September 25, 2018

Ms. Alicia Knight

Senior Associate Vice President for Operations

The George Washington University

2025 F Street NW, Suite 215

Washington, D.C. 20052

**RE: Permit Nos. 6696-R1, 6697-R1 and 6698-R1 to Operate Three Natural Gas-Fired Boilers at George Washington University’s South Hall, 2135 F Street NW, Washington, DC**

Dear Ms. Knight:

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 can construct and operate a stationary source in the District of Columbia. The applications of the George Washington University (“the Permittee”) to operate the three (3) Bryan natural gas-fired hot water boilers, listed below, have been reviewed:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  **Equipment****Location** | **Address** | **Serial Number** | **Boiler ID** | **Natural Gas Rating (MMBTU/hr)** | **Permit Number** |
| South Hall | 2135 F St. NW Washington DC | 96525 | EUN-626, South Hall Boiler #1 | 6.0 | 6696-R1 |
| South Hall | 2135 F St. NW Washington DC | 96561 | EUN-627, South Hall Boiler #2 | 6.0 | 6697-R1 |
| South Hall | 2135 F St. NW Washington DC | 96559 | EUN-628, South Hall Boiler #3 | 6.0 | 6698-R1 |

Based on the plans and specifications as detailed in the air permit applications received on February 20, 2018, the applications are hereby approved, and the operation of South Hall Boiler #1, South Hall Boiler #2, and South Hall Boiler #3 are permitted, subject to the following conditions:

I. General Requirements:

* 1. This approval is issued pursuant to the air pollution control requirements of the applicable sections of 20 DCMR for the operation of the boilers.

b. This set of permits will expire on September 24, 2023. If continued operation after this date is desired, the Permittee shall submit applications for renewal by June 24, 2023. [20 DCMR 200.4]

1. Operation of equipment under the authority of this set of permits shall be considered acceptance of its terms and conditions.
2. The Permittee shall allow authorized officials of the District, 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.

1. This set of permits shall be kept on the premises and produced upon request.
2. This set of permits supersedes Permit Nos. 6696, 6697, and 6698, issued May 15, 2013.
3. Failure to comply with the provisions of these permits may be grounds for suspension or revocation. [20 DCMR 202.2]

II. Emission Limitations:

a. Each of the three (3) identical boilers shall not emit pollutants in excess of those specified in the following table [20 DCMR 201]: *Note that, unless other credible evidence of a violation, such as test results required under Condition IV(b), are identified, compliance with Conditions III(a) and (b) of this permit will be considered compliance with this condition.*

|  |  |
| --- | --- |
| **Pollutant** | **Short-Term Limit** **(Natural Gas) (lb/hr)** |
| Carbon Monoxide (CO) | 0.49 |
| Oxides of Nitrogen (NOx) | 0.59 |
| Total Particulate Matter (PM Total)1 | 0.045 |
| Sulfur Dioxide (SO2) | 0.004 |
| Volatile Organic Compounds (VOC) | 0.032 |

1PM Total includes both filterable and condensable fractions.

* 1. b. Visible emissions shall not be emitted into the outdoor atmosphere from the boilers, 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]

*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(b) as stated above.*

1. Total suspended particulate matter (TSP) emissions from the each of the boilers shall not be greater than 0.11 pounds per million BTU. [20 DCMR 600.1]. *Note that, unless other credible evidence of a violation, such as test results required under Condition IV(b), are identified, compliance with Conditions III(a) and (b) of this permit will be considered compliance with this condition.*
2. 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]
3. NOx and CO emissions shall not exceed those achieved with the performance of annual combustion adjustments on each boiler. To show compliance with this condition, the Permittee shall, each calendar year, perform adjustments of the combustion processes of the boilers with the following characteristics [20 DCMR 805.1(a)(4) and 805.8(a) and (b)]:
	* 1. Inspection, adjustment, cleaning or replacement of fuel burning equipment, including the burners and moving parts necessary for proper operation as specified by the manufacturer;
		2. Inspection of the flame pattern or characteristics and adjustments necessary to minimize total emissions of NOx and, to the extent practicable, minimize emissions of CO;
		3. Inspection of the air-to-fuel ratio control system and adjustments necessary to ensure proper calibration and operation as specified by the manufacturer; and
		4. Adjustments shall be made such that the maximum emission rate for any contaminant does not exceed the maximum allowable emission rates as set forth in Condition II of this permit.

III. Operational Limitations:

* 1. a. The sole fuel for the boilers shall be natural gas. No other fuels are approved for use in these boilers. [20 DCMR 201]

b. The boilers shall be operated at all times in a manner consistent with the manufacturer’s specifications for the equipment. [20 DCMR 201]

c. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate each boiler in a manner consistent with good air pollution control practice 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]

IV. Monitoring and Testing Requirements:

a. If performance testing of any of these boilers is required in accordance with Condition IV(b), the Permittee shall conduct performance testing on the boilers to determine compliance with Conditions II(a) (except SO2) and (c) (or as otherwise directed by the Department) and shall furnish the Department with a written report of the results of such performance test in accordance with the following requirements [20 DCMR 502]:

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

Department of Energy and Environment

Air Quality Division

1200 First Street NE, 5th Floor

Washington DC 20002

2. The test protocol and 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(a)(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:

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

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

C. Summary of results with respect to the permit condition.

D. 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.

* 1. 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]

c. At least once per quarter, during operation of each boiler, the Permittee shall conduct visual observations of the emissions from each boiler. If no operations are occurring for a given boiler during a given quarter, this shall be so noted. If emissions are visible, the Permittee shall make arrangements for prompt visible emissions testing by a person certified in accordance with EPA Reference Method 9 (40 CFR 60, Appendix A). Such a test shall consist of a minimum of 30 minutes of opacity observations for the boiler in question and shall be performed while firing the same fuel as was in use when the visible emissions were observed.

d. Regardless of whether or not emissions are observed pursuant to Condition IV(c) of this permit, the Permittee shall conduct a minimum of one visible emissions test of each boiler each year. Such a test program shall consist of a minimum of 30 minutes of opacity observations of the boiler and shall be performed by a person certified in accordance with EPA Reference Method 9 (40 CFR 60, Appendix A).

V. Record Keeping and Reporting Requirements:

The Permittee shall maintain the following records for a period of not less than five (5) years from the date of each test, monitoring, sample measurement, report, application, or other activity: [20 DCMR 302.1(c)(2)(B) and 20 DCMR 500.8]]

a. The Permittee shall keep records of the results of all emissions testing required for each boiler pursuant to Conditions IV(a) and (b) of this permit;

b. The Permittee shall maintain records of all visible emissions monitoring performed pursuant to Condition IV(c), including notes indicating when no observations were performed as a result of no operations of the boiler that week. These records shall be maintained in an organized fashion, shall include the identity of the person performing the monitoring, and shall be readily available for inspection by the Department;

c. The Permittee shall maintain records of all Method 9 visible emissions testing performed pursuant to Conditions IV(c) and (d). These records shall also include the identity of the person performing the visible emissions testing and documentation of his/her Method 9 certification. These records shall include documentation indicating whether the results show compliance with Condition II(b);

1. The Permittee shall maintain records of the amount of fuel used each month in the boilers. These data shall be maintained in a rolling twelve month sum format [20 DCMR 500.2];
2. The Permittee shall keep records of the following information regarding the combustion adjustments required pursuant to Condition II(e): [20 DCMR 805.8(c)]

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 emission rate, in ppmvd, after the adjustments were made;

4. The CO emission rate, in ppmvd, after the adjustments were made;

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

6. The O2 concentration, in percent (%) by volume dry basis, after the adjustments were made; and

7. Any other information that the Department may require.

f. Based on fuel usage data and emission factors developed from emission testing or other emission factors approved by the Department, the Permittee shall, by March 1 of each year, calculate total emissions of the pollutants listed below from the boilers during the previous calendar year for each fuel used:

1. Oxides of nitrogen (NOx);

2. Sulfur dioxide (SO2);

3. Carbon monoxide (CO);

4. Volatile organic compounds (VOCs);

5. Lead (Pb) and lead compounds, as defined in 40 CFR 50.12;

6. Ammonia (NH3);

7. Particulate matter in each of the following categories:

A. Total particulate matter (total filterable plus condensable),

B. Total particulate matter less than 10 microns in aerodynamic diameter (PM10, also known as PM10-PRI), equivalent to PM10-FIL plus PM-CON,

C. Condensable particulate matter (PM-CON),

D. Filterable particulate matter less than 10 microns in aerodynamic diameter (PM10-FIL),

E. Total particulate matter less than 2.5 microns in aerodynamic diameter (PM2.5, also known as PM2.5-PRI), equivalent to PM2.5-FIL plus PM-CON, and

F. Filterable particulate matter less than 2.5 microns in aerodynamic diameter (PM2.5-FIL); and

8. All hazardous air pollutants (HAPs) as defined in §112(b) of the Clean Air Act, as revised; and

h. A report of the calculations performed pursuant to Condition V(g) shall be submitted to the Department with the Annual Title V compliance certification report due each year for the previous calendar year. [20 DCMR 500.1]

If you have any questions, please call me at (202) 535-1747 or John C. Nwoke at (202) 724-7778.

Sincerely,

Stephen S. Ours, P.E.

Chief, Permitting Branch

SSO:JCN