May 7, 2019

Mr. Gregory G. Simmons

Associate VP of Facilities Operation, Design and Construction

Georgetown University

3700 O Street NW

Washington, D.C. 20057

**Re:** **Permit Nos. 7214, 7215, 7216 and 7217 to Construct and Operate One 119.8 MMBTU/hr Boiler (Boiler 4) and Install Low NOx Burners and Modify Stacks on Three Existing Boilers (Boilers 1, 2, and 3) at the Central Utility Plant**

Dear Mr. Simmons:

Pursuant to §200.1 and §200.2 of Title 20 of the District of Columbia Municipal Regulations (20 DCMR), a permit shall be obtained from the Department of Energy and Environment (the Department) before any person may cause or allow the construction or operation of a stationary source in the District of Columbia. The applications of Georgetown University (the Permittee) to construct and operate Boiler #4 and install and operate low NOx burners on existing boilers 1, 2, and 3, all described in the table below, at the Georgetown University Central Utilities Plant, located at 3700 O Street NW, Washington DC, have been reviewed.

|  |  |  |  |
| --- | --- | --- | --- |
| **Equipment ID** | **Permit No.** | **Heat Input Rating (MMBTU/hr)** | **Equipment/Project Description** |
| Boiler 1/EPN-1 | 7215 | 127.0 | Installation of low NOx burners with dual fuel (natural gas and ultralow sulfur No. 2 commercial fuel oil) capability in existing Indeck Keystone Energy watertube boilers, with maximum steam production capacities of 100,000 lb/hr, each. New stacks are to be installed for each unit, with stack heights between 77 and 81 feet above grade. |
| Boiler 2/EPN-2 | 7216 | 127.0 |
| Boiler 3/EPN-3 | 7217 | 120.6 |
| Boiler 4 | 7214 | 119.8 | Installation and operation of dual fuel (natural gas and ultralow sulfur No. 2 commercial fuel oil) Indeck Keystone Energy watertube boiler with low NOx burners, flue gas recirculation, an oxygen trim system, a maximum steam production capacity of 100,000 lb/hr, and a stack height between 77 and 81 feet above grade |

Based on the submitted plans and specifications as detailed in the application dated July 16, 2018, and additional information submitted August 24, 2018 and September 14, 2018, your applications to construct and operate are hereby approved subject to the following conditions:

I. General Requirements:

a. All the boilers shall be constructed and operated in compliance with applicable air pollution control requirements of 20 DCMR and shall be constructed as described in the permit applications.

b. These permits expire on May 6, 2024 (20 DCMR 200.4). If continued operation after this date is desired, the owner or operator shall submit applications for renewal by February 6, 2024.

c. Construction or operation of equipment under the authority of these permits shall be considered acceptance of its terms and conditions.

d. 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 these permits; 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 these permits may be grounds for suspension or revocation. [20 DCMR 202.2]

g. Emergency situations shall be handled in accordance with the provisions of 20 DCMR 302.7(a) through (c).

h. Within twelve (12) months of initial startup of each new or modified unit, the Permittee shall submit a complete application (or application revision, if an application for renewal is already pending) to modify the facility’s Title V operating permit to include the requirements of these permits as they apply to that unit. [20 DCMR 301.1(a)(2)] The Permittee is encouraged to combine applications for as many of the four units as possible to minimize the number of applications and permit revisions needed.

i. The Permittee shall exclude the public (including students) from accessing the grassy plateau, referred to in the permit application as the “exclusion zone” directly north of the Central Utility Plant and south of the Yates Lot Y parking lot. This exclusion zone’s boundaries, identified in Appendix F of the permit application, Figure 13-1, has been attached as Appendix 1 of these permits.

II. Emission Limitations:

a. Emissions from Boiler 4 shall not exceed the following emission rates [20 DCMR 201]:

|  |  |  |
| --- | --- | --- |
| **Pollutant** | **Emissions Burning Natural Gas (lb/hr)** | **Emissions Burning No. 2 Fuel Oil (lb/hr)** |
| Oxides of Nitrogen (NOx) | 1.7 | 11.0 |
| Carbon Monoxide (CO) | 4.4 | 10.2 |
| Volatile Organic Compounds (VOC) | 0.5 | 0.6 |
| Sulfur Dioxide (SO2) | 0.1 | 0.2 |
| Total Particulate Matter [PM(total)]† | 0.6 | 2.1 |

† PM Total includes both filterable and condensable fractions .

b. Emission from each of Boilers 1 and 2 shall not exceed the following emission rates [20 DCMR 201]:

|  |  |  |
| --- | --- | --- |
| **Pollutant** | **Emissions Burning Natural Gas (lb/hr)** | **Emissions Burning No. 2 Fuel Oil (lb/hr)** |
| Oxides of Nitrogen (NOx) | 1.8 | 12.3 |
| Carbon Monoxide (CO) | 4.7 | 11.3 |
| Volatile Organic Compounds (VOC) | 0.5 | 0.6 |
| Sulfur Dioxide (SO2) | 0.1 | 0.3 |
| Total Particulate Matter [PM(total)] † | 0.6 | 2.3 |

† PM Total includes both filterable and condensable fractions

c. Emission from Boiler 3 shall not exceed the following emission rates [20 DCMR 201]:

| **Pollutant** | **Emissions Burning Natural Gas (lb/hr)** | **Emissions Burning No. 2 Fuel Oil (lb/hr)** |
| --- | --- | --- |
| Oxides of Nitrogen (NOx) | 1.7 | 11.7 |
| Carbon Monoxide (CO) | 4.5 | 10.7 |
| Volatile Organic Compounds (VOC) | 0.5 | 0.6 |
| Sulfur Dioxide (SO2) | 0.1 | 0.2 |
| Total Particulate Matter [PM(total)] † | 0.6 | 2.2 |

† PM Total includes both filterable and condensable fractions

d. NOx emissions (expressed as NO2) from each of Boilers 1, 2, 3, and 4 shall not be greater than the following:

1. For Boiler Nos. 1, 2, 3, and 4 [20 DCMR 804.1 and 20 DCMR Chapter 8, Appendix 8-1]:

i. 0.2 pound per million BTU (lb/MMBTU) heat input, maximum two-hour average, when natural gas is burned; and

ii. 0.3 lb/MMBTU, maximum two-hour average, when No. 2 fuel oil is burned;

2. For Boiler Nos. 3 and 4: 0.20 lb/MMBTU on a 30-day average of one-hour averages basis when burning natural gas or No. 2 fuel oil. [40 CFR 60.44b(l)(1)]; and

3. For Boiler Nos. 1, 2, 3, and 4 [20 DCMR 805.5(c)(2)]:

i. 0.25 lb/MMBTU, based on a calendar day average, when combusting fuel oil or a combination of fuel oil and natural gas; and

ii. 0.20 lb/MMBTU, based on a calendar day average, when combusting natural gas only.

* 1. e. Total suspended particulate matter (TSP) (also known as total filterable PM) emissions shall not exceed the following:

1. 0.06 lb/MMBTU heat input from each of Boiler Nos. 1, 2, and 3, and 4, as measured by 40 CFR 60, Appendix A, Method 5 and in accordance with 20 DCMR 600.2 and 600.4. This standard applies at all times. [20 DCMR 600.1]; and

2. 0.030 lb/MMBTU heat input from Boiler No. 4, as measured by 40 CFR 60, Appendix A, Method 5. [20 DCMR 1410.1, 40 CFR 60.43b(h)(1), 40 CFR 60.46b(d)(2)(i), 40 CFR 63.11201(a), and 40 CFR 63, Subpart JJJJJJ, Table 1] This standard does not apply during startup or shutdown. [40 CFR 60.46b(a) and 40 CFR 63.11201(d)] *Note that this is a streamlined requirement. 40 CFR 60.46b(a) also exempts times of malfunction, but because this is not exempted in 40 CFR 63.11201(d), it is not exempted here, otherwise the standards are identical.*

* 1. f. Visible emissions in excess of five percent (5%) opacity shall not be emitted into the outdoor atmosphere from Boilers Nos. 3 or 4, except 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, adjustment of combustion controls, or malfunction of the equipment [20 DCMR 606.1 and 20 DCMR 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(f) as stated above.*

g. In addition to complying with Condition II(f), the Permittee shall not discharge from Boiler Nos. 3 or 4 any emissions that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. [40 CFR 60.43b(f)] This standard does not apply during periods of startup, shutdown, or malfunction. [40 CFR 60.43b(g)]

h. Visible emissions whose opacity is in excess of ten percent (10%) (unaveraged), at any time shall not be permitted into the outdoor atmosphere from Boiler Nos. 1 and 2; except: [20 DCMR 606.2]

1. Opacity not in excess of forty percent (40%) (unaveraged) shall be permitted for two (2) minutes in any sixty (60) minutes period and for an aggregate of twelve (12) minutes in any twenty-four (24) hours period other than during start-up of the equipment. [20 DCMR 606.2(a)]

2. During start-up of equipment, opacity not in excess of forty percent (40) (averaged over six (6) minutes) shall be permitted for an aggregate of five (5) times per start-up; and [20 DCMR 606.2(b)]

3. In addition to the emissions permitted under Condition II(h)(i), during shutdown of equipment, opacity not in excess of fifteen percent (15%) (unaveraged) shall be allowed and in addition, opacity not in excess of thirty percent (30%) (averaged over three (3) minutes) shall be permitted for an aggregate of three (3) times per shutdown. [20 DCMR 606.2(c)]

*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(h) as stated above.*

j. 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]

k. NOx and CO emissions shall not exceed those achieved with the performance of annual combustion adjustments on each boiler, performed per Conditions III(f) and (g). [20 DCMR 805.8(a)]

III. Operational Limitations:

* 1. a. The Permittee shall burn only fuel that meets the following requirements in the four boilers [20 DCMR 201, 20 DCMR 801.3, and 40 CFR 60.42b(a) and (j)]:

1. Only natural gas and No. 2 fuel oil shall be burned;

2. None of the No. 2 fuel oil purchased for use in any of the four units shall have a sulfur content of more than 0.0015% by weight;

3. Distillate oil other than No. 2 fuel oil may be substituted for No. 2 oil as long as:

i. The fuel meets the fuel sulfur requirements above;

ii. The fuel meets all other requirements that apply to No. 2 fuel oil in these permits;

iii. The boiler is designed to use the type of fuel; and

iv. The use of the fuel does not conflict with the recommendations of the manufacturer of the boiler or its appurtenances.

*Note that this is a streamlined permit condition. Compliance with the 0.0015% sulfur standard in 20 DCMR 801.3 will ensure compliance with the 0.5% sulfur standard in 40 CFR 60.42b(j), which is an alternative standard to 40 CFR 60.42b(a) and is applicable to Boiler Nos. 3 and 4. Therefore, compliance with this condition, as written, will ensure compliance with all of the applicable sulfur in fuel standards for all four boilers.*

b. The consumption of No. 2 fuel oil (and any other distillate oil) shall be limited as follows [20 DCMR 201]:

1. Boiler Nos. 1 and 2 shall each not burn in excess of 80,616 gallons per 12-consecutive-month rolling period;

2. Boiler No. 3 shall not burn in excess of 76,555 gallons per 12-consecutive-month rolling period; and

3. Boiler No. 4 shall not burn in excess of 75,920 gallons per 12-consecutive-month rolling period.

c. Steam production from the four boilers, combined, shall not exceed 300,000 lbs in any hour. [20 DCMR 201]

d. The Permittee shall, to the extent practicable, maintain and operate each boiler, including associate air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practice for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [20 DCMR 606.4, 20 DCMR 1410.1, and 40 CFR 63.11205(a)]

e. The Permittee shall minimize the boilers start-up and shutdown periods following the manufacturer’s recommended procedures, if available. If manufacturer’s recommended procedures are not available, the Permittee must follow recommended procedures for a unit of similar design for which the manufacturer’s recommended procedures are available. [20 DCMR 1410.1 and 40 CFR 63.11223(g)]

f. The Permittee shall perform tune-ups on boiler Nos. 1, 2, 3, and 4 annually, by May 1st of each year. Such tune-ups shall be performed while burning the type of fuel that provided the majority of the heat input to the boiler over the 12 months prior to the tune-up. [20 DCMR 805.8, 40 CFR 63.11201(b), 40 CFR 63, Subpart JJJJJJ, Table 2, and 63.11223(a) and 20 DCMR 805] *Note that this is a streamlined permit condition. 20 DCMR 805 requires annual tune-ups, while 40 CFR 63, Subpart JJJJJJ requires less frequent tune-ups, but provides more specifics on what is required to complete a tune-up.*

g. In order to demonstrate continuous compliance, the tune-ups on Boiler Nos. 1, 2, 3, and 4 shall be performed to meet the following criteria: [20 DCMR 805.8(a), 20 DCMR 1410.1, and 40 CFR 63.11223(b)]

1. As applicable, inspect each burner, and clean or replace any components of each burner as necessary (you may delay the burner inspection until the next scheduled unit shutdown, but you must inspect each burner at least once every 36 months).

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 (you may delay the inspection until the next scheduled unit shutdown, not to exceed 36 months from the previous inspection).

4. Minimize total emissions of NOx and, to the extent practicable, optimize total emissions of carbon monoxide. This optimization should be consistent with the manufacturer's specifications, if available.

5. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer.

6. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of startup.

IV. Monitoring and Testing Requirements:

a. For each of the four boilers, 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, and shall record the output of the systems as follows: [20 DCMR 501.1, 20 DCMR 805.5(e)(1); 40 CFR 60.48b(b), (c), (d), (e), and (f)]

1. The CEMS shall be operated and data recorded during all periods of operation of the boiler to which it is associated, except for CEMS breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.

2. The one-hour average NOx emission rates measured by the continuous NOx monitors, and calculated pursuant to 40 CFR 60.13(h):

A. Shall be expressed in lb/MMBTU heat input and shall be used to calculate the average emission rates required to determine compliance with Condition II(d)(2); and

B. Shall be expressed in pounds per hour (lb/hr) and shall be used to determine compliance with the NOx limitations found in Conditions II(a), (b), and (c).

3. If two-hour averages are used in lieu of one-hour averages to determine compliance with Condition II(d)(1), these shall be calculated in accordance with the procedures in 40 CFR 60.13(h) except that the averaging time shall be extended to two-hour periods.

4. Calendar day averages for determining compliance with Condition II(d)(3) 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)(2) and 40 CFR 60.13(h) unless another method of averaging is approved in writing by the Department.

5. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of the CEMS, including, but not limited to meeting the requirements of Performance Specifications 2 and 3 in 40 CFR 60, Appendix B and the quality assurance procedures of 40 CFR 60, Appendix F. The NOx span value shall be 500 ppm.

6. 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 (as defined at 40 CFR 60.41b), in at least 22 out of 30 successive steam generating unit operating days.

b. For each of the four boilers, the Permittee shall install, calibrate, maintain, and operate continuous opacity monitoring systems (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, 40 CFR 60.48b(a) and (e)]

1. The COMS shall be programmed to determine compliance with respect to Conditions II(f), (g), and (h), as applicable to the individual boiler.

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, and 40 CFR 60 Appendix F]

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, 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 at least once per calendar quarter in accordance with the procedures detailed in 40 CFR 60 Appendix F, Section 5. Successive quarterly audits shall occur no closer than 2 months. [40 CFR 60 Appendix F]

1. In three of the four calendar quarters, a Cylinder Gas Audit (CGA) may be conducted in accordance with the procedures in Appendix F of 40 CFR 60 Section 5.1.2. A CGA shall not be conducted for more than three consecutive quarters.

2. A Relative Accuracy Test Audit (RATA) shall be conducted at least once every four calendar quarters in accordance with Appendix B of 40 CFR 60 and applicable sampling methods.

f. To show compliance with Condition III(a), the Permittee shall sample and test the fuel oil burned in its fuel burning equipment at least once each calendar quarter or at the time of each fuel delivery, whichever is less frequent. For each sample, the Permittee must provide [20 DCMR 502]:

* + 1. The fuel oil grade;
    2. The weight percent sulfur of the fuel oil as determined using ASTM test method D-4294 or other method approved by the Department;
    3. The date and time the sample was taken;
    4. The name, address, and telephone number of the laboratory that analyzed the sample; and
    5. The type of test or test method performed.

In lieu of sampling and testing fuel oil each quarter for each of these data, the Permittee may obtain any or all of these data from the fuel oil supplier at the time of delivery and submit fuel receipts and fuel supplier certifications for all fuel deliveries that provide all of the above quality of fuel data (or those for which sampling and testing was not performed at the time of delivery) as well as the name of the fuel oil supplier, the date of delivery, and the sulfur content of the oil.

Note that the sulfur content data obtained from the fuel supplier must be the results of specific tests of the fuel at hand or the most recent representative fuel analysis from the fuel terminal prior to the fuel supplier obtaining the fuel for delivery to the Permittee, if such terminal analyses are performed on at least a monthly basis. General fuel specifications are not acceptable for this datum.

Terminal specifications (with references to appropriate ASTM methods as defined above) may be used to document the fuel oil type if the fuel supplier provides written certification that this was the material purchased from the terminal and delivered to the facility. If this method of determining the fuel oil type is used, the Department may opt to require occasional supplemental sampling and testing of the fuel oil to confirm these certifications.

If any of these data cannot be obtained from the fuel supplier, it is the responsibility of the Permittee to sample the fuel and have it analyzed to obtain the required data.

g. Within 60 days after achieving the maximum production rate at which Boiler 4 will be operated, but not later than 180 days after initial startup of Boiler 4, the Permittee shall conduct performance tests on the unit to determine compliance with Conditions II(a) (except NOx, which is determined with the use of CEMS, and SO2 which is met by complying with Conditions III(a) and IV(f)), (e), (f), and (g). Such testing shall be performed in accordance with the procedures in 40 CFR 60.8 and as follows: [20 DCMR 502 and 40 CFR 60.8]

1. Opacity observations shall be performed in accordance with 40 CFR 60.11(e)(1); or

2. If the Permittee elects to use the COMS to determine compliance with Conditions II(f) and (g), the Permittee shall comply with the requirements of 40 CFR 60.13(c) prior to the testing required under this condition.

h. Within 180 days after startup of each of Boilers 1, 2, and 3 (see Condition VI(d)), after installation of the low NOx burners, the Permittee shall conduct performance tests on the units to determine compliance with Conditions II(b) and (c) (as applicable) (except NOx, which is determined with the use of CEMS, and SO2 which is met by complying with Conditions III(a) and IV(f)), and (e). Such testing shall be performed in accordance with the procedures in 40 CFR 60.8. [20 DCMR 502]

i. The Permittee shall prepare for and conduct the performance tests required pursuant to Conditions IV(g) and (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, 40 CFR 60.7(a)(6) and (7), and 40 CFR 60.8]

1. One (1) original test protocol shall be submitted to the following address 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.

Chief, Compliance and Enforcement Branch

Air Quality Division

1200 First Street NE, 5th Floor

Washington, DC 20002

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 shall be submitted to the address in Condition IV(i)(1) above.

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 owner or operator 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 owner or operator 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. Boilers 1, 2, and 3 must have had a one-time energy assessment performed by a qualified energy assessor by March 21, 2014. An energy assessment completed on or after January 1, 2008 that meets or is amended to meet the energy assessment requirements of this condition satisfies the energy assessment requirement. If this energy assessment has not already been performed on one or more of the boilers, it shall be performed promptly upon issuance of these permits. *Note that this does not constitute an extension of the required deadline.* The energy assessment must include [20 DCMR 1410, 40 CFR 63.11196(a)(3), 63.11201(b), and Table 2 of Subpart JJJJJJ]:

1. A visual inspection of the boiler system,

2. An evaluation of operating characteristics of the facility, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints,

3. Inventory of major systems consuming energy from affected boiler(s),

4. A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage,

5. A list of major energy conservation measures,

6. A list of the energy savings potential of the energy conservation measures identified, and

7. A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.

l. The Permittee shall continuously monitor steam production from the four boilers to ensure compliance with Condition III(c).

m. The Permittee shall monitor total use of No. 2 fuel oil (and any other distillate oil) use in each of the units to ensure compliance with Condition III(b).

V. Record Keeping Requirements:

a. All records, including copies of submitted reports, and related support information required pursuant to Condition V of this permit shall be maintained at the facility for a period of five (5) years from the date of the monitoring sample, measurement, observation, report, activity, or application, unless a longer period is specified below. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records may be kept in electronic formats as long as such records can be certified as to their accuracy and validity and that they are readily available for inspection from the site. [20 DCMR 500.8, 20 DCMR 302.1(c)(2)(B), 40 CFR 60.49b(o), and 40 CFR 63.11225(d)] *Note that this is a streamlined condition requiring that the records be maintained for the longest period required by the cited regulatory sections.*

b. The Permittee shall keep records of the NOx and O2 (or CO2) CEMS data for all periods that data is recorded in accordance with Condition IV(a)(1). [40 CFR 60.48b(c), 20 DCMR 500.1 and 20 DCMR 805.5] These records shall be maintained in units, formats, and appropriate averages consistent with determining compliance with Conditions II(a) through (c) (for NOx), and (d).

c. The Permittee shall maintain all records of opacity measurements obtained with the use of the required continuous opacity monitoring system (COMS) required pursuant to Condition IV(b). These records shall be maintained in formats and appropriate averages consistent with determining compliance with Conditions II(f), (g), and (h). [20 DCMR 500.1 and 40 CFR 60.49b(f)]

d. The Permittee shall maintain records of the quality control program and its implementation, as specified in Condition IV(d) and (e) for each CEMS and COMS.

e. The Permittee shall maintain records of the following information for Boilers 3 and 4 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) (lb/MMBTU heat input) measured or predicted;

3. The 30-day average NOx emission rates (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 emission standards under Condition II(b), 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;

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

10. Results of daily CEMS drift tests and quarterly accuracy assessments as required under 40 CFR 60, Appendix F, Procedure 1.

f. The Permittee shall maintain all records of the results of all emissions testing obtained pursuant to the requirements of Condition IV(g), (h), (i), and (j) of this permit for a period of five years from the test date, or until subsequent testing has been performed for all the covered testing parameters, whichever is a longer period.

g. The Permittee shall maintain records of fuel information obtained pursuant to Condition IV(f).

h. The Permittee shall maintain records of the amounts of each fuel combusted during each day and calculate the annual capacity factor, as defined in 40 CFR 60.41b, individually for distillate oil and natural gas for each 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)(1)] The fuel usage data collected and recorded shall also be maintained in a 12-month rolling sum format and used to document compliance with Condition III(b).

i. The Permittee must keep and maintain records of each boiler tune-up/adjustment to document compliance with the requirements of Conditions III(f) and (g) as follows [20 DCMR 500.1, 20 DCMR 805.8(c), 40 CFR 63.11223(b)(6), and 40 CFR 63.11225(c)(2)]:

1. The identification of the boiler that was tuned/adjusted;

2. The procedures followed for tune-up;

3. The manufacturer’s specifications to which the boiler was tuned;

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

5. The name, title, affiliation of the person who made the adjustment;

6. The NOx emission rate, in ppmvd, after the adjustments were made;

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

8. The CO2 concentration, in percent (%) by volume dry basis, after the adjustments were made;

9. A description of any corrective actions taken as part of the tune-up of the boiler;

10. Any other information that the Department may require.

j. For each boiler required to conduct an energy assessment, the Permittee shall keep a copy of the energy assessment report. [40 CFR 63.11225(c)(2)(iii)]

k. The Permittee shall maintain records of each notification and report required to be submitted pursuant to Condition VI of these permits. [20 DCMR 500.1 and 40 CFR 63.11225(c)(1)]

l. The Permittee must keep records of the occurrence and duration of each malfunction of each boiler, or of any associated air pollution control and monitoring equipment, including any periods during which a CEMS or COMS is inoperative. [40 CFR 60.7(b) and 40 CFR 63.11225(c)(4)]

m. The Permittee must keep records of all actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in accordance with Condition III(d), including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation. [40 CFR 63.11225(c)(5)]

n. The Permittee shall keep records of the hourly total steam output from the four boilers, combined, in units of pounds of steam, to document compliance with Condition III(c). [20 DCMR 500.1]

VI. Reporting Requirements

a. All reports and notifications required under Condition VI 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

Director, Air Protection Division

U.S. Environmental Protection Agency, Region 3

Mail Code 3AP00

1650 Arch Street

Philadelphia PA 19103-2029

b. The Permittee shall incorporate the requirements of these permits (once construction has been completed and startup has occurred – see Condition VI(d)) in all subsequent Title V annual and semi-annual reports and compliance certifications until such time as the requirements of these permits have been incorporated into an updated Title V permit pursuant to Condition I(h). [20 DCMR 302.1(c)(3)]

c. The Permittee shall submit notification of the date that construction of Boiler 4 is commenced, postmarked no later than 30 days after such date. [40 CFR 60.7(a)(1)] “Commenced” means that the Permittee has undertaken a continuous program of construction or modification nor that the Permittee has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification. [40 CFR 60.2]

d. The Permittee shall, within 15 days of initial “startup” (as defined in 40 CFR 63.2), of each new or modified unit (post-modification), notify the Department and EPA in writing of the date of the unit’s startup. Installation of low NOx burners is considered a modification for purposes of this condition. [20 DCMR 500.1, 40 CFR 60.7(a)(3), and 40 CFR 60.49(b)(a)]

e. The Permittee shall notify the Department and EPA of the date on which demonstration of the Boiler 4 CEMS and COMS performance commences in accordance with 40 CFR 60.13(c). Notification shall be postmarked not less than 30 days prior to such date. [40 CFR 60.7(a)(5)]

f. The Permittee shall submit to the Department and EPA the data and a report of the results from each performance evaluation of each CEMS and COMS required under Conditions IV(a)(5) and IV(b)(2) and the applicable performance specifications in 40 CFR 60 Appendix B, within 60 days after completion of such evaluation. [40 CFR 60.49b(b)]

g. The Permittee shall submit semiannual excess emissions and monitoring systems performance reports for each of the boilers of any excess emissions of NOx that occurred during the reporting period, in accordance with the following: [40 CFR 60.49b(h) and (w), 40 CFR 60.7(c), and 20 DCMR 500.1]

1. The reports shall cover any exceedances of the NOx standards in Conditions II(a) through (d);

2. For the purposes of the requirement in Condition II(d)(2), excess emissions of NOx are defined as any calculated 30-day rolling average NOx emission rate that exceeds the specified emission limit;

3. Excess emission reports shall be postmarked by the 30th day following the end of each six-month period;

4. The excess emission reports shall contain the information recorded under Condition V(e); and

5. The excess emission reports and monitoring systems performance reports shall contain the information specified in Conditions VI(i) and (j).

h. The Permittee shall submit semiannual excess emissions and monitoring systems performance reports for each of the boilers of any excess visible emissions that occurred during the reporting period, in accordance with the following: [40 CFR 60.49b(h) and (w), 40 CFR 60.7(c), and 20 DCMR 500.1]

1. The reports shall cover any exceedances of the visible emissions standards in Conditions II(f) through h);

2. For the purposes of the requirement in Condition II(g), excess emissions are defined as all 6-minute periods during which the average opacity exceeds the opacity standards in Condition II(g);

3. Excess emission reports shall be postmarked by the 30th day following the end of each six-month period; and

4. The excess emission reports and monitoring systems performance reports shall contain the information specified in Conditions VI(i) and (j).

i. Written reports of excess emissions shall include the following information: [40 CFR 60.7(c)]

1. The magnitude of excess emissions computed in accordance with Conditions IV(a)(2) through (4), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions;

2. The process operating time during the reporting period;

3. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the boiler(s);

4. The nature and cause of any malfunction (if known), and the corrective action taken or preventative measures adopted;

5. The date and time identifying each period during which the CEMS or COMS was inoperative except for zero and span checks and the nature of the system repairs or adjustments; and

6. When no excess emissions have occurred or the CEMS or COMS have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

j. In addition to the above excess emissions reports, the Permittee shall submit summary reports for each COMS or CEMS using the format of 40 CFR 60.7(d), Figure 1 or another format approved by the Department that provides equivalent information: [40 CFR 60.7(d)]

k. The Permittee shall submit, if requested by the EPA Administrator or the Department, a biennial report containing the information in paragraphs VI(k)(1) through (3) of this section. [40 CFR 63.11223(b)(6)]

1. The concentrations of CO in the effluent stream in parts per million, by volume, and oxygen in volume percent, measured before and after the tune-up of the boiler.

2. A description of any corrective actions taken as a part of the tune-up of the boiler.

3. The type and amount of fuel used over the 12 months prior to the biennial tune-up of the boiler.

l. Within 120 days after the startup date of Boiler 4, reported pursuant to Condition VI(d), the Permittee submit an “Initial Notification of Applicability” to the EPA Administrator with respect to the applicability of 40 CFR 63, Subpart JJJJJJ, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources as required by 40 CFR 63.11225(a)(2).

m. No later than 120 days after startup of Boiler 4, the Permittee shall submit a Notification of Compliance Status in accordance with the requirements of 40 CFR 63.11225(a)(4) for Boiler 4. If such a notification was not previously submitted for Boilers 1, 2, and 3, such notifications shall be immediately submitted (as existing units, these notifications were due by July 19, 2014). In addition to the requirements of 40 CFR 63.11225(a)(4), the Permittee shall:

1. Submit to the Department and the EPA Administrator a signed certification in the Notification of Compliance Status report that an energy assessment of each boiler and its energy use systems was completed in accordance with 40 CFR 63, Subpart JJJJJJ. The Permittee must also submit, upon request, the energy assessment report [20 DCMR 1410.1 and 40 CFR 63.11214(c)]; and

2. For Boiler 4, submit a signed statement in the Notification of Compliance Status report that startups and shutdowns were conducted according to the manufacturer’s recommended procedures or procedures specified for a boiler of similar design if manufacturer’s recommended procedures are not available. [20 DCMR 1410.1 and 40 CFR 63.11223(g)]

n. For Boilers 1, 2, and 3, by March 1, 2016 and every two years thereafter, the Permittee shall prepare a biennial compliance certification report as required by 40 CFR 63.11225(b), for the two preceding calendar years (except the first report, which will cover only 2014 after the March 21, 2014 compliance deadline plus 2015). Such reports shall be submitted to the Department by March 15 of each calendar year during which they are required to be prepared. These compliance certification reports shall include the following:

1. Company name and address;

2. Statement by a responsible official, with the official’s name, title, phone number, email address, and signature, certifying the truth, accuracy, and completeness of the notification and a statement of whether the source has complied with all requirements of 40 CFR 63, Subpart JJJJJJ, including those contained in Conditions III(d) through (g) and IV(k). These notifications must include the following certification(s) of compliance, as applicable, and signed by a responsible official:

i. “This facility complies with the requirements in 40 CFR § 63.11223 to conduct a biennial tune-up of each boiler.”;

ii. For units that do not qualify for a statutory exemption as provided in section 129(g)(1) of the Clean Air Act: “No secondary materials that are solid waste were combusted in any affected unit.”;

iii. “This facility complies with the requirement in 40 CFR §§ 63.11214(d) and 63.11223(g) to minimize the boiler's time spent during startup and shutdown and to conduct startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if manufacturer's recommended procedures are not available.”

o. For Boiler 4, by March 1 of each year, the Permittee shall prepare an annual compliance certification report as required by 40 CFR 63.11225(b), for the preceding calendar year. Such reports shall be submitted to the Department by March 15 of each calendar year. These compliance certification reports shall include the following:

1. Company name and address;

2. Statement by a responsible official, with the official’s name, title, phone number, email address, and signature, certifying the truth, accuracy, and completeness of the notification and a statement of whether the source has complied with all requirements of 40 CFR 63, Subpart JJJJJJ, including those contained in Conditions II(e)(1), III(d) through (g) and IV(g). These notification must include the following certification(s) of compliance, as applicable, and signed by a responsible official:

i. “This facility complies with the requirements in 40 CFR § 63.11223 to conduct a biennial tune-up of each boiler.”;

ii. For units that do not qualify for a statutory exemption as provided in section 129(g)(1) of the Clean Air Act: “No secondary materials that are solid waste were combusted in any affected unit.”;

iii. “This facility complies with the requirement in 40 CFR §§ 63.11214(d) and 63.11223(g) to minimize the boiler's time spent during startup and shutdown and to conduct startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if manufacturer's recommended procedures are not available.”

3. If the source experiences any deviations from the applicable requirements during the reporting period, include a description of the deviations, the time periods during which the deviations occurred, and the corrective actions taken; and

4. The total fuel use by Boiler 4, for each calendar month within the reporting period, including, but not limited to, a description of the fuel, whether the fuel has received a non-waste determination by the Permittee or EPA through a petition process to be a non-waste under 40 CFR § 241.3(c), whether the fuel(s) were processed from discarded non-hazardous secondary materials within the meaning of 40 CFR § 241.3, and the total fuel usage amount with units of measure.

p. In addition to the reporting of performance test information required in Condition IV(i), performance test data used to determine compliance with Condition II(e)(2) shall be reported to EPA in accordance with the requirements of 40 CFR 63.11225(e)(1) within 60 days after completing the performance test. To accomplish this, the Permittee shall follow the procedure one of the procedures specified below:

1. For data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT Web site (https://www3.epa.gov/ttn/chief/ert/ert\_info.html) at the time of the test, the Permittee must submit the results of the performance test to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). (CEDRI can be accessed through the EPA's Central Data Exchange (CDX) (https://cdx.epa.gov/).) Performance test data must be submitted in a file format generated through the use of the EPA's ERT or an alternate electronic file format consistent with the extensible markup language (XML) schema listed on the EPA's ERT Web site. If the Permittee claims that some of the performance test information being submitted is confidential business information (CBI), the Permittee must submit a complete file generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT Web site, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAQPS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT or alternate file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described earlier in this paragraph.

2. For data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT Web site at the time of the test, you must submit the results of the performance test to the Administrator at the EPA address listed in Condition IV(a).

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

Sincerely,

Stephen S. Ours, P.E.

Chief, Permitting Branch

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