

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, 50 Warwick Industrial Drive, Warwick RI.

Enclosed are permit conditions and emission limitations for the minor source permit (Approval No. 2235).

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. 2235

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 ECS Environmental Solutions, Model No. VI, Series P, double bed carbon adsorption system with passive venting to control hydrogen sulfide emissions from the two Deicer Management Storage Tanks.

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. 2235

A. Emission Limitations

1. The total quantity of hydrogen sulfide (H₂S) emissions discharged to the atmosphere from the Deicer Management Storage Tanks shall not exceed 10 pounds during any consecutive 12 month period.
2. The ECS carbon adsorption system shall reduce emissions of H₂S by at least 99%.

B. Operating Requirements:

1. All H₂S emissions generated from the Deicer Management Storage Tanks shall be captured, contained and routed to the ECS carbon adsorption system for treatment prior to discharge to the atmosphere.
2. The ECS carbon adsorption system shall be operated according to its design specifications at all times.
3. There shall be no bypassing of the ECS carbon adsorption system during times H₂S is being discharged from the Deicer Management Storage Tanks.

C. Monitoring

1. Pressure drop across the ECS carbon adsorption system shall be monitored continuously. Pressure drop across the ECS carbon adsorption system shall not exceed 3 inches water column.
2. Provisions shall be made to allow for sampling of the inlet and outlet gases of the ECS carbon adsorption system.
3. The H₂S concentration at the inlet and outlet of the ECS carbon adsorption system shall be measured and recorded once per week while the system is operating.
4. The analyzer used to measure the inlet and outlet concentrations of H₂S shall be calibrated according to the manufacturer's recommendations.

D. Record Keeping and Reporting

1. The owner/operator shall collect, record and maintain the following information each month for the Deicer Management Storage Tanks and the ECS carbon adsorption system:
 - a. A log of the volume of wastewater collected and stored in both Deicer Management Storage Tanks during each deicing season.
 - b. Records indicating the dates that the activated carbon was replaced in each ECS carbon adsorption unit;
 - c. All monitoring equipment calibration records.
 - d. A maintenance log for the ECS carbon adsorption system detailing all routine and non-routine maintenance performed including dates and duration of any outages.
2. The owner/operator shall collect, record and maintain the measured inlet and outlet concentration of H₂S from the ECS carbon adsorption system on a weekly basis.
3. The owner/operator shall submit to the Office of Air Resources a summary of the weekly inlet and outlet concentration of H₂S as measured from the ECS carbon adsorption system every three months. The records are to be submitted to the Office of Air Resources for the first 12 months of operation and shall be submitted no later than 15 days following the three month period.
4. The owner/operator shall, on a monthly basis, no later than 15 days after the first of the month, determine the total quantity of H₂S discharged to the atmosphere for the previous 12 month period. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources upon request.
5. The owner/operator shall notify the Office of Air Resources in writing, within 15 days of the determination, whenever the total quantity of H₂S discharged to the atmosphere from the ECS carbon adsorption system during the previous 12 month period exceeds 10 pounds.
6. The owner/operator shall notify the Office of Air Resources in writing, within 30 days, the date the activated carbon is replaced and the volume of activated carbon replaced.
7. The owner/operator shall notify the Office of Air Resources in writing of the date of actual start-up of the ECS carbon adsorption system no later than 15 days after such date.

8. 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.
9. 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 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.

10. The owner/operator shall notify the Office of Air Resources, in writing, of any noncompliance with the terms of this permit 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.

11. 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 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 and 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.

F. Other Permit Conditions

1. To the extent consistent with the requirements of this permit and applicable federal and state laws, the facility shall be designed, constructed and operated in accordance with the representation of the facility in the permit application.
2. Within 60 days of issuance of this permit the owner/operator must submit to the Office of Air Resources, documentation demonstrating how compliance with the emission limitation in Condition A.1 will be determined. All calculation procedures and equations must be included.
3. If the owner/operator determines that the emission limitation of Condition A.1 has been exceeded at any time the owner/operator shall submit an air quality modeling analysis to demonstrate that emissions of H₂S from the facility comply with the provisions of subsection 22.3.3(a) of RI Air Pollution Control Regulation No. 22. Within 60 days of determining the emission rate of H₂S exceeds the emission limitation of Condition A.1, a modeling protocol consistent with the RI Air Dispersion Modeling Guideline for Stationary Sources must be submitted to the Office of Air Resources. A modeling protocol must be submitted to and be approved by the Office of Air Resources prior to the submission of any modeling analysis unless the Office Air Resources agrees, in writing, that a modeling protocol is not necessary.
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 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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