

23 July 2014

Richard A. Licht, Director  
Rhode Island Department of Administration  
One Capitol Hill  
Providence, RI 02908-5890

Dear Mr. Licht:

The Department of Environmental Management, Office of Air Resources has reviewed and approved your minor source permit application for the installation and operation of a natural gas fired generator and associated air pollution control device to be located at the Pastore Complex, in the co-generation plant located at Power Road, Cranston, RI.

Enclosed is a minor source permit issued pursuant to our review of your application (Approval Nos. 2258 and 2259).

The issuance of this minor source permit qualifies as an Off-Permit Change for your Title V Operating Permit under subsection 29.11.2 of Air Pollution Control Regulation No. 29. This minor source permit will be incorporated into your operating permit at the time of renewal or re-opening.

A copy of this minor source permit and a copy of your application should be maintained with your operating permit at all times until this permit is incorporated into your operating permit. In addition, as stated in subsection 29.11.2(d) of Air Pollution Control Regulation No. 29, the permit shield in Section II of your operating permit shall not apply to this permit until it is incorporated into your operating permit.

If there are any questions concerning this permit, please contact me at 401-222-2808, extension 7415 or at [stephen.stamand@dem.ri.gov](mailto:stephen.stamand@dem.ri.gov).

Sincerely,

Stephen G. St. Amand  
Air Quality Specialist  
Office of Air Resources

cc: Cranston Building Official  
Susan Ferreira - RIDOA  
Michael Anderson - TRC

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS  
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR RESOURCES

MINOR SOURCE PERMIT

STATE OF RHODE ISLAND, DEPARTMENT OF ADMINISTRATION

APPROVAL NOs. 2258 and 2259

Pursuant to the provisions of Air Pollution Control Regulation No. 9, this minor source permit is issued to:

*State of Rhode Island, Department of Administration*

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For the following:

*Installation of a 2 MW Caterpillar lean-burn natural gas fired engine, Model No. G3520C IM*

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*(Approval No. 2258), equipped with a Miratech oxidation catalyst, Model No. SP-ZHSSIO-*

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*54x61-24-XH3.5B2 (Approval No. 2259).*

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Located at: *Pastore Center, Power Road, Cranston, RI 02920*

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**This permit shall be effective from the date of its issuance and shall remain in effect until revoked by or surrendered to the Department. This permit does not relieve *State of Rhode Island, Department of Administration* from compliance with applicable state and federal air pollution control rules and regulations. The design, construction and operation of this equipment shall be subject to the attached permit conditions and emission limitations.**

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Douglas L. McVay, Chief  
Office of Air Resources

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Date of issuance

**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS  
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR RESOURCES**

Permit Conditions and Emission Limitations

**State of Rhode Island, Department of Administration**

**APPROVAL NOs. 2258 and 2259**

**A. Emission Limitations**

1. Nitrogen Oxides (as Nitrogen Dioxide (NO<sub>2</sub>))

The emission rate of nitrogen oxides discharged to the atmosphere from the engine exhaust shall not exceed 0.59 g/BHP-hr or 3.87 pounds per hour, whichever is more stringent.

2. Carbon Monoxide (CO)

The emission rate of carbon monoxide discharged to the atmosphere from the engine exhaust shall not exceed 0.22 g/BHP-hr or 1.38 pounds per hour, whichever is more stringent.

3. Total Volatile Organic Compounds (VOC)

The emission rate of total VOC discharged to the atmosphere from the engine exhaust shall not exceed 0.68 g/BHP-hr or 3.15 pounds per hour, whichever is more stringent.

4. Opacity

Visible emissions from the engine exhaust shall not exceed 10% opacity except for a period or periods aggregating no more than three minutes in any one hour.

**B. Operating Requirements**

1. Natural gas shall be the only fuel fired in the engine.
2. The maximum firing rate for the engine shall not exceed 23,000 ft<sup>3</sup>/hr of natural gas.
3. The engine shall not operate more than 2000 hours in any 12-month period.
4. The engine shall be operated and maintained in accordance with the manufacturer's emission-related written instructions.

5. The oxidation catalyst shall be operated and maintained in accordance with the manufacturer's recommendations.
6. There shall be no bypassing of the air pollution control system during start-up, operation or shutdown.

**C. Monitoring Requirements**

1. The engine shall be equipped with a non-resettable elapsed time meter to indicate, in cumulative hours, the elapsed engine operating time for the unit.
2. The generator shall be equipped with a kilowatt-hour meter to indicate, in cumulative kilowatt-hours, the power generated by the engine-generator set.
3. Natural gas flow to the engine shall be continuously measured and recorded.
4. The owner/operator shall continuously measure the temperature across the catalyst bed (inlet and outlet) of air pollution system.

**D. Stack Testing**

1. Within 180 days of start-up, initial performance testing shall be conducted for the engine. Performance testing shall be conducted in accordance with 40 CFR 60.4244 for nitrogen oxides, carbon monoxide, and VOC.

Thereafter, emissions testing for the engine shall be conducted every 5 years to determine compliance with the carbon monoxide and VOC emission limitations. Each emission test for carbon monoxide and VOC shall be conducted in accordance with the procedures specified in 40 CFR 60.4244.

2. An emissions testing protocol shall be submitted to the Office of Air Resources and the USEPA at least 60 days prior to the performance of any emissions test. The owner/operator shall provide the Office of Air Resources and the USEPA at least 60 days prior notice of any emissions test.
3. All test procedures used for stack testing shall be approved by the Office of Air Resources and the USEPA prior to the performance of any testing stack test.
4. The owner/operator shall install any and all test ports or platforms necessary to conduct the required stack testing, provide safe access to any platforms and provide the necessary utilities for sampling and testing equipment.
5. All testing shall be conducted under operating conditions deemed acceptable and representative for the purpose of assessing compliance with the applicable emission limitations.

6. All emissions testing must be observed by the Office of Air Resources or its authorized representatives to be considered acceptable, unless the Office of Air Resources provides authorization to the owner/operator to conduct the testing without an observer present.
7. A final report of the results of the initial and subsequent performance tests shall be submitted to the Office of Air Resources and the USEPA no later than 60 days following completion of the testing.

**E. Recordkeeping and Reporting**

1. The owner/operator shall, on a monthly basis, no later than 15 days after the first of each month, determine and record the hours of operation of the engine for the previous month. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources or its authorized representative and EPA upon request.
2. The owner/operator shall, on a monthly basis, no later than 15 days after the first of each month, determine and record the fuel use for the engine for the previous month. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources or its authorized representative and EPA upon request.
3. The owner/operator shall, on a monthly basis, no later than 15 days after the first of each month, determine and record the kilowatt-hours generated for each engine for the previous month. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources or its authorized representative and EPA upon request.
4. The owner/operator shall maintain records of the temperature across the catalyst bed (inlet and outlet) of the air pollution control system in an operating log at least once per day:
5. The owner/operator shall notify the Office of Air Resources, in writing, whenever the hours of operation in any 12-month period exceeds 2000 hours for the engine.
6. The owner/operator shall maintain all records that demonstrate that the engine meets the emission standards of 40 CFR 60 Subpart JJJJ.
7. The owner/operator shall record all maintenance activities conducted on the engine.
8. The owner/operator shall notify the Office of Air Resources in writing of the date of actual initial start-up of the engine no later than fifteen days after such date.
9. The owner/operator shall notify the Office of Air Resources in writing of the date whenever the catalyst is replaced for the oxidation catalyst system.

10. The owner/operator shall maintain properly signed, contemporaneous operating logs or other relevant evidence to document actions during startup/shutdown periods.
11. The owner/operator shall notify the Office of Air Resources of any anticipated noncompliance with the terms of this permit or any other applicable air pollution control rules and regulations.
12. The owner/operator shall notify the Office of Air Resources in writing of any planned physical or operational change to any equipment that would:
  - a. Change the representation of the facility in the application.
  - b. Alter the applicability of any state or federal air pollution rules or regulations.
  - c. Result in the violation of any terms or conditions of this permit.
  - d. Qualify as a modification under APC Regulation No. 9.

Such notification shall include:

- Information describing the nature of the change.
- Information describing the effect of the change on the emission of any air contaminant.
- The scheduled completion date of the planned change.

Any such change shall be consistent with the appropriate regulation and have the prior approval of the Director.

13. Deviations from permit conditions, including those attributable to upset conditions as defined in this permit, shall be reported, in writing, within five (5) business days of the deviation, to the Office of Air Resources. A copy of any such report shall be sent to the USEPA Region 1. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.
14. All records required in this permit shall be maintained for a minimum of five years after the date of each record and shall be made available to representatives of the Office of Air Resources or its authorized representative and EPA upon request.

## **F. Other Permits Conditions**

1. The emission limitations of Condition A.1 - A.3 shall not apply during engine startup/shutdown conditions. Engine startup shall be defined as the first ten minutes of firing following the initiation of firing. Engine shutdown shall be defined as the cessation of operation for any purpose.
2. The owner/operator is subject to the requirements of 40 CFR 60, Subpart A (General Provisions) and Subpart JJJJ (Standards of Performances for Stationary Spark Ignition Internal Combustion Engines). Compliance with all applicable provisions therein is required.
3. To the extent consistent with the requirements of this permit and applicable federal and state laws, the equipment shall be designed, constructed and operated in accordance with the representation of the equipment in the permit application.
4. Employees of the Office of Air Resources and its authorized representatives shall be allowed to enter the facility at all times for the purpose of inspecting any air pollution source, investigating any condition it believes may be causing air pollution or examining any records required to be maintained by the Office of Air Resources.
5. At all times, including periods of startup, shutdown and malfunction, the owner/operator shall, to the extent practicable, maintain and operate the facility in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Office of Air Resources which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures and inspection of the source.
6. The emission and dispersion characteristics of all emission sources at the facility shall be consistent with the parameters used in the air quality modeling to demonstrate that the emissions from the facility do not cause or contribute to air pollution in violation of any national ambient air quality standard. The Office of Air Resources, in its sole discretion, may reopen this minor source permit if it determines that the emission and dispersion characteristics have changed significantly and that emission limitations must be revised and/or added to this permit to ensure compliance with national ambient air quality standards.

## **G. Malfunctions**

1. The owner/operator may seek to establish that a malfunction of any air pollution control system that would result in noncompliance with any of the terms of this permit or any other applicable air pollution control rules and regulations was due to unavoidable increases in emissions attributable to the malfunction. To do so, the owner/operator must demonstrate to the Office of Air Resources that:

- a. The malfunction was not attributable to improperly designed equipment, lack of preventative maintenance, careless or improper operation or operator error;
- b. The malfunction is not part of a recurring pattern indicative of inadequate design, operation or maintenance;
- c. Repairs were performed in an expeditious fashion. Off-shift labor and overtime should be utilized, to the extent practicable, to ensure that such repairs were completed as expeditiously as practicable.
- d. All possible steps were taken to minimize emissions during the period of time that repairs were performed.
- e. Emissions during the period of time that the repairs were performed will not:
  - (1) Cause an increase in the ground level ambient concentration at or beyond the property line in excess of that allowed by Air Pollution Control Regulation No. 22 and any Calculated Acceptable Ambient Levels; and
  - (2) Cause or contribute to air pollution in violation of any applicable state or national ambient air quality standard.
- f. The reasons that it would be impossible or impractical to cease the source operation during said period.
- g. The owner/operator's actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs or other relevant evidence.

This demonstration must be provided to the Office of Air Resources within two working days of the time when the malfunction occurred and contain a description of the malfunction, any steps taken to minimize emissions and corrective actions taken.

The owner/operator shall have the burden of proof in seeking to establish that noncompliance was due to unavoidable increases in emissions attributable to the malfunction.