

8 November 2013

Kelly Fredericks, P.E., A.A.E.
President, CEO
Rhode Island Airport Corporation
2000 Post Road, Warwick, RI 02886

Dear Mr. Fredericks:

The Department of Environmental Management, Office of Air Resources has reviewed and approved your request for a minor source permit for air pollution control equipment at T.F. Green Airport, Warwick Industrial Drive, Warwick RI.

Enclosed are permit conditions and emission limitations for the minor source permit (Approval No. 2236).

Should you have any questions concerning this permit, I can be reached at (401) 222-2808, extension 7430, or by email at darren.austin@dem.ri.gov.

Sincerely,

Darren J. Austin
Air Quality Specialist
Office of Air Resources

Cc: City of Warwick Building Official
Mark Ervin, Gresham Smith and Partners

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

MINOR SOURCE PERMIT

RHODE ISLAND AIRPORT CORPORATION

APPROVAL NO. 2236

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

Rhode Island Airport Corporation

For the following:

Installation of an L&J Technologies Model No. 97311-343323001 waste gas flare to burn excess methane from the anaerobic fluidized bed reactor that was not used as process heating fuel.

Located at: *50 Warwick Industrial Drive, Warwick*

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 *Rhode Island Airport Corporation* 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.

**Douglas L. McVay, Chief
Office of Air Resources**

Date of issuance

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

Permit Conditions and Emission Limitations

RHODE ISLAND AIRPORT CORPORATION

Approval No. 2236

A. Emission Limitations

1. Nitrogen oxides (as Nitrogen dioxide (NO₂))

The emission rate of nitrogen oxides discharged to the atmosphere from the burner shall not exceed 0.06 lbs per million BTU or 0.18 lbs/hr, whichever is more stringent.

2. Carbon Monoxide (CO)

The emission rate of carbon monoxide discharged to the atmosphere from the burner shall not exceed 0.30 lbs per million BTU or 0.90 lbs/hr, whichever is more stringent.

3. The flare shall be operated with no visible emissions.

B. Operating Requirements

1. Excess biogas generated from the anaerobic fluidized bed reactor system and not discharged to the hot water heater, shall be treated by the burner before discharge to the atmosphere.

2. The minimum operating temperature of the flare shall be 1500°F.

3. The burner shall be equipped with an interlock system that ensures ignition of the pilot flame before biogas is discharged to the device.

4. Biogas shall be the primary fuel for the burner. The use of natural gas as an auxiliary fuel shall be limited to startup only.

5. The burner shall be operated at all times when biogas is being vented to it.

C. Monitoring Requirements

1. Temperature Monitoring

- a. The owner/operator shall install, calibrate, operate, and maintain a temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ± 1 percent of the temperature being measured expressed in degrees Celsius or ± 0.5 degrees Celsius, whichever is greater.
 - b. The thermocouple used to measure burner operating temperature shall be above the flame zone and at least three feet below the top of the flare shroud.
 - c. The owner/operator shall verify the accuracy of the temperature monitor once each calendar year with a reference temperature monitor (traceable to National Institute of Standards and Technology (NIST) standards or an independent temperature measurement device dedicated for this purpose). During accuracy checking, the probe of the reference device shall be at the same location as that of the temperature monitor being tested.
2. The owner/operator shall install, calibrate and maintain a gas flow rate measuring device that shall record the flow of biogas to the burner at least every fifteen minutes.
 3. The burner shall be equipped with a failure alarm with an automatic blower and biogas supply valve shut-off system to isolate the flare from the biogas supply line, to shut off the blower and to notify a responsible party of the shutdown.

D. Record Keeping and Reporting

1. The owner/operator shall continuously measure and record the operating temperature of the burner.
2. The owner/operator shall maintain records of the biogas flow rate.
3. The owner/operator shall notify the Office of Air Resources in writing of the date of actual start-up of the burner system no later than 15 days after such date.
4. The owner/operator shall notify the Office of Air Resources immediately of any breakdown or malfunction of the burner. A written report of any breakdown or malfunction shall be submitted within five (5) days of the

breakdown or malfunction. The following information shall be provided in each report:

- a. The date the breakdown or malfunction occurred
- b. The suspected reason for the malfunction
- c. The corrective action taken
- d. The time needed to make repairs

A copy of each report shall be kept at the facility.

5. 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.
6. The owner/operator shall notify the Office of Air Resources, in writing, of any noncompliance with the terms of this permit or any other air pollution control rule or regulation within 30 calendar days of becoming aware of such occurrence and supply the Director with the following information:
 - a. The name and location of the facility;
 - b. The subject source(s) that caused the noncompliance with the permit term;
 - c. The time and date of first observation of the incident of noncompliance;
 - d. The cause and expected duration of the incident of noncompliance;
 - e. The estimated rate of emissions (expressed in lbs/hr or lbs/day) during the incident and the operating data and calculations used in estimating the emission rate.
 - f. The proposed corrective actions and schedule to correct the conditions causing the incidence of noncompliance.
7. The owner/operator shall notify the Office of Air Resources in writing of any planned physical or operational change to the flare that would:
 - a. Change the representation of the facility in the permit 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 the 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 change, which may result in an increased emission rate of any air contaminant, shall be subject to the approval of the Director.

8. All 3-hour periods of operation during which the average flare temperature was more than 50°F below the minimum operating temperature in Condition B.1 constitute exceedances that shall be recorded and reported.
9. All records required as a condition of this approval 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 upon request.

E. 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 air pollution control equipment, lack of preventative maintenance, careless or improper operation, or operator error;
 - b. The malfunction was not part of a recurring pattern indicative of inadequate design, operation, or maintenance;
 - c. Repairs necessary to bring the air pollution control system back to normal and proper operation 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. Any parts or material needed should be shipped overnight where possible or practical.

- d. All possible steps were taken to minimize emissions during the period of time that the 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.

This demonstration must be provided to the Office of Air Resources, in writing, 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.

F. Other Permit Conditions

- 1. To the extent consistent with the requirements of this approval and applicable Federal and State laws, the facility shall be designed, constructed, and operated in accordance with the representation of the device in the permit application.
- 2. 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.
- 3. 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.

4. The Office of Air Resources may reopen and revise this permit if it determines that:
 - a. a material mistake was made in establishing the operating restrictions; or,
 - b. inaccurate emission factors were used in establishing the operating restrictions; or,
 - c. emission factors have changed as a result of stack testing or emissions monitoring.

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