October 20, 2015

John Michael Bixler

Deputy Director of Facilities Management

Smithsonian Institution

National Museum of Natural History

1000 Constitution Ave, NW, MRC 132

Washington DC 20004

**RE: Permit #6209-R2 to Operate a 230 kWe Natural Gas Fired Emergency Generator Set**

Dear Mr. Bixler:

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 Smithsonian Institution (the Permittee) to operate a 230 kWe emergency generator set with a 357 HP natural gas fired engine at the National Zoological Park, Elephant House, located at 3001 Connecticut Avenue, NW, Washington DC, per the submitted plans and specifications, received June 29, 2015, as revised by Alana Olson’s email to Stephen Ours of September 4, 2015, is hereby approved, subject to the following conditions:

I. General Requirements:

a. The emergency generator set shall be maintained and operated in accordance with the air pollution control requirements of 20 DCMR.

b. This permit expires on October 19, 2020 [20 DCMR 200.4]. If continued operation after this date is desired, the owner or operator shall submit a renewal application July 19, 2020.

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]
2. If not already completed, upon issuance of this permit, the Permittee shall promptly supplement their pending Title V operating permit application as appropriate to update it to include the requirements of this permit [20 DCMR 301.2] This supplement shall be submitted within 30 days of the date of issuance of this permit.

II. Emission Limitations:

a. 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].

b. 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 owner or operator 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. [20 DCMR 201]

b. With the exceptions specified in Condition III(c), the emergency generator shall be operated only during emergencies as follows [20 DCMR 201]:

1. An electrical power outage 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.);

2. When there is a deviation of voltage or frequency from the electrical provider to the premises of 5 percent or more below standard voltage or frequency such that the equipment being supported cannot be safely or effectively operated. Note that any such operation shall be considered to be part of the 100 hours of operation allowed under Condition III(c); or

3. When a sudden, unexpected event occurs that, if not immediately attended to, presents a safety or public health hazard, is necessary to protect equipment from damage, or is necessary to avoid imposing an unreasonable financial burden. An emergency includes operations necessitated by non-routine failures of equipment, but it does not include voluntary demand reductions covered by Condition III(e).

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 calendar 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. [20 DCMR 201]

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. DCMR 201]; and

2. The emergency generator may be operated for up to fifty (50) hours per calendar year in non-emergency situations. Any such operation shall be counted as part of the 100 hours per calendar year for maintenance and testing as provided in Condition III(c). 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. All operations prohibited under Condition III(f) are also prohibited under this condition. [20 DCMR 201]

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

e. 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]

f. The emergency generator shall be operated and maintained in accordance with the manufacturer’s emission-related written instructions or develop and implement a written maintenance plan consistent with industry standards for similar models if manufacturer instructions are unavailable. Any developed maintenance plan must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [20 DCMR 201]

g. In addition to the requirements of Condition III(f), the following maintenance activities shall be performed on the schedules specified [20 DCMR 201]:

1. Change oil and filter every 500 hours of operation or annually, whichever comes first;

2. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and

3. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

h. The Permittee shall minimize the engine’s time spent at idle during startup and minimize the engine’s startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. [20 DCMR 201]

i. At all times, including periods of startup, shutdown, and malfunction, the owner shall, maintain and operate the unit in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required by this permit have been achieved. Determination of whether acceptable operating procedures are being used will be based on information available to the Department and the EPA Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, review of operation and maintenance records, 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 (e) of this permit.

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. Such a device must be installed if not already installed on the equipment. [20 DCMR 201]

c. 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]

V. 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 five (5) years [20 DCMR 302.1(c)(2)(B) and 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 due to a deviation in voltage from the utility pursuant to Condition III(b)(2) this shall be specifically noted;

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

iii. 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 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.

4. The total hours of operation due to a deviation in voltage from the utility pursuant to Condition III(b)(2) each calendar year, totaled by January 15 of each calendar year for the previous calendar year;

5. Records of total fuel used in the engine/generator, kept in a 12-month rolling format;

6. Records of the maintenance performed on the unit *[Note that these records must be sufficient to the Permittee is complying with the requirements of Conditions III(e) and (f)]*;

7. Records of the results of any visible emissions monitoring performed;

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

9. 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 owner or operator shall maintain a copy of the emergency generator’s manufacturer’s maintenance and operating recommendations at the facility. If such documentation is unavailable, the owner or operator shall maintain documentation of the written maintenance plan consistent with industry standards in accordance with which the unit is being maintained. [20 DCMR 500.1]

VI. Reporting Requirements:

a. If the Permittee ever operates the emergency generator for more than 15 hours in a calendar year for the purpose described in Condition III(b)(2), the Permittee shall thereafter submit annual reports to the U.S. Environmental Protection Agency (EPA) and the Department as specified in Condition IV(b). These annual reports shall contain the following information: [20 DCMR 500.1]

1. Company name and address where the engine is located;

2. Date of report and the beginning and ending dates of the reporting period;

3. Engine site rating and model year;

4. Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place;

5. Hours operated for the purpose specified in Condition III(b)(2), including the date, start time, and end time for engine operation for the purpose specified in Condition III(b)(2); and

b. Reports shall be submitted as follows:

1. Reports to the Department shall be submitted to the following address:

Department of Energy and Environment

Chief, Compliance and Enforcement Branch

Air Quality Division

1200 First Street NE, 5th Floor

Washington, DC 20002

2. 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

3. The first annual report must cover the calendar year 2015 or the first calendar year thereafter that the unit operated for more than 15 hours for the purpose specified in Condition III(b)(2). Each annual report must be submitted by March 31 of the calendar year following the year covered by the report.

If you have any questions, please call me at (202) 535-1747 or Olivia Achuko at (202) 535-2997.

Sincerely,

Stephen S. Ours, P.E.

Chief, Permitting Branch

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