January 17, 2017

Mr. Anthony Roane, Assistant Director of Facilities

American University Washington College of Law

4801 Massachusetts Avenue, NW

Washington, DC 20016

**RE: Permit #7056 to Construct and Operate One 500 kWe Natural Gas Fired-Emergency Generator Set at 4300 Nebraska Avenue, NW Washington, DC**

Dear Mr. Roane:

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 application of American University Washington College of Law (the Permittee) to construct and operate a 500 kWe emergency generator set with 803 bhp Cummins natural gas-fired engine at the American University Washington College of Law, 4300 Nebraska Avenue NW, Washington DC, per the submitted plans and specifications, received on August 28, 2015 is hereby approved, subject to the following conditions:

I. General Requirements:

a. The emergency generator shall be maintained and operated in accordance with the applicable section of Title 20 of the District of Columbia Municipal Regulations (20 DCMR).

b. This permit will expire on January 16, 2022 [20 DCMR 200.4]. If continued operation after this date is desired, the Permittee shall submit an application for renewal by October 16, 2021.

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

d. 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.

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

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

II. Emission Limitations:

a. Emissions from this 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.

b. Visible emissions shall not be emitted into the outdoor atmosphere from this generator, 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].

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 emergency generator shall not be operated in excess of 500 hours in any given 12 month period. If operation beyond 500 hours is desired, the Permittee shall submit an application to amend this permit to comply with the conditions of 20 DCMR 805 and shall obtain the Department’s approval of such application prior to initiating such operation.

b. Except as specified in Condition III(c), the emergency generator shall be operated only during emergencies resulting from electrical power outages due to: a failure of the electrical grid; on-site disaster; local equipment failure; or public service emergencies such as flood, fire, natural disaster, or severe weather conditions (e.g. hurricane, tornado, blizzard, etc.). [20 DCMR 201]

c. The emergency generator may be operated for the purpose of maintenance checks and readiness testing and in non-emergency situations for a period not to exceed one hundred (100) hours per year as specified in Conditions III(c)(1) and (2) below. Any such operation shall be considered as part of the 500 hours allowed under Condition III (a) above. [40 CFR 60.4243(d)]

1. The emergency generator may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. [40 CFR 60.4243(d)(2)(i) and DCMR 201]; and

2. The emergency generator may be operated for up fifty (50) hours per calendar year in non-emergency situations, subject to the following conditions [40 CFR 60.4243(d)(3) and 20 DCMR 201]:

i. Any such operations shall be counted as part of the 100 hours per calendar year for maintenance and testing as provided in Condition III(c);

ii. These 50 hours of non-emergency operations per calendar year cannot be used for peak shaving, or as part of any program to supply power to generate income for the facility as part of a financial arrangement with another entity;

iii. All operations prohibited under Condition III(f) are also prohibited under this condition; and

iv. All operations of the emergency generator resulting from a deviation in voltage or frequency from the electric provider to the premises such that the equipment being supported cannot be safely or effectively operated shall be considered non-emergency operation and counted as part of this 50 hour per calendar year allowance.

d. The emergency generator shall fire only natural gas per the submitted plan and specifications. [20 DCMR 201]

e. The emergency generator shall be operated and maintained in accordance with the recommendations of the equipment manufacturer. [20 DCMR201]

f. The emergency generator shall not be operated in conjunction with a voluntary demand-reduction program or any other interruptible power supply arrangement with a utility, other market participant, or system operator. [20 DCMR 201]

g. 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. 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. The Permittee shall monitor the date, time, duration, and reason for each emergency generator startup to ensure compliance with Conditions III(a), (b), (c), and (f).

b. In order to ensure compliance with Condition III(a), the Permittee shall monitor the total hours of operation each month with the use of properly functioning, non-resettable hour metering device. [40 CFR 60.4237(c)]

c. The Permittee shall monitor the equipment for compliance with Conditions II(b) and (c). Records of such monitoring shall be kept in accordance with the record keeping requirements of this permit.

d. 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]

e. Within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup of the unit, the Permittee shall demonstrate compliance with Condition II(a) of this permit by performing an initial performance test on the unit according to the following requirements [40 CFR 60.8 and 60.4243(a)(2)(iii)] and the requirements of Condition VI:

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 tests 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 permit and 40 CFR 60, Subpart JJJJ, when calculating emissions of VOC, VOC emissions of formaldehyde should not be included. To determine compliance with the 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 Permittee 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 placed on a propane basis using Equation 6 of that same section.

f. In addition to the initial performance test of Condition IV(e), the Permittee must conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first thereafter to demonstrate compliance with Condition II(a). [40 CFR 60.4243(a)(2)(iii)]

V. Notification and Reporting Requirements:

a. 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.

b. The test protocol shall be approved by the Department prior to initiating any testing. Upon approval of the test protocol, the Company shall finalize the test date with the assigned inspector in the Compliance and Enforcement Branch.

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

d. 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:

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

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

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

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

e. 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).

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

Department of Energy and Environment

Chief, Compliance and Enforcement Branch

Air Quality Division

1200 First Street, NE, 5th Floor

Washington, D.C. 20002

and

Reports to EPA must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA’s Central Data Exchange (CDX) ([www.epa.gov/cdx](http://www.epa.gov/cdx)). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the EPA Administrator at the following address:

EPA Region III

Director, Air Protection Division

1650 Arch Street

Philadelphia PA, 19103

1. The Permittee shall submit an initial notification of the date of construction of the emergency generator. This notification must be postmarked no later than thirty (30) days after such date. [40 CFR 60.7(a)(1)]
2. The notification under Condition V(g) must include the following information [40 CFR 60.4245(c)]:
3. Name and address of the Permittee;
4. The address of the location of the emergency generator;
5. Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;
6. Emission control equipment; and
7. Fuel used.

VI. Record Keeping Requirements:

a. 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. The date, time, duration, and reason for each start-up of the emergency generator, including the following specific information:

i. If the unit is operated in non-emergency situations pursuant to Condition III(c)(2), the specific purpose for each operation period must be recorded; and

ii. If the unit is operated for emergency purposes, what classified the operation as emergency.

2. The total hours of operation for each month and the cumulative 12-month rolling period shall be calculated and recorded within 15 days of the end of each calendar month for the previous month and the 12-month period ending at the end of that month;

3. The total hours of operation for maintenance checks and readiness and non-emergency operation testing pursuant to Condition III(c) each month, and totaled for each calendar year by January 15 of each year for the previous calendar year;

1. The total hours of operation each calendar year for non-emergency purposes pursuant to Condition III(c)(2);
2. Records of the maintenance performed on the unit *[Note that these records must be sufficient such that the Permittee is complying with the requirements of Condition III(e)];*
3. Records of the results of any visible emissions monitoring performed;
4. Records of the occurrence and duration of each malfunction of operation; and

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

b. The Permittee shall maintain 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.

c. The Permittee shall maintain documentation to show that the engine meets the emission standards in Condition II(a). [40 CFR 60.4245(a)(4)]

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

Sincerely,

Stephen S. Ours, P.E.

Chief, Permitting Branch

SSO:JCN