

Illinois Environmental Protection Agency
Bureau of Air, Permit Section
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Project Summary
For a Construction Permit Application From
Industrial Power Generating Company, LLC (INGENCO) For A
Landfill Gas-to-Energy Facility Located At
The CDT Landfill In
Joliet, Illinois

Site Identification No.: 197744AAI
Application No.: 08100056
Date Received: October 27, 2008

Schedule

Public Comment Period Begins: April 23, 2009
Public Comment Period Closes: May 23, 2009

Illinois EPA Contacts

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I. INTRODUCTION

Industrial Power Generating Company, LLC (INGENCO) has submitted a construction permit application for a new landfill gas-to-energy facility located at the closed CDT Landfill in Joliet, Illinois, owned and operated by CDT Landfill, Inc. (Illinois EPA Bureau of Air I.D. 197045AIX), in Joliet, Illinois. The construction of this facility requires a permit from the Illinois EPA because of its emissions.

The Illinois EPA has reviewed INGENCO's application and made a preliminary determination that the application for the proposed project meets applicable requirements. Accordingly, the Illinois EPA has prepared a draft of the air pollution control construction permit that it would propose to issue for this project. The permit is intended to identify the applicable requirements that apply to the proposed project and to set necessary limitations on those emissions. However, before issuing this permit, the Illinois EPA is holding a public comment period to receive comments on the proposed issuance of this permit and the terms and conditions of the draft permit.

II. PROJECT DESCRIPTION

The principal emission units at this proposed gas-to-energy facility includes 12 dual-fuel fired compression ignition engines (the affected engines), each fired with landfill gas generated from CDT landfill and distillate fuel oil (including bio-diesel) to generate electricity. The landfill gas-to-energy facility would also have a 30,000 gallons capacity diesel fuel storage tank, small heating/lubricating oil storage tanks, and a small heating boiler.

The principal air contaminants emitted from the proposed engines would be NO_x, CO, PM, SO₂, and VOM. NO_x can be formed thermally by combination of oxygen and nitrogen in the air at the temperatures at which fuel is burned. NO_x can also be formed from the combination of any nitrogen in the fuel with oxygen. This is not relevant for burning of natural gas, which contains minimal amounts of nitrogen. CO is formed by the incomplete combustion of fuel. CO is associated with most combustion processes and is found in measurable amounts in engine exhaust. VOM is also emitted as a result of incomplete combustion of fuel. SO₂ is also formed emitted from combustion of landfill gas or fuel oil because of their sulfur content of landfill gas.

NO_x emissions are controlled by proper combustion.

III. PROJECT EMISSIONS

The potential annual emissions from the 12 engines will be approximately 98.7 tons of NO_x, 98.7 tons CO, 10.2 tons of VOM, 11.0 tons of SO₂, and 9.4 tons of PM. Total annual emissions from the other units at the facility will be minimal.

IV. APPLICABLE EMISSION STANDARDS

All emission units in Illinois must comply with the Illinois Pollution Control Board's emission standards. The Board's emission standards represent the basic requirements for units in Illinois. The application shows that proposed facility in compliance with the applicable state emission standards (35 Ill. Adm. Code: Subtitle B).

The affected engines would be subject to the federal National Emission Standards of Hazardous Air pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE), 40 CFR 63 Subpart ZZZZ, which requires that the affected engines shall comply with the applicable requirements of New Source Performance Standards (NSPS) for Compression Ignition (CI) internal combustion engines, 40 CFR 60 Subpart IIII.

The affected engines not being subject to the applicable requirements of the federal emission standards NSPS, 40 CFR 60 Subpart IIII, because the engines were manufactured prior to March 31, 2006, pursuant to 40 CFR 60.4200(a)(2)(i).

V. APPLICABLE REGULATORY PROGRAMS

This facility is not considered a major project under the federal rules for Prevention of Significant Deterioration of Air Quality (PSD), 40 CFR 52.21 and Major Stationary Source Construction and Modification (MSSCAM), 35 IAC Part 203. This is because the total emissions of each NSR pollutant from the proposed facility, as limited by the permit, would be less than the applicability threshold of MSSCAM or PSD rules.

The INGENCO facility and existing CDT Landfill facility, which supplies landfill gas to the affected engines, are not considered a single source for purposes of permitting pursuant to 40 CFR 52.21(b)(6), 35 IAC 203.112, 203.136, and 211.6130, and Section 39.5(1) of the Illinois Environmental Protection Act. This is because the emission units at the INGENCO facility are not dependent upon LFG from the CDT Landfill to operate and both facilities are operated by separate companies and are not considered under "common Control." In addition CDT Landfill can operate independently of the INGENCO facility, as it has done for the preceding two years in order to comply with the applicable control requirements of the NSPS, 40 CFR 60 Subpart WWW for Municipal Solid Waste (MSW) Landfills.

INGENCO must obtain either a Clean Air Act Permit Program (CAAPP) permit or Federally Enforceable State Operating Permit (FESOP) permit for this gas-to-energy facility.

VI. DRAFT PERMIT

The conditions of the draft permit for the proposed gas-to-energy facility contain limitations and requirements for the affected engines. The draft permit also identifies measures that must be used as good air pollution control practices to minimize emissions from the affected engines.

The draft permit includes enforceable limits on emissions and operation of the facility to assure that it remains below the levels at which it would be considered major for CAAPP permit. In addition to limiting annual emissions, the permit also includes limits on hourly emissions from the affected engines.

The permit also establishes appropriate compliance procedures for the emission units, including requirements for emission testing, monitoring, recordkeeping, and reporting. Emission testing is required as part of the initial shakedown and operation of the affected engines after completion of construction.

These measures are being imposed to assure that the emissions of the facility accurately tracked to confirm compliance with both the short-term and annual emission limits established for them.

VII. REQUEST FOR COMMENTS

It is the Illinois EPA's preliminary determination that the proposed project meets all applicable state and federal air pollution control requirements. The Illinois EPA is therefore proposing to issue a permit for this project. Comments are requested on this proposed action by the Illinois EPA and the conditions of the draft permit.