Illinois Environmental Protection Agency
Bureau of Air, Permit Section
Springfield, Illinois

Project Summary
For a Construction Permit Application from
Automotive Robotics Proving Lab
For Its New Testing Cell Installation
In East Peoria, Illinois

Site Identification No.: 179020ADF
Application No.: 11090046
Date Received: September 28, 2011

Schedule
Public Comment Period Begins: December 16, 2011
Public Comment Period Closes: January 15, 2012

Illinois EPA Contacts
Permit Analyst: Minesh Patel
Community Relations Coordinator: Brad Frost

I. Introduction

Automotive Robotics Proving Lab (ARPL) has applied for construction permit to install two new engine test cells at its plant in East Peoria. These test cells contain equipment to test the operation of both diesel-fired and natural gas-fired engines.

The Illinois EPA has reviewed ARPL's application for a construction permit and made preliminary determination that the application meets applicable requirements. Accordingly, the Illinois EPA has prepared a draft of the construction permit that it would propose to issue for the proposed project. However, before issuing the permit, the Illinois EPA is holding a public comment period to receive comments on the proposed issuance of the construction permit and the terms and conditions of the draft of the construction permit.

II. Project Description

ARPL is an independent testing facility engaged in testing of compression ignition and spark ignited engines used in off-highway vehicles for research and development.

The principal air contaminants emitted from the engine test cells would be nitrogen oxides (NO_x) and carbon monoxide (CO). NO_x can be formed thermally by combination of oxygen and nitrogen in the air at the temperatures at which fuel is burned. Thermal NO_x is formed during the operation of all common high temperature combustion processes including engine. 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 and PM/PM_{10} are also emitted as a result of incomplete combustion of fuel. SO_2 is also found from combustion of natural gas and diesel fuel and are directly related to the sulfur content of the fuel.

APRL currently operates six engine test cells at the plant and plans to add two new cells. The two new cell would contain equipment to test both engine using both diesel and natural gas fuels and would test units up to 3,000 horsepower (HP).

ARPL has requested plant-wide limitation for both diesel fuel and natural gas usage for the all test cells at the source, combined, i.e., the two new cells and six existing cells, 1,202,150 gallons and 90 million cubic feet, respectively. With the proposed limit, the plant-wide emissions would remain at a non-major source under the Prevention of Significant Deterioration (PSD) regulations (40 CFR Part 52.21).

III. Emissions

A summary of the proposed permitted emissions of the plant are provided below in Table 1. These limits are based on the maximum emissions rates and operation of all engine test cells at the plant, including the new cells, combined. Actual annual emissions of the facility would be less than these limits to the extent that the actual performance of the tested generator sets is better than projected and the test cells do not operate at 24 hours a day, seven days a week throughout the year.

Table 1: Summary of Plant-Wide Permitted Emissions (Tons/Year)

NO_x	CO	Individual HAP	Aggregate HAPs	GHG, As CO_2e
180.0	245.0	8.0	20.0	19,000

IV. Applicable Emission Standards

All emission sources in Illinois must comply with the Illinois Pollution Control Board's emission standards. The Board's emission standards represent the basic requirements for sources in Illinois. ARPL should readily comply with applicable emission standards of the State of Illinois (35 IAC Subtitle B, Subchapter c).

V. Non-Applicable Emission Standards

A. The engine test cells are not subject to the requirements of National Emission Standards for Hazardous Air Pollutants (NESHAP) for Engine Test Cells/Stands, 40 CFR 63 Subpart PPPPP. This is because the source is not a major source of HAP emissions.

B. The engine test cells are also not subject to the NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE), 40 CFR 63 Subpart ZZZZ, or the federal New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines (CI), 40 CFR 60 Subpart IIII or NSPS for Stationary Spark Ignition Combustion Engines (SI), 40 CFR 60 Subpart JJJJ. This is because the units tested at a test cell/stand are exempt from the requirements of RICE NESHAP and CI and SI NSPS for engines pursuant to 40 CFR 63.6585 and 40 CFR 60.4200(b) and 40 CFR 60.4230(b), respectively.

VI. Other Regulatory Programs

A. Prevention of Significant Deterioration (PSD)

The plant is not a major stationary source under the federal rules for Prevention of Significant Deterioration of Air Quality (PSD), 40 CFR 52.21. This is because the potential emissions of the source, including the emissions from the affected cells, are less than the major source levels.

Note: For this source, the major source threshold under PSD for each regulated NSR pollutant other than greenhouse gases (GHG) is 250 tons per year. For GHG, the major source threshold is 100,000 tons per year, as carbon dioxide equivalents (CO_2e).

B. Section 112(g) of the Clean Air Act

This plant is not a major source for HAPs, so that the plant is not subject to the requirements of Section 112(g) of the Clean Air Act. This is because HAP emissions from the plant with the proposed new test cells would be limited to less than 8 tons per year for individual HAP and less than 20 tons per year for aggregate HAPs.

VII. Draft Permit

The draft permit for the plant would set forth the air pollution control requirements that apply to the plant. These requirements include the applicable emission standards that apply to the plant. They also include the measures that must be used as good air pollution control practices to minimize emissions.

The permit would also establish enforceable limitations on the amount of fuel usage and emissions for which the plant is permitted. In addition to annual limitations on emissions, the permit includes short-term emission limitations and operational limitations, as needed to provide practical enforceability of the annual emission limitations.

The permit also establishes appropriate compliance procedures for the plant, including requirements for emission testing, required work practices, operational monitoring, recordkeeping, and reporting. These measures are imposed to assure that the operation and emissions of the plant are appropriately tracked to confirm compliance with both the short-term and annual emission limits established for emission units.

VIII. Request for Comments

It is the Illinois EPA’s preliminary determination that the application for a new engine test cells meets all applicable state and federal air pollution control requirements. The Illinois EPA is therefore proposing to issue a construction permit.

Comments are requested on this proposed action by the Illinois EPA and the proposed conditions of the draft permit.

MVP:11090046:psj