September 4, 2019

Timothy H. Edwards

Facilities Manager

National Archives and Records Administration

700 Pennsylvania Avenue NW

Washington, DC 20408-0001

**RE: Permit Nos. 6344-R1 and 6345-R1 to Operate Two Natural Gas-Fired Generators at the National Archives and Records Administration, 700 Pennsylvania Avenue NW, Washington, DC**

Dear Mr. Edwards:

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 National Archives and Records Administration (“the Permittee”) to operate the two (2) 75 kWe natural gas-fired generator sets listed below, as part of a combined heat and power system (that also includes 6 permit-exempt 2 MMBtu/hr natural gas boilers), located at the National Archives and Records Administration, 700 Pennsylvania Avenue NW, Washington, DC have been reviewed:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Equipment Location Address** | **Equipment Name** | **Unit Identification** | **Engine Serial Number** | **Generator Output (kWe)** | **Permit Number** |
| South Basement Boiler Room 700 Pennsylvania Ave. NW Washington, DC | AEG #138 | Cogen #1 | 00069483 | 75 | 6344-R1 |
| South Basement Boiler Room 700 Pennsylvania Ave. NW Washington, DC | AEG #139 | Cogen #2 | 00076280 | 75 | 6345-R1 |

Based on the plans and specifications as detailed in the air permit applications received on March 1, 2018, the applications are hereby approved, and the operation of the Cogeneration generators AEG #138 and AEG #139 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 Cogen generators.
  2. This set of permits will expire on September 3, 2024. If continued operation after this date is desired, the Permittee shall submit applications for renewal by June 3, 2024.

[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. Failure to comply with the provisions of these permits may be grounds for suspension or revocation. [20 DCMR 202.2]
3. This set of permits supersedes Permit Nos. 6344 and 6345 that expired on August 25, 2013

II. Emission Limitations:

a. Emissions from each unit shall not exceed those in the following table [40 CFR 60.4233(e) and Subpart JJJJ, Table 1]:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pollutant Emission Limits1** | | | | | |
| **(g/HP-hr)** | | | ppmvd at 15% O2 | | |
| NOx | CO | VOC2 | NOx | CO | VOC2 |
| 2.0 | 4.0 | 1.0 | 160 | 540 | 86 |

1The Permittee may choose to comply with the emission standards in this table in units of either g/HP-hr or ppmvd at 15 percent O2.

2For purposes of this requirement, when calculating emissions of VOCs, emissions of formaldehyde should not be included.

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

c. 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:

* 1. a. The generators shall fire only natural gas per the submitted plan and specifications. [20 DCMR 200.6 and 20 DCMR 201]

b. The generators shall be operated in accordance with the recommendations of the equipment manufacturer. [20 DCMR 201]

c. A maintenance plan shall be maintained at the facility and followed. [40 CFR 60.4243(b)(2)(i)] At a minimum the maintenance plan shall include all maintenance requirements recommended by the equipment manufacturer.

d. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate the units in a manner consistent with good air pollution control practice for minimizing emissions [40 CFR 60.4243(b)(2)(i)]. 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.

IV. Monitoring and Testing Requirements:

a. Within 60 days after issuance of this permit to operate, the Permittee shall demonstrate compliance with Condition II(a) of this permit by performing an initial performance test on each unit according to the following requirements [40 CFR 60.8 and 60.4243(b)(2)(i) and the requirements of Condition VI:

*Note that this deadline is a deadline to return to compliance. Establishing this deadline does not absolve the Permittee of having previously failed to meet the regulatory deadline for such testing.*

1. The performance test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements of 40 CFR 60.8 and under the conditions and methods specified in Table 2 of 40 CFR 60, Subpart JJJJ [40 CFR 60.4244(a) and Table 2 of 40 CFR 60 Subpart JJJJ].

2. The performance test shall not be conducted during periods of startup, shutdown, or malfunction as specified in 40 CFR 60.8(c). If the generator to be tested is non-operational, it is not necessary to start up the engine solely to conduct the performance test; however, the performance test must be conducted immediately upon startup of the engine.

3. Three separate test runs shall be performed for each performance test required in this section as specified in 40 CFR 60.8(f). Each test run must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least one hour.

4. To determine compliance with the NOx mass per unit output emission limitation, convert the concentration of NOx in the engine exhaust using the following equation:



Where:

ER = Emission rate of NOx in g/HP-hr.

Cd = Measured NOx concentration in parts per million by volume (ppmv).

1.912x10-3 = Conversion constant for ppm NOx to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, horsepower-hour (HP-hr).

5. To determine compliance with the CO mass per unit output emission limitation, convert the concentration of CO in the engine exhaust using the following equation:



Where:

ER = Emission rate of CO in g/HP-hr.

Cd = Measured CO concentration in ppmv.

1.164x10-3 = Conversion constant for ppm CO to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine in HP-hr.

6. For purposes of this set of permits and 40 CFR 60, Subpart JJJJ, when calculating emissions of VOC, emissions of formaldehyde should not be included. To determine compliance with the VOC mass per unit output emission limitation, convert the concentration of VOC in the engine exhaust using the following equation:



Where:

ER = Emission rate of VOC in g/HP-hr.

Cd = VOC concentration measured as propane in ppmv.

1.833x10-3 = Conversion constant for ppm VOC measured as propane, to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

If the owner or operator chooses to measure VOC emissions using either Method 18 of 40 CFR 60, Appendix A, or Method 320 of 40 CFR 63, Appendix A, then it has the option of correcting the measured VOC emissions to account for the potential differences in measured values between these methods and Method 25A. The results from Method 18 and Method 320 can be corrected for response factor differences using Equations 4 and 5 of 40 CFR 60.4244. The corrected VOC concentration can then be places on a propane basis using Equation 6 of that same section.

b. In addition to the requirements of Condition IV(a), 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. The Permittee shall maintain an awareness of the operation of the generator sets to identify potential exceedances of Conditions II(b) and (c) and shall comply with the following:

1. At least once each month, during operation of each unit, the Permittee shall observe whether or not visible emissions are perceived from the emission point. If visible emissions are observed from the unit during this observation or at any other time, the Permittee shall record the instance and have the visible emissions promptly tested by a qualified person certified to perform testing pursuant to 40 CFR 60, Reference Method 9 to determine compliance with Condition II(b) [20 DCMR 502.1]; and

2. If odors or other deviations from the requirements of Condition II(c) are identified, such information shall be recorded as well as action taken to correct the problem in accordance with Condition VI(a)(3).

V. Notification and Reporting Requirements:

a. The Permittee shall provide the Department and U.S. EPA at least 30 days prior notice of any performance test required under Condition IV to afford the agencies the opportunity to have observers present. If after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, etc.) in conducting the scheduled performance test, the Permittee shall notify the EPA Administrator and the Department as soon as possible of any delay in the original test date, either by providing at least 7 days prior notice of the rescheduled date of the performance test or by arranging a rescheduled date with the EPA Administrator and the Department by mutual agreement.

b. At least 30 days in advance of the proposed test date, a test protocol shall be submitted to the Department for review. The testing shall be conducted in accordance with Federal and District requirements.

c. 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.

d. The results of the testing performed pursuant to Condition IV(a) shall be submitted to the Department and the US EPA within 60 days after completion of the testing program.

e. 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.

f. 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.

g. The notifications and reports required under Conditions V(a), (d) and (e) shall be submitted to the Department and the U.S. EPA at following addresses. The protocol required under Condition V(b) and (c) need only be submitted to the Department at the following address.

Attn: Chief, Compliance and Enforcement Branch

Department of Energy and Environment

Air Quality Division

1200 First Street NE, 5th Floor

Washington DC 20002

and

U.S. Environmental Protection Agency

Attn: Director, Air Protection Division

Mail Code 3AP00

1650 Arch Street

Philadelphia PA 19103-2029

VI. Record Keeping and Reporting Requirements:

a. The following records shall be maintained indefinitely at the facility [40 CFR 60.4245(a)]:

1. All notifications submitted pursuant to 40 CFR 60, Subpart JJJJ and all documentation supporting any notification;

2. Records of maintenance conducted on the engines *[Note that these records must be sufficient such that the Permittee is complying with the requirements of Condition III(c)]*;

3. Documentation that the engines meet the emission standards specified in Condition II(a) of this permit;

4. A copy of the emergency generator’s manufacturer’s maintenance and operating recommendations at the facility as well as a copy of the maintenance plan for the equipment; and

5. Records of the results of the testing required pursuant to Condition IV(a), including documentation of what was submitted to the Department and EPA.

b. The following information shall be recorded, initialed, and maintained in a log at the facility for a period not less than three (3) years [20 DCMR 500. 8]:

1. Records of the results of any visible emissions monitoring performed in accordance with Condition IV(c)(1);

2. Records of the actions taken to correct any problems resulting in deviations from the requirements of Conditions II(b) and (c);

3. Records of the monitoring actions performed in accordance with Condition IV(c);

4. Records of all fuel purchases for the units to document compliance with Condition III(a) of the permit and to enable calculation of emissions from the units upon request;

1. Records of the occurrence and duration of each malfunction of operation; and

6. Records of the actions taken during periods of malfunction to minimize emissions, including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

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