Title V Air Operation Permit Revision

Permit No. 0310358-013-AV

APPLICANT

The applicant for this project is the City of Jacksonville. The applicant's responsible official and mailing address are: Ms. Kerri Stewart, Chief Administrative Officer, City of Jacksonville Public Works Department, 117 West Duval Street, St. James Building, 4th Floor, Jacksonville, FL 32202.

FACILITY DESCRIPTION

The existing Trail Ridge Landfill facility is located at 5110 U.S. Highway 301 South in Baldwin, Duval County, Florida. The Trail Ridge Energy, LLC facility is located at the existing Trail Ridge Landfill facility. The Trail Ridge Energy, LLC facility includes six lean-burn spark-ignition reciprocating internal combustion engine (RICE)-generator sets firing landfill gas, is categorized under Standard Industrial Classification (SIC) Code No. 4953, Refuse Systems. The UTM coordinates are Zone 17, 399.873 km East, and 3344.309 km North.

Trail Ridge Landfill is a Class I Municipal Solid Waste (MSW) Landfill consisting of 176 acres. This landfill commenced construction in 1992. Trail Ridge Landfill receives approximately 2,500 - 3,000 tons of waste daily. The site totals 977 acres of land and currently has a 148-acre "footprint" which serves residential and commercial customers.

The nonmethane organic compounds (NMOC) emissions are greater than 50 megagrams per year. Landfill gas (LFG) is directed to an enclosed flare where methane, NMOC and HAPs contained in the gas are destroyed at high temperatures. The facility currently operates two flares – one 5,000 standard cubic feet per minute (scfm) open flare and one 1,600 scfm open flare.

In order to reduce the amount of LFG wasted by flaring, all available LFG from the landfill is supplied to Trail Ridge Energy for use as fuel to power the proposed internal combustion (IC) engine electricity generation plant.

PROJECT DESCRIPTION

The purpose of this permitting project is to revise the existing Title V permit for the above referenced facility to add the installation and operation of four new Caterpillar Model No. G3520C engine generator sets and to modify the CO emissions standard as Best Available Control Technology (BACT) for the proposed and existing engine/generator sets.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

March 17, 2011 Department received the application for an air pollution construction permit and Title V revision permit.

April 8, 2011 Department requested additional information.

June 20, 2011 Department received additional information; application complete.

PRIMARY REGULATORY REQUIREMENTS

Title III: The facility is not identified as a major source of hazardous air pollutants (HAP).

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

PSD: The facility is a Prevention of Significant Deterioration (PSD)-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility does operate units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.

NESHAP: The facility does operate units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63.

CAIR: The facility is not subject to the Clean Air Interstate Rule (CAIR) set forth in Rule 62-296.470, F.A.C.

PROJECT REVIEW

To incorporate the provisions of permit No. 0310358-012-AC, which authorized the construction of four lean-burn reciprocating internal combustion engine/generator sets as part of the existing landfill gas-to-energy plant at the Trail Ridge Landfill. In addition, the permittee requested a modification to the CO emissions standard as Best Available Control Technology (BACT) for the existing engine/generator sets. The landfill gas will be used to fuel the proposed four and existing six lean-burn reciprocating internal combustion engine/generator sets. The plant will have the potential to generate an additional 6.4 megawatts (MW) of electricity for a combined nominal 16 MW of power to the electrical grid. In addition, the applicant requested a concurrent revision of the Title V air operation permit. The two existing flares will be retained as additional combustion devices for the landfill gas. The landfill gas will be routed through a landfill gas treatment system and then to the engines. As necessary, residual landfill gas will be routed to the flares. The project will result in the following potential emissions increases at the existing landfill: 284.7 tons/year of carbon monoxide (CO); 51.7 tons/year of nitrogen oxides (NO_X); 20.7 tons/year of particulate matter (PM), particulate matter with a mean particle diameter of 10 microns or less (PM_{10}) and particulate matter with a mean particle diameter of 2.5 microns or less ($PM_{2.5}$); 16.6 tons/year of sulfur dioxide (SO_2); and 24.2 tons/year of volatile organic compounds (VOC).

AC/PSD Permit Revisions. The applicant requested the concurrent processing of an air construction permit revision to change air construction/PSD permit conditions. See Permit No. 0310358-012-AC/PSD-FL-374C for the changes made. The Technical Evaluation and Preliminary Determination summarizes the requested changes, the Department's responses and identifies the changes made to the underlying air construction permit conditions. These changes have been reflected within the Title V air operation permit.

Changes are shown in the condition with a ~~strikethrough format~~ for deletions and a double underline format for additions. Only the appendices that were changed are included, all of the remaining appendices will be provided in the final permit.

CONCLUSION

This project revises Title V air operation permit No. 0310358-010-AV, which was issued on May 5, 2011. This Title V air operation permit revision is issued under the provisions of Chapter 403, Florida Statues (F.S.), and Chapters 62-4, 62-210 and 62-213, F.A.C.