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BUREAU OF AIR, PERMIT SECTION
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PROJECT SUMMARY
FOR A CONSTRUCTION PERMIT APPLICATION
FROM
NATURAL GAS PIPELINE CO. OF AMERICA – STATION 201
FOR A NEW
NATURAL GAS FIRED ENGINE
HERSCHER, ILLINOIS

Site Identification No.: 091811AAB
Application No.: 07110051
Date Received: November 26, 2007

Schedule

Public Comment Period Begins: August 28, 2008
Public Comment Period Closes: September 27, 2008

Illinois EPA Contacts

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I. INTRODUCTION

Natural Gas Pipeline Company of America (NGPL) has submitted a construction permit application for a new natural gas fired engine at its pipeline compressor Station located in Herscher. This station is used to move natural gas through associated interstate transmission pipelines. The construction of the proposed new engine requires a permit from the Illinois EPA because of its emissions.

The Illinois EPA has reviewed NGPL'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 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 proposed project will entail construction of a large new natural gas fired engine equipped with an oxidation catalyst system. In conjunction with this project, the operating status of an existing engine generator (Engine 01-AUX) at the source would be changed from routine operation to emergency use only.

Emissions of carbon monoxide (CO), nitrogen oxide (NO_x), particulate matter (PM), sulfur dioxide (SO₂), and volatile organic material (VOM) would result from the combustion of natural gas in the engine.

The principal air contaminants emitted from the proposed engine would be NO_x, CO, 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 and VOM are formed by the incomplete combustion of fuel. CO is associated with most combustion processes and is found in measurable amounts in engine exhaust. The use of low-NO_x combustion technology, as needed for compliance with applicable rules, also leads to measurable emissions of VOM, as well as increased CO emissions.

PM is also emitted as a result of incomplete combustion of fuel. SO₂ is also found in trace amounts from combustion of natural gas.

For the new engine, NO_x emissions will be controlled by the use of low-emission combustion technology, CO and VOM emissions will be controlled by the oxidation catalyst system. Emissions are also controlled by firing of natural gas, which has minimal PM and SO₂ emissions.

III. PROJECT EMISSIONS

The potential annual emissions from the new engine will be approximately 55 tons of NO_x, 13 tons CO, 18 tons of VOM, 2 tons of PM, and less than 0.5 ton of SO₂.

NGPL has shown that the proposed project will not have a significant net increase in NO_x emissions, with a net increase of only approximately 6 tons of NO_x per year. This is due to the contemporaneous emissions decrease from restricting the future use of existing Engine 01-AUX to emergency purposes only. (See Attachment 1.) This permit does not need to rely on the decrease in emissions of PSD pollutants other than NO_x that will also occur from this change.

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. The proposed project will readily comply with applicable state emission standards (35 Ill. Adm. Code: Subtitle B).

The new engine is also subject to the applicable requirements of the federal New Source Performance Standards (NSPS) for Spark Ignition Combustion Engines, 40 CFR 60 Subpart JJJJ and National Emission Standards of Hazardous Air pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines, 40 CFR 63 Subpart ZZZZ. The Illinois EPA is administering NSPS and NESHAP in Illinois on behalf of the United States EPA under a delegation agreement. These standards requires either at least 93% control of CO emissions or formaldehyde concentration in the exhaust no more than 14 ppmv (parts per million by volume). The new engine should readily comply with these standards because of the oxidation catalyst system.

V. APPLICABLE REGULATORY PROGRAMS

This project is not considered a major modification under the federal rules for Prevention of Significant Deterioration of Air Quality (PSD), 40 CFR 52.21. This is because the potential increase or potential net increase in emissions of each PSD pollutant from the proposed project, as limited by the permit, would be less than the major source thresholds for PSD for all pollutants.

VI. DRAFT PERMIT

The conditions of the draft permit for this project contain limitations and requirements for the new engine. The draft permit also identifies measures that must be used as good air pollution control practices to minimize emissions from the new engine. The permit includes enforceable limits on emissions and operation of the project to assure that project remains below the levels at which it would be considered major for PSD. In addition to limiting annual emissions, the permit also includes limits on hourly emissions based on the maximum amount of fuel that can be used in the new engine.

The draft permit also includes provisions addressing actions that must be taken to reduce emissions so that the project would not be subject to the PSD rules fro emissions of NO_x, i.e., limiting the use of existing engine generator (Engine 01-AUX) to emergency purposes only when the new engine becomes operational.

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

These measures are being imposed to assure that the emissions of the new engine are 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 permit meets all applicable state and federal air pollution control requirements. The Illinois EPA is therefore proposing to issue this permit. Comments are requested on this proposed action by the Illinois EPA and the proposed conditions of the draft permit.

Attachment 1

Evaluation of Net Change in NO_x Emissions (Tons/year)

Table 1 - Future permitted NO_x emissions from the new engine (Engine 16) and existing engine generator (Engine 01-AUX):

Unit	Emissions (Tons/year)
Engine 16	55.4
Engine 01-AUX ¹	3.8
Total	59.2

¹ operation restricted to emergency use only

Table 2 - Past actual NO_x emissions from Engine 01-AUX:

Unit	Emissions (Tons/year)
Engine 01-AUX	53.1 ²

² Actual emissions are based on the 24-consecutive months within the 10-year period prior to commencing construction of Engine 16. The baseline actual emissions are the average annual actual emissions for year 2001-2002. (Refer to Section 3.2.2.4 on Page 3-4 of the application.)

Table 3 - Net Change in NO_x Emissions:

Time Period	Emissions (tons/year)
Future (Table 1)	59.2
Past (Table 2)	53.1
Change	6.1
PSD Significant Threshold	40