4) is a streamlined monitoring requirement. 20 DCMR 805.10(a)(1)(A) requires that if CEMS are used to demonstrate compliance with 20 DCMR 805, the CEMS must satisfy the requirements of 40 CFR 60, Appendix B as applicable to NOx monitoring, except that if 20 DCMR 1002 is applicable, the Permittee has the option to comply with the procedures set forth in 40 CFR 75 (this option was added to the regulation at the time of a 2021 revision to the regulation). Meanwhile, the October 17, 1997 District Permit adopted into the State Implementation Plan (SIP) at 40 CFR 52.470 requires use of NOx and O2 (or CO2) CEMS complying with 40 CFR 60, Appendix B and quality assured in accordance with 40 CFR 60, Appendix F (Condition 7) (though no NOx standards found in this permit were adopted into the SIP and the unit has since been reconstructed ). The Department has determined that compliance with the CEMS requirements of 40 CFR 75, Appendix H, combined with the above adjustments/requirements is at least as stringent as compliance with 40 CFR 60, Appendices B and F while allowing for streamlined monitoring with Conditions IV(a)(1) through (3). Note also that, per the September 1993 EPA Memo: “Use of Acid Rain CEMS as NSPS CEMS” from John B. Rasnic, Director, Stationary Source Compliance Division (SSCD), OAQPS, “SSCD has determined that since the CEMS requirements of 40 CFR Part 75 are equivalent to or more stringent than the requirements of 40 CFR Part 60, EPA can accept Acid Rain CEMSs as NSPS CEMSs provided that the utility demonstrates compliance with all applicable NSPS regulations.” Also note that similar determinations, with slight exceptions were made during revisions of 40 CFR 60, Subpart GG (see 69 FR 41345, published July 8 2004, as reflected at 40 CFR 60.334(b)(3)(iii) and Condition IV(a)(2) of this permit, and revisions of 40 CFR 60, Subpart Db (see 63 FR 49442, published September 16, 1998, as reflected at 40 CFR 60.48b(b)(2) and Condition IV(a)(3) of this permit.*

5. In order to show compliance with Condition II(d)(4), the Permittee may use the one-hour averages computed pursuant to Condition IV(a)(3)(iv) for direct comparison to the standards or may use separately calculated 2-hour averages calculated by a similar methodology. [20 DCMR 501.1]

6. Calendar day averages for determining compliance with Condition II(d)(2) shall be calculated by averaging all one-hour averages during which operation occurred and a valid one-hour average was calculated pursuant to Condition IV(a)(3)(iv) unless another method of averaging is approved in writing by the Department. [20 DCMR 501.1]

b. For the cogeneration system, the Permittee shall install, calibrate, maintain, and operate a continuous opacity monitoring system (COMS) for measuring the opacity of emissions discharged to the atmosphere, and shall record the output of the systems as follows: [20 DCMR 501.1]

1. The COMS shall be programmed to determine compliance with respect to Condition II(e).

2. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of the COMS, including, but not limited to meeting the requirements of Performance Specification 1 and the quality assurance procedures of 40 CFR 60, Appendix F.

c. At a minimum, the Permittee shall perform the following procedures for the CEMS and COMS to ensure proper operation and calibration: [20 DCMR 502.10, 40 CFR 51 Appendix P, 40 CFR 60 Appendix F, and 40 CFR 75.10(d)]

1. The COMS unit shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 10-second period.

2. The CEMS units for measuring oxides of nitrogen and oxygen, shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

3. The Permittee shall install the CEMS and COMS units such that representative measurements of emissions or process parameters from affected facilities are obtained.

4. At least once per day (or in accordance with the interval recommended by the manufacturer, if a shorter period), the Permittee shall perform a zero and span check on the COMS units and determine the calibration drift on the CEMS unit and adjust the units appropriately.

5. The Permittee shall adjust the zero and span whenever the 24-hour zero drift or 24-hour calibration drift limits of the applicable performance specifications in Appendix B of 40 CFR Part 60 are exceeded, or whenever the 24-hour zero drift or 24-hour calibration drift exceed 10 percent of the emissions standard.

6. The Permittee shall ensure that COMS unit’s span is approximately 200 percent of the expected instrument data display and output corresponding to the emission standard for the source.

d. The Permittee shall develop and implement a quality control program for the COMS and CEMS units that details procedures for the following, at a minimum: [40 CFR 60 Appendix F]

1. Calibration of the COMS and CEMS units;

2. Calibration drift determination and appropriate adjustment of the COMS and CEMS units.

3. Preventative maintenance of the COMS and CEMS units (including spare parts inventory);

4. Data recording, calculations, and reporting;

5. Accuracy audit procedures, including sampling and analysis methods; and

6. Program of corrective action in the case of malfunctions.

e. The CEMS units shall be audited in accordance with the requirements of 40 CFR 75, including the following:

1. Daily Assessments [40 CFR 75, Appendix B, Section 2.1]

The Permittee shall perform the following daily assessments to quality-assure the hourly data recorded by the monitoring systems during each period of unit operation or, for a bypass stack or duct, each period in which emissions pass through the bypass stack or duct.

i. Calibration Error Test [40 CFR 75, Appendix B, Section 2.1.1]: Except as provided in Condition IV(e)(1)(i)(B), the Permittee shall perform the daily calibration error test of each gas monitoring system (including moisture monitoring systems consisting of wet- and dry-basis O2 analyzers) according to the procedures in 40 CFR 75, Appendix A, Section 6.3.1. When two measurement ranges (low and high) are required for a particular parameter, the Permittee shall perform sufficient calibration error tests on each range to validate the data recorded on that range, according to the criteria in Condition IV(e)(1)(v) of this permit.

A. On-line Daily Calibration Error Tests: Except as provided in Condition IV(e)(1)(i)(B), all daily calibration error tests must be performed while the unit is in operation at normal, stable conditions (i.e. “on-line”).

B. Off-line Daily Calibration Error Tests: Daily calibrations may be performed while the unit is not operating (i.e., “off-line”) and may be used to validate data for a monitoring system that meets the following conditions:

1. An initial demonstration test of the monitoring system is successfully completed and the results are reported in the quarterly report required under Condition VI(i). The initial demonstration test, hereafter called the “off-line calibration demonstration”, consists of an off-line calibration error test followed by an on-line calibration error test. Both the off-line and on-line portions of the off-line calibration demonstration must meet the calibration error performance specification in 40 CFR 75, Appendix A, Section 3.1. Upon completion of the off-line portion of the demonstration, the zero and upscale monitor responses may be adjusted, but only toward the true values of the calibration gases or reference signals used to perform the test and only in accordance with the routine calibration adjustment procedures specified in the quality control program required under 40 CFR 75, Appendix B, Section 1. Once these adjustments are made, no further adjustments may be made to the monitoring system until after completion of the on-line portion of the off-line calibration demonstration. Within 26 clock hours of the completion hour of the off-line portion of the demonstration, the monitoring system must successfully complete the first attempted calibration error test, i.e., the on-line portion of the demonstration.

2. For each monitoring system that has passed the off-line calibration demonstration, off-line calibration error tests may be used on a limited basis to validate data, in accordance with 40 CFR 75, Appendix B, Section 2.1.5.1, Paragraph (2).

ii. Additional Calibration Error Tests and Calibration Adjustments [40 CFR 75, Appendix B, Section 2.1.3]:

A. In addition to the daily calibration error tests required under Condition IV(e)(1)(i) of this permit, a calibration error test of a monitor shall be performed in accordance with Condition IV(e)(1)(i) of this permit, as follows: whenever a daily calibration error test is failed; whenever a monitoring system is returned to service following repair or corrective maintenance that could affect the monitor's ability to accurately measure and record emissions data; or after making certain calibration adjustments, as described in this section. Except in the case of the routine calibration adjustments described in this section, data from the monitor are considered invalid until the required additional calibration error test has been successfully completed.

B. Routine calibration adjustments of a monitor are permitted after any successful calibration error test. These routine adjustments shall be made so as to bring the monitor readings as close as practicable to the known tag values of the calibration gases. An additional calibration error test is required following routine calibration adjustments where the monitor's calibration has been physically adjusted (e.g., by turning a potentiometer) to verify that the adjustments have been made properly. An additional calibration error test is not required, however, if the routine calibration adjustments are made by means of a mathematical algorithm programmed into the data acquisition and handling system. The EPA recommends that routine calibration adjustments be made, at a minimum, whenever the daily calibration error exceeds the limits of the applicable performance specification in 40 CFR 75, Appendix A for the pollutant concentration monitor, CO2 or O2 monitor.

C. Additional (non-routine) calibration adjustments of a monitor are permitted prior to (but not during) linearity checks and RATAs and at other times, provided that an appropriate technical justification is included in the quality control program required under 40 CFR 75, Appendix B, Section 1 and this permit. The allowable non-routine adjustments are as follows. Permittee may physically adjust the calibration of a monitor (e.g., by means of a potentiometer), provided that the post-adjustment zero and upscale responses of the monitor are within the performance specifications of the instrument given in 40 CFR 75, Appendix A, Section 3.1. An additional calibration error test is required following such adjustments to verify that the monitor is operating within the performance specifications at both the zero and upscale calibration levels.

iii. Data Validation [40 CFR 75, Appendix B, Section 2.1.4]:

A. An out-of-control period occurs when the calibration error of a NOx pollutant concentration monitor exceeds 5.0 percent of the span value, when the calibration error of a CO2 or O2 monitor (including O2 monitors used to measure CO2 emissions or percent moisture) exceeds 1.0 percent O2 or CO2, which is twice the applicable specification of 40 CFR 75, Appendix A. In addition, a NOx monitor for which the calibration error exceeds 5.0 percent of the span value shall not be considered out-of-control if |R-A| in Equation A-6 does not exceed 5.0 ppm (for span values ≤50 ppm), or if |R-A|; does not exceed 10.0 ppm (for span values >50 ppm, but ≤200 ppm). The out-of-control period begins upon failure of the calibration error test and ends upon completion of a successful calibration error test. Note, that if a failed calibration, corrective action, and successful calibration error test occur within the same hour, emission data for that hour recorded by the monitor after the successful calibration error test may be used for reporting purposes, provided that two or more valid readings are obtained as required by § 75.10. A NOx-diluent CEMS is considered out-of-control if the calibration error of either component monitor exceeds twice the applicable performance specification in 40 CFR 75, Appendix A to this part. Emission data shall not be reported from an out-of-control monitor.

B. The results of any certification, recertification, diagnostic, or quality assurance test required under this part may not be used to validate the emissions data required under this part, if the test is performed using EPA Protocol gas from a production site that is not participating in the PGVP, except as provided in 40 CFR 75.21(g)(7) or if the cylinder(s) are analyzed by an independent laboratory and shown to meet the requirements of 40 CFR 75, Appendix A, Section 5.1.4(b).

iv. Quality Assurance of Data With Respect to Daily Assessments [40 CFR 75, Appendix B, Section 2.1.5]: When a monitoring system passes a daily assessment (i.e., daily calibration error test), data from that monitoring system are prospectively validated for 26 clock hours (i.e., 24 hours plus a 2-hour grace period) beginning with the hour in which the test is passed, unless another assessment (i.e. a daily calibration error test, a quarterly linearity check, a quarterly leak check, or a relative accuracy test audit) is failed within the 26-hour period.

1. Data Invalidation with Respect to Daily Assessments. The following specific rules apply to the invalidation of data with respect to daily assessments:

1. Data from a monitoring system are invalid, beginning with the first hour following the expiration of a 26-hour data validation period or beginning with the first hour following the expiration of an 8-hour start-up grace period (as provided under Condition IV(e)(1)(iv)(A)(2) of this permit), if the required subsequent daily assessment has not been conducted.

2. For a monitor that has passed the off-line calibration demonstration, a combination of on-line and off-line calibration error tests may be used to validate data from the monitor, as follows. For a particular unit (or stack) operating hour, data from a monitor may be validated using a successful off-line calibration error test if: (a) An on-line calibration error test has been passed within the previous 26 unit (or stack) operating hours; and (b) the 26 clock hour data validation window for the off-line calibration error test has not expired. If either of these conditions is not met, then the data from the monitor are invalid with respect to the daily calibration error test requirement. Data from the monitor shall remain invalid until the appropriate on-line or off-line calibration error test is successfully completed so that both conditions (a) and (b) are met.

3. For units with two measurement ranges (low and high) for a particular parameter, when separate analyzers are used for the low and high ranges, a failed or expired calibration on one of the ranges does not affect the quality-assured data status on the other range. For a dual-range analyzer (i.e., a single analyzer with two measurement scales), a failed calibration error test on either the low or high scale results in an out-of-control period for the monitor. Data from the monitor remain invalid until corrective actions are taken and “hands-off” calibration error tests have been passed on both ranges. However, if the most recent calibration error test on the high scale was passed but has expired, while the low scale is up-to-date on its calibration error test requirements (or vice-versa), the expired calibration error test does not affect the quality-assured status of the data recorded on the other scale.

B. Daily Assessment Start-Up Grace Period: For the purpose of quality assuring data with respect to a daily assessment (i.e. a daily calibration error test), a start-up grace period may apply when a unit begins to operate after a period of non-operation. To qualify for a start-up grace period for a daily assessment, there are two requirements:

1. The unit must have resumed operation after being in outage for 1 or more hours (i.e., the unit must be in a start-up condition) as evidenced by a change in unit operating time from zero in one clock hour to an operating time greater than zero in the next clock hour.

2. For the monitoring system to be used to validate data during the grace period, the previous daily assessment of the same kind must have been passed on-line within 26 clock hours prior to the last hour in which the unit operated before the outage. In addition, the monitoring system must be in-control with respect to quarterly and semi-annual or annual assessments.

If both of the above conditions are met, then a start-up grace period of up to 8 clock hours applies, beginning with the first hour of unit operation following the outage. During the start-up grace period, data generated by the monitoring system are considered quality-assured. For each monitoring system, a start-up grace period for a calibration error test ends when either: (1) a daily assessment of the same kind (i.e., calibration error test) is performed; or (2) 8 clock hours have elapsed (starting with the first hour of unit operation following the outage), whichever occurs first.

* + 1. Quarterly Assessments [40 CFR 75, Appendix B, Section 2.2]

For each primary and redundant backup monitor or monitoring system, the following assessments shall be performed at least once each calendar quarter:

i. Linearity Check: A linearity shall be performed in accordance with the procedures in Section 6.2 of 40 CFR 75, Appendix A for each primary and redundant NOx pollutant concentration monitor and each primary and redundant backup CO2 or O2 monitor (including O2 monitors used to measure CO2 emissions or to continuously monitor moisture) at least once during each QA operating quarter[[6]](#footnote-6). For units using both a low and high span value, a linearity check is required only on the range(s) used to record and report emission data during the QA operating quarter. Conduct the linearity checks no less than 30 days apart, to the extent practicable. The data validation procedures in section 2.2.3(e) of 40 CFR 75, Appendix B shall be followed. [40 CFR 75, Appendix B, Section 2.2.1]

ii. Data Validation [40 CFR 75, Appendix B, Section 2.2.3]:

* + - 1. A linearity check shall not be commenced if the monitoring system is operating out-of-control with respect to any of the daily or semiannual quality assurance assessments required by 40 CFR 75, Appendix B, Sections 2.1 and 2.3 or with respect to the additional calibration error test requirements in 40 CFR 75, Appendix B, Section 2.1.3.
      2. Each required linearity check shall be done according to Condition IV(e)(2)(ii)(B)(1), (2), or (3), as follows:

1. The linearity check may be done “cold,” i.e., with no corrective maintenance, repair, calibration adjustments, re-linearization or reprogramming of the monitor prior to the test.

2. The linearity check may be done after performing only the routine or non-routine calibration adjustments described in 40 CFR 75, Appendix B, Section 2.1.3 at the various calibration gas levels (zero, low, mid or high), but no other corrective maintenance, repair, re-linearization or reprogramming of the monitor. Trial gas injection runs may be performed after the calibration adjustments and additional adjustments within the allowable limits in 40 CFR 75, Appendix B, Section 2.1.3 may be made prior to the linearity check, as necessary, to optimize the performance of the monitor. The trial gas injections need not be reported, provided that they meet the specification for trial gas injections in 40 CFR 75.20(b)(3)(vii)(E)(1). However, if, for any trial injection, the specification in 40 CFR 75.20(b)(3)(vii)(E)(1) is not met, the trial injection shall be counted as an aborted linearity check.

3. The linearity check may be done after repair, corrective maintenance or reprogramming of the monitor. In this case, the monitor shall be considered out-of-control from the hour in which the repair, corrective maintenance or reprogramming is commenced until the linearity check has been passed. Alternatively, the data validation procedures and associated timelines in 40 CFR 75.20(b)(3)(ii) through (ix) may be followed upon completion of the necessary repair, corrective maintenance, or reprogramming. If the procedures in 40 CFR 75.20(b)(3) are used, the words “quality assurance” apply instead of the word “recertification”.

* + - 1. Once a linearity check has been commenced, the test shall be done hands-off. That is, no adjustments of the monitor are permitted during the linearity test period, other than the routine calibration adjustments following daily calibration error tests, as described in 40 CFR 75, Appendix B, Section 2.1.3. If a routine daily calibration error test is performed and passed just prior to a linearity test (or during a linearity test period) and a mathematical correction factor is automatically applied by the automated data acquisition and handling system (DAHS), the correction factor shall be applied to all subsequent data recorded by the monitor, including the linearity test data.
      2. If a daily calibration error test is failed during a linearity test period, prior to completing the test, the linearity test must be repeated. Data from the monitor are invalidated prospectively from the hour of the failed calibration error test until the hour of completion of a subsequent successful calibration error test. The linearity test shall not be commenced until the monitor has successfully completed a calibration error test.
      3. An out-of-control period occurs when a linearity test is failed (i.e., when the error in linearity at any of the three concentrations in the quarterly linearity check (or any of the six concentrations, when both ranges of a single analyzer with a dual range are tested) exceeds the applicable specification in 40 CFR 75, Appendix A, Section 3.2) or when a linearity test is aborted due to a problem with the monitor or monitoring system. For a NOx-diluent continuous emission monitoring system, the system is considered out-of-control if either of the component monitors exceeds the applicable specification in 40 CFR 75, Appendix A, Section 3.2 or if the linearity test of either component is aborted due to a problem with the monitor. The out-of-control period begins with the hour of the failed or aborted linearity check and ends with the hour of completion of a satisfactory linearity check following corrective action and/or monitor repair, unless the option in Condition IV(e)(2)(ii)(B)(3) of this permit to use the data validation procedures and associated timelines in 40 CFR 75.20(b)(3)(ii) through (ix) has been selected, in which case the beginning and end of the out-of-control period shall be determined in accordance with 40 CFR 75.20(b)(3)(vii)(A) and (B). For a dual-range analyzer, “hands-off” linearity checks must be passed on both measurement scales to end the out-of-control period. Note that a monitor shall not be considered out-of-control when a linearity test is aborted for a reason unrelated to the monitor's performance (e.g., a forced unit outage).
      4. No more than four successive calendar quarters shall elapse after the quarter in which a linearity check of a monitor or monitoring system (or range of a monitor or monitoring system) was last performed without a subsequent linearity test having been conducted. If a linearity test has not been completed by the end of the fourth calendar quarter since the last linearity test, then the linearity test must be completed within a 168 unit operating hour or stack operating hour “grace period” (as provided in 40 CFR 75, Appendix B, Section 2.2.4) following the end of the fourth successive elapsed calendar quarter, or data from the CEMS (or range) will become invalid.
      5. For each monitoring system, report the results of all completed and partial linearity tests that affect data validation (i.e., all completed, passed linearity checks; all completed, failed linearity checks; and all linearity checks aborted due to a problem with the monitor, including trial gas injections counted as failed test attempts under Condition IV(e)(2)(ii)(B)(2) of this permit or under 40 CFR 75.20(b)(3)(vii)(F)), in the quarterly report required under Condition VI(i). Note that linearity attempts which are aborted or invalidated due to problems with the reference calibration gases or due to operational problems with the affected unit(s) need not be reported. Such partial tests do not affect the validation status of emission data recorded by the monitor. A record of all linearity tests, trial gas injections and test attempts (whether reported or not) must be kept on-site as part of the official test log for each monitoring system.
      6. The results of any certification, recertification, diagnostic, or quality assurance test required under this part may not be used to validate the emissions data required under this part, if the test is performed using EPA Protocol gas that was not from an EPA Protocol gas production site participating in the PGVP[[7]](#footnote-7) on the date the gas was procured either by the tester or by a reseller that sold to the tester the unaltered EPA Protocol gas, except as provided in § 75.21(g)(7) or if the cylinder(s) are analyzed by an independent laboratory and shown to meet the requirements of section 5.1.4(b) of appendix A to this part.

iv. Linearity Check Grace Period [40 CFR 75, Appendix B, Section 2.2.4]:

1. When a required linearity test has not been completed by the end of the QA operating quarter in which it is due or if, due to infrequent operation of a unit or infrequent use of a required high range of a monitor or monitoring system, four successive calendar quarters have elapsed after the quarter in which a linearity check of a monitor or monitoring system (or range) was last performed without a subsequent linearity test having been done, the Permittee has a grace period of 168 consecutive unit operating hours[[8]](#footnote-8) (or, for monitors installed on common stacks or bypass stacks, 168 consecutive stack operating hours[[9]](#footnote-9)) in which to perform a linearity test of that monitor or monitoring system (or range). The grace period begins with the first unit or stack operating hour following the calendar quarter in which the linearity test was due. Data validation during a linearity check grace period shall be done in accordance with the applicable provisions of Condition IV(e)(2)(ii) of this permit.
2. If, at the end of the 168 unit (or stack) operating hour grace period, the required linearity test has not been completed, data from the monitoring system (or range) shall be invalid, beginning with the first unit operating hour following the expiration of the grace period. Data from the monitoring system (or range) remain invalid until the hour of completion of a subsequent successful hands-off linearity test of the monitor or monitoring system (or range). Note that when a linearity test is conducted within a grace period for the purpose of satisfying the linearity test requirement from a previous QA operating quarter, the results of that linearity test or leak check may only be used to meet the linearity check requirement of the previous quarter, not the quarter in which the missed linearity test is completed.

3. Relative Accuracy Test Audit (RATA) [40 CFR 75, Appendix B, Section 2.3.1]:

i. A RATA shall be performed for each CO2 emissions concentration monitor (including O2 monitors used to determine CO2 emissions), CO2 or O2 diluent monitor used to determine heat input, moisture monitoring system, NOX concentration monitoring system, or NOX-diluent CEMS. according to 40 CFR 75 Appendix B, Section 2.3.1, which requires semi-annual RATAs (i.e. once every two successive QA operating quarters except that this frequency may be reduced to annually if any of the following conditions are met for the specific monitoring system involved:

A. The relative accuracy during the audit of a CO2 pollutant concentration monitor (including an O2 pollutant monitor used to measure CO2 using the procedures in 40 CFR 75, Appendix F), or of a CO2 or O2 diluent monitor used to determine heat input, or of a NOX concentration monitoring system, or of a NOX-diluent monitoring system is ≤7.5 percent;

B. For low NOX emitting units (average NOx reference method concentrations ≤250 ppm) during the RATA, when a NOx concentration monitoring system fails to achieve a relative accuracy ≤7.5 percent during the audit, but the monitor mean value from the RATA is within ±12 ppm of the reference method mean value;

C. For units with low NOX emission rates (average NOX emission rate measured by the reference method during the RATA ≤0.200 lb/MMBTU), when a NOX-diluent continuous emission monitoring system fails to achieve a relative accuracy ≤7.5 percent, but the monitoring system mean value from the RATA, calculated using Equation A-7 in 40 CFR 75, Appendix A, is within ±0.015 lb/MMBTU of the reference method mean value;

D. For a CO2 or O2 monitor, when the mean difference between the reference method values from the RATA and the corresponding monitor values is within ±0.7 percent CO2 or O2; and

E. When the relative accuracy of a continuous moisture monitoring system is ≤7.5 percent or when the mean difference between the reference method values from the RATA and the corresponding monitoring system values is within ±1.0 percent H2O.

ii. A calendar quarter that does not qualify as a QA operating quarter shall be excluded in determining the deadline for the next RATA.

iii. No more than eight successive calendar quarters shall elapse after the quarter in which a RATA was last performed without a subsequent RATA having been conducted. If a RATA has not been completed by the end of the eighth calendar quarter since the quarter of the last RATA, then the RATA must be completed within a 720 unit (or stack) operating hour grace period (as provided in 40 CFR 75, Appendix B, Section 2.3.3) following the end of the eighth successive elapsed calendar quarter, or data from the CEMS will become invalid.

iv. All RATAs shall be performed in accordance with the applicable procedures and provisions in 40 CFR 75, Appendix A, Sections 6.1.2 [40 CFR 75, Appendix B, Section 1.1.4] and 6.5 through 6.5.2.2 and 40 CFR 75, Appendix B, Sections 2.3.1.3 and 2.3.1.4.

4. In addition to those procedures specified in Conditions IV(e)(1) through (3), the Permittee shall perform all other applicable CEMS quality assurance/quality control (QA/QC) and other procedures specified in 40 CFR 75, Appendices A and B, as they apply to the CEMS at the facility.

f. Following the date on which the initial performance test was completed or required to be completed under 40 CFR 60.8 (*Note that this date is long past at the time of issuance of this permit so 40 CFR 60.8 initial performance testing requirements have not been included in this permit.*), whichever date comes first, the Permittee shall, upon request, determine compliance with the NOx standard in Condition II(d)(5) throught the use of a 30-day performance test. During periods when performance tests are not requested, NOx emission data collected pursuant to Condition IV(a)(3) are used to calculate a 30-day average emission rate on a daily basis and used to prepare excess emission reports, but will not be used to determine compliance with Condition II(d)(5). A new 30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly NOx emission data for the preceding 30 steam generating unit operating days. [40 CFR 60.46b(e)(4)]

g. To show compliance with the fuel characteristics requirements of Conditions III(a), (b), and (d) of this permit, the Permittee shall do the following:

1. For natural gas:
2. The Permittee shall obtain and maintain at the facility fuel receipts such as a current, valid purchase contract, tariff sheet, or transportation contract) from the fuel supplier that certify that the gaseous fuel meets the definition of natural gas as defined in 40 CFR 60.41b. [40 CFR 60.49b(r)(1)] As an alternative to this requirement, the Permittee may demonstrate compliance based on fuel analysis pursuant to 40 CFR 60.42b(r)(2).
3. The Permittee shall use one of the following sources of information to document that the natural gas used meets the definition of natural gas in 40 CFR 60.331(u):

A. The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less; or

B. Representative fuel sampling data which show that the sulfur content of the gaseous fuel does not exceed 20 grains/100 scf. At a minimum, the amount of fuel sampling data specified in 40 CFR 75, Appendix D, Section 2.3.1.4 or 2.3.2.4 of is required.

1. The Permittee shall monitor the nitrogen content of the natural gas combusted in the turbine, if the Permittee claims an allowance for fuel bound nitrogen (i.e., if an F-value greater than zero is being or will be used by the Permittee to calculate STD in Condition II(b) (see 40 CFR 60.332) as follows:
2. The nitrogen content of the natural gas shall be determined using analytical methods and procedures that are accurate to within 5 percent of the instrument range and are approved by the EPA Administrator [40 CFR 60.335(b)(9) or an approved alternative. [40 CFR 60.334(h)(2)]
3. Any applicable nitrogen content value of the natural gas shall be determined and recorded once per unit operating day. [40 CFR 60.334(i)(2)]
4. For No. 2 fuel oil: The Permittee shall monitor the total sulfur content of the fuel oil being fired in the turbine as follows:
5. The sulfur content of the fuel must be determined using the following total sulfur methods as described in 40 CFR 60.335(b)(10) [40 CFR 60.334(h)(2)]:
6. A minimum of three fuel samples shall be conducted during the performance test.
7. The samples shall be analyzed using any of the following test methods, as they apply to the fuel being sampled: ASTM D129-00, D2622-98, D4294-02, D1266-98, D5453-00 or D1552-01.
8. The Permittee shall use one of the total sulfur sampling options and the associated sampling frequency described in 40 CFR 75, Appendix D, Sections 2.2.3, 2.2.4.1, 2.2.4.2, and 2.2.4.3 (i.e., flow proportional sampling, daily sampling, sampling from the unit's storage tank after each addition of fuel to the tank, or sampling each delivery prior to combining it with fuel oil already in the intended storage tank). [40 CFR 60.334(i)(1)]
9. For all fuel sampling, the following information shall be collected and maintained [20 DCMR 502]:
10. The fuel type/grade;
11. The date and time the sample was taken;
12. The name, address, and telephone number of the laboratory that analyzed the sample (whenever a laboratory is used); and
13. The type of test or test method performed.

h. By no later than February 28, 2024, the Permittee shall conduct performance tests on the cogeneration system to determine compliance with Conditions II(a), (f), and (g) (while simultaneously using the CEMS the COMS to show compliance with NOx and visible emissions standards). Such testing shall be performed in accordance with the procedures in 40 CFR 60.8 and Condition IV(i). [20 DCMR 502]

i. The Permittee shall conduct the performance tests required pursuant to Condition IV(h) and shall furnish the Department with a written report(s) of the results of such performance tests in accordance with the following requirements: [20 DCMR 502]

1. A test protocol shall be submitted in electronic form to air.quality@dc.gov a minimum of thirty (30) days in advance of the proposed test date. The test shall be conducted in accordance with Federal and District requirements.

2. The test protocol and test date(s) shall be approved by the Department prior to initiating any testing. The Department must have the opportunity to observe the test for the results to be considered for acceptance.

3. The final results of the testing shall be submitted to the Department within sixty (60) days of the test completion. One (1) original test report and an electronic copy of the test report shall be submitted to the following addresses:

Chief, Compliance and Enforcement Branch

Department of Energy and Environment

Air Quality Division

1200 First Street NE, 5th Floor

Washington, DC 20002

and

[air.quality@dc.gov](mailto:air.quality@dc.gov)

4. The final report of the results shall include the emissions test report (including raw data from the test) as well as a summary of the test results and a statement of compliance or non-compliance with permit conditions to be considered valid. The summary of results and statement of compliance or non-compliance shall contain the following information:

i. A statement that the Permittee has reviewed the report from the emissions testing firm and agrees with the findings.

ii. Permit number(s) and condition(s) which are the basis for the compliance evaluation.

iii. Summary of results with respect to each permit condition.

iv. Statement of compliance or non-compliance with each permit condition.

5. The results must demonstrate to the Department’s satisfaction that the emission unit is operating in compliance with the applicable regulations and conditions of this permit; if the final report of the test results shows non-compliance the Permittee shall propose corrective action(s). Failure to demonstrate compliance through the test may result in enforcement action.

j. In addition to the above testing requirements, the Permittee shall conduct and allow the Department access to conduct tests of air pollution emissions from any source as requested. [20 DCMR 502.1]

k. The Permittee shall monitor the quantity, in gallons, of the ultra-low sulfur diesel burned in each combustion turbine to ensure compliance with Condition III(b) of this permit.

**V. Record Keeping Requirements:**

* 1. The Permittee shall maintain a copy of the unit’s manufacturer’s maintenance and operating recommendations at the facility.
  2. The Permittee shall maintain records of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other records required to be maintained in accordance with Condition V in a permanent form suitable for inspection. The file shall be retained at least five years following the date of such measurements, maintenance, reports, and records. These records shall be made available to representatives of the Department and EPA in accordance with the requirements of this permit and upon request. [20 DCMR 302.1(c)(2)(B), 20 DCMR 805.11, 20 DCMR 1003.1, and 20 DCMR 500.8, 40 CFR 60.7(f)]
  3. The Permittee shall maintain records of the amount of No. 2 fuel oil used each month in the combustion turbines. These data shall be maintained in a rolling twelve month sum format for a period of not less than five (5) years. [20 DCMR 500.2, 20 DCMR 500.8, and 20 DCMR 302.1(c)(2)(B)]
  4. The Permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. [40 CFR 60.7(b)]
  5. The Permittee shall maintain records of all instances of operation using liquid fuel, including the fuel used, the date and duration of the fuel use, the reason for operating using that fuel, and all notifications received from the natural gas supplier notifying the Permittee of the beginning or end of a natural gas interruption. [20 DCMR 805.4(a)(2)(D)((iii)]
  6. The Permittee shall maintain a running calendar year sum of the duration of all liquid fuel use each year for purposes of periodic testing. [20 DCMR 805.4(a)(2)(D)((iv)]
  7. The Permittee shall record and maintain records of the amounts of natural gas combusted in the duct burners each day and calculate the annual capacity factor[[10]](#footnote-10) for natural gas for the reporting period. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month. [40 CFR 60.49b(d)]

h. The Permittee shall develop and implement a quality assurance/quality control (QA/QC) program for the continuous emission monitors required under Condition IV(a) of this permit, and their components[[11]](#footnote-11). At a minimum, include in each QA/QC program a written plan that describes in detail (or that refers to separate documents containing) complete, step-by-step procedures and operations for each of the following activities. Upon request from regulatory authorities, the source shall make all procedures, maintenance records, and ancillary supporting documentation from the manufacturer (e.g., software coefficients and troubleshooting diagrams) available for review during an audit. Electronic storage of the information in the QA/QC plan is permissible, provided that the information can be made available in hardcopy upon request during an audit. [40 CFR 75, Appendix B, Section 1]

1. Requirements for All Monitoring Systems:

i. Preventive Maintenance: Keep a written record of procedures needed to maintain the monitoring system in proper operating condition and a schedule for those procedures. This shall, at a minimum, include procedures specified by the manufacturers of the equipment and, if applicable, additional or alternate procedures developed for the equipment.

ii. Recordkeeping and Reporting: Keep a written record describing procedures that will be used to implement the recordkeeping and reporting requirements in this permit and any other applicable requirements in 40 CFR 75, Subparts E, F, and G and appendices D and E, as applicable.

iii. Maintenance Records: Keep a record of all testing, maintenance, or repair activities performed on any monitoring system or component in a location and format suitable for inspection. A maintenance log may be used for this purpose. The following records should be maintained: date, time, and description of any testing, adjustment, repair, replacement, or preventive maintenance action performed on any monitoring system and records of any corrective actions associated with a monitor's outage period. Additionally, any adjustment that recharacterizes a system's ability to record and report emissions data must be recorded (e.g., changing of temperature and pressure coefficients and dilution ratio settings), and a written explanation of the procedures used to make the adjustment(s) shall be kept.

2. Specific Requirements for Continuous Emissions Monitoring Systems:

i. Calibration Error Test and Linearity Check Procedures: Keep a written record of the procedures used for daily calibration error tests and linearity checks (e.g., how gases are to be injected, adjustments of flow rates and pressure, introduction of reference values, length of time for injection of calibration gases, steps for obtaining calibration error or error in linearity, determination of interferences, and when calibration adjustments should be made). Identify any calibration error test and linearity check procedures specific to the continuous emission monitoring system that vary from the procedures in 40 CFR 75, Appendix A.

ii. Calibration and Linearity Adjustments: Explain how each component of the continuous emission monitoring system will be adjusted to provide correct responses to calibration gases, reference values, and/or indications of interference both initially and after repairs or corrective action. Identify equations, conversion factors and other factors affecting calibration of each continuous emission monitoring system.

iii. Relative Accuracy Test Audit Procedures: Keep a written record of procedures and details peculiar to the installed continuous emission monitoring systems that are to be used for relative accuracy test audits, such as sampling and analysis methods.

iv. Parametric Monitoring for Units With Add-on Emission Controls: The Permittee shall keep a written (or electronic) record including a list of operating parameters for any add-on NOx emission controls, including parameters in 40 CFR 75.55(b) or 40 CFR 75.58(b), as applicable, and the range of each operating parameter that indicates the add-on emission controls are operating properly. The Permittee shall keep a written (or electronic) record of the parametric monitoring data during each NOx missing data period.

i. The Permittee shall maintain records of the following information for each steam generating unit operating day [40 CFR 60.49b(g)]:

1. Calendar date;

2. The average hourly NOx emission rates (expressed as NO2) (ng/J or lb/MMBtu heat input) measured or predicted;

3. The 30-day average NOx emission rates (ng/J or lb/MMBtu heat input) calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days;

4. Identification of the steam generating unit operating days when the calculated 30-day average NOx emission rates are in excess of the NOx emissions standard in Condition II(d)(5), with the reasons for such excess emissions as well as a description of corrective actions taken;

5. Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken;

6. Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data;

7. Identification of “F” factor used for calculations, method of determination, and type of fuel combusted;

8. Identification of the times when the pollutant concentration exceeded full span of the CEMS; and

9. Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with 40 CFR 60, Performance Specification 2 or 3 (when applicable).

j. Missing data records: The Permittee shall record the causes of any missing data periods and the actions taken by the Permittee to correct such causes. [40 CFR 75.57(h)]

k. Monitoring plan recordkeeping provisions [40 CFR 75.73(c)]:

1. General provisions: The Permittee shall prepare and maintain a monitoring plan for the equipment. Except as provided in paragraph (d) or (f) of 40 CFR 75.73, a monitoring plan shall contain sufficient information on the continuous emission monitoring systems and the use of data derived from these systems to demonstrate that all the unit's NOx emissions are monitored and reported.

2. Whenever the Permittee makes a replacement, modification, or change in the certified continuous emission monitoring system, including a change in the automated data acquisition and handling system or in the flue gas handling system, that affects information reported in the monitoring plan (e.g., a change to a serial number for a component of a monitoring system), then the Permittee shall update the monitoring plan.

3. Contents of the monitoring plan for units not subject to an Acid Rain emissions limitation: On and after January 1, 2009, each monitoring plan shall contain the information in 40 CFR 75.53(g)(1) in electronic format and the information in 40 CFR 75.53(g)(2) in hardcopy format, only. On and after January 1, 2009, each monitoring plan shall contain the information in 40 CFR 75.53(h)(1)(i), and (h)(2)(i) in electronic format and the information in 40 CFR 75.53(h)(1)(ii) and (h)(2)(ii) in hardcopy format, only. The monitoring plan also shall include a seasonal controls indicator, and an ozone season fuel-switching flag.

l. The Permittee shall keep records of the following information regarding the combustion adjustments required pursuant to Condition III(f) and shall submit these to EPA and the Department in accordance with reporting requirements or upon request: [20 DCMR 805.9(c) and 40 CFR 63.7540(a)(10)(vi)]

1. The date on which the combustion process was last adjusted;

2. The name, title, and affiliation of the person who made the adjustments;

3. The NOx concentrations in the effluent stream, in ppmvd, measured at high fire or typical operating load, before and after the tune-up;

4. The CO concentrations in the effluent stream, in ppmvd, measured at high fire or typical operating load, before and after the tune-up;

5. The CO2 concentrations in the effluent stream, in percent by volume dry basis, measured at high fire or typical operating load, before and after the tune-up;

6. The O2 concentrations in the effluent stream, in percent by volume dry basis, measured at high fire or typical operating load, before and after the tune-up;

7. A description of any corrective actions taken as a part of the tune-up of the unit;

8. The type and amount of fuel used over the 12 months prior to the tune-up of the unit, but only if the unit was physically and legally capable of using more than one type of fuel during that period, except that units sharing a fuel meter may estimate the fuel use by each unit; and

9. Any other information that the Department may require.

m. The Permittee shall maintain records of operations of the duct burner system sufficient to document compliance with the one-month shut-down requirement of Condition III(h).

**VI. Reporting Requirements:**

* 1. The Permittee shall provide the Department at least thirty (30) days prior notice of any performance test (see Condition IV(h)), RATA, or new CEMS/COMS certification, to afford the Department the opportunity to have an observer present. If after thirty (30) days notice for scheduled performance test, there is a delay in conducting the scheduled test, the Permittee shall notify the Department as soon as possible of any delay in the original test date, either by providing at least seven (7) days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with the Department by mutual agreement. These notifications shall be submitted to [air.quality@dc.gov](mailto:air.quality@dc.gov).
  2. A report of the information collected on the amount of NOx emissions from the source, including records of all measurements, data, and reports, shall be submitted to the Department within 30 days of the end of a control period (see Condition II(d)(3)). [20 DCMR 1003.3]
  3. The Permittee shall submit excess emission reports for any excess emissions that occurred during the reporting period with respect to Condition II(d)(5) in accordance with Conditions VI(d) and (f). For purposes of this requirement, excess emissions are defined as any calculated 30-day rolling average NOx emission rate, as determined pursuant to Condition IV(f), that exceeds the emission limit in Condition II(d)(5). [40 CFR 60.49b(h)(2) and (4)]
  4. Excess emission reports shall include the following information [40 CFR 60.7(c)]:
     1. The magnitude of excess emissions computed in accordance with Condition IV(a)(3)(v), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.
     2. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.
     3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.
     4. When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.
  5. The Permittee shall submit reports containing the information recorded pursuant to Condition V(i) in accordance with Conditions VI(f) and (g). [40 CFR 60.49b(i)]
  6. The Permittee shall submit all reports required pursuant to Conditions VI(c) and (e) electronically to the Department. Unless and until these reports can be submitted to EPA’s CEDRI system, these reports shall be submitted to [air.quality@dc.gov](mailto:air.quality@dc.gov) in a form acceptable to the Department. The electronic report(s) shall be submitted no later than 30 days after the end of the reporting period and shall be accompanied by a certification statement from the owner or operator, indicating whether compliance with the applicable emission standards and minimum data requirements of 40 CFR 60, Subpart Db were achieved during the reporting period. [40 CFR 60.49b(v), 20 DCMR 104.2(b), and 20 DCMR 500.1]
  7. The reporting period for reports required pursuant to Conditions VI(c) and (e) is each 6 month period. All reports shall be submitted to EPA and shall be postmarked by the 30th day following the end of the reporting period. [40 CFR 60.49b(w)]
  8. The Permittee may submit electronic quarterly reports for NOx in lieu of the semi-annual reports required pursuant to Conditions VI(c) through (g) in formats acceptable to the Department and EPA. The electronic report(s) shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement from the Permittee, indicating whether compliance with the applicable emission standards and minimum data requirements of this subpart was achieved during the reporting period. Before submitting reports in the electronic format to EPA in lieu of written reports required per Condition VI(g), the Permittee shall coordinate with EPA to obtain their agreement to submit reports in this alternative format. [40 CFR 60.49b(v)]
  9. Reports of the results of all daily assessments required pursuant to Condition IV(e)(1), quarterly assessments required pursuant to Condition IV(e)(2), and RATAs required pursuant to Condition IV(e)(3) shall be submitted to the Department electronically to [air.quality@dc.gov](mailto:air.quality@dc.gov) within 30 days of the end of the calendar quarter in which they were performed.
  10. Any excess NOx emissions with respect to Condition II(d)(3) shall be reported to the Department in writing within two Department working days. [20 DCMR 1003.4]
  11. The results of all performance testing required pursuant to Condition IV(h) shall be submitted to the Department pursuant to the requirements of Condition IV(i).
  12. The results of any testing required pursuant to Condition IV(j) shall be submitted to the Department pursuant to the requirements of Condition IV(i) unless other reporting requirements are specified by the Department.
  13. Quarterly reports summarizing the operation, maintenance, and downtime of the COMS and identifying all exceedances of the visible emissions limit in Condition II(e) shall be submitted electronically to [air.quality@dc.gov](mailto:air.quality@dc.gov) within 30 days of the end of each calendar quarter.
  14. Unless otherwise specified, all reports required pursuant to this permit shall be submitted to:

Chief, Compliance and Enforcement Branch

Air Quality Division

1200 First Street NE, 5th Floor

Washington, DC 20002

and

[air.quality@dc.gov](mailto:air.quality@dc.gov)

o. The Permittee shall include the requirements of this permit in the semi-annual reports and annual certification reports required by the Title V permit, issued pursuant to 20 DCMR Chapter 3, for the facility.

If you have any questions, please call me at (202) 535-1747 or Abraham T. Hagos at (202) 535-1354.

Sincerely,

Stephen S. Ours, P.E.

Chief, Permitting Branch

SSO/ATH

1. The adjustment to ISO standard ambient conditions in 40 CFR 60.335(b)(1) is optional for: lean premix stationary combustion turbines; units associated with heat recovery steam generators (HRSG) equipped with duct burners; and units equipped with add-on control devices. [↑](#footnote-ref-1)
2. The use of F in the equation in Condition II(b) is optional. That is, the Permittee may choose to apply a NOx allowance for fuel-bound nitrogen and determine the appropriate F-value in accordance with 40 CFR 60.332(a)(4) or may accept an F-value of zero. [40 CFR 60.322(a)(3)] [↑](#footnote-ref-2)
3. Natural gas means [40 CFR 60.41b]:

   (1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or

   (2) Liquefied petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see § 60.17); or

   (3) A mixture of hydrocarbons that maintains a gaseous state at ISO conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 34 and 43 megajoules (MJ) per dry standard cubic meter (910 and 1,150 Btu per dry standard cubic foot). [↑](#footnote-ref-3)
4. Natural gas means a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions. Natural gas contains 20.0 grains or less of total sulfur per 100 standard cubic feet. Equivalents of this in other units are as follows: 0.068 weight percent total sulfur, 680 parts per million by weight (ppmw) total sulfur, and 338 parts per million by volume (ppmv) at 20 degrees Celsius total sulfur. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1100 British thermal units (Btu) per standard cubic foot. Natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value. [40 CFR 60.331(u)] [↑](#footnote-ref-4)
5. Steam generating unit operating day means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period. [40 CFR 60.41b] [↑](#footnote-ref-5)
6. “QA operating quarter” means a calendar quarter in which there are at least 168 unit operating hours (as defined in 40 CFR 72.2) or, for a common stack or bypass stack, a calendar quarter in which there are at least 168 stack operating hours (as defined in 40 CFR 72.2) [40 CFR 72.2] [↑](#footnote-ref-6)
7. EPA Protocol Gas Verification Program or PGVP means a calibration gas audit program described in 40 CFR 75.21(g) and implemented by EPA in cooperation with the National Institute of Standards and Technology (NIST). [↑](#footnote-ref-7)
8. Unit operating hour means a clock hour during which a unit combusts any fuel, either for part of the hour or for the entire hour. [40 CFR 72.2] [↑](#footnote-ref-8)
9. Stack operating hour means a clock hour during which flue gases flow through a particular stack or duct (either for the entire hour or for part of the hour) while the associated unit(s) are combusting fuel. [40 CFR 72.2] [↑](#footnote-ref-9)
10. Annual capacity factor means the ratio between the actual heat input to a steam generating unit from the fuels listed in 40 CFR 60.42b, 40 CFR 60.43b(a), or 40 CFR 60.44b(a), as applicable, during a calendar year and the potential heat input to the steam generating unit had it been operated for 8,760 hours during a calendar year at the maximum steady state design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility in a calendar year. [40 CFR 60.41b] [↑](#footnote-ref-10)
11. This requirement is separate from the requirement incorporated in Condition IV(d) of this permit, but the developed QA/QC programs may be combined into a single program for streamlining purposes, but must contain all information required to meet both regulatory requirements. [↑](#footnote-ref-11)