Title V Air Operation Permit Revision
Permit No. 0390029-013-AV

APPLICANT

The applicant for this project is Florida Gas Transmission Company (FGT). The applicant's responsible official and mailing address are: David W. Shellhouse, Vice President, Southeast Operations Florida Gas Transmission Company, 2405 Lucien Way, Suite 200, Maitland, Florida 32751-7047.

FACILITY DESCRIPTION

The applicant operates Gadsden Compressor Station No. 14, located at 3690 Hosford Highway in Quincy, Gadsden County, Florida.

Gadsden Compressor Station No. 14 is part of a natural gas transmission pipeline system and contains six natural gas fired internal combustion reciprocating engines and three natural gas-fired gas combustion turbine engines. The engines provide power for compressors to move the gas along the pipeline.

Emissions Units 001, 002, 003, 004, 005 and 006 (FGT Engines Nos.1401, 1402, 1403, 1404, 1405 and 1406) are reciprocating internal combustion (IC) engines. Emissions Units 001, 002, 003 and 005 engines are naturally aspirated and operate at near stoichiometric air-to-fuel ratio. NOx and carbon monoxide (CO) are emitted uncontrolled through raised stacks. The Emissions Unit 004 engine uses a turbocharger, providing more air at higher pressures, to reduce NOx emissions and offset other emission increases. This engine has a catalytic converter to reduce CO emissions. The Emissions Unit 006 engine incorporates "lean burn" technology to minimize NOx emissions and is subject to a Best Available Control Technology (BACT) determination of 2 g/BHP-hr NOx (equivalent of 10.6 lbs/hr and 46.3 TPY).

Emissions Units 008 and 010 (FGT Engine Nos. 1407 and 1408) are gas combustion turbines, incorporating an efficiently operated dry low-NOx combustion system technology to minimize NOx emissions.

Emissions Unit 011 (FGT Engine No. 1409) is a gas combustion turbine. The Emissions Unit 011 turbine uses efficient combustion of natural gas at high temperatures to lower emissions of carbon monoxide and volatile organic compounds. Lean premix combustion technology will minimize the formation of nitrogen oxides

Also included in this permit are miscellaneous unregulated/insignificant emissions units and/or activities.

PROJECT DESCRIPTION

This is a revision to Title V renewal permit 0390029-010-AV, effective June 24, 2008 to incorporate~~s~~ permit 0390029-011-AC, effective April 22, 2009, for a gas combustion turbine (FGT No. 1409), two 454 bhp emergency generators and one 500 gallon oily water tank, and a modification to permit 0390029-011-AC, by permit 0390084-012-AC. Permit 0012-AC allows increasing the new turbine's maximum allowable heat input rate from 158 to 165 MMBtu per hour to increase the power output from 19,465 to 20,500 bhp (ISO) and increases the new turbine's maximum allowable emissions of carbon monoxide, nitrogen oxides, particulate matter and PM10, sulfur dioxide, and volatile organic compounds to 39.4, 38.9, 4.77, 19.9, and 2.29 tons per year, respectively. Permit 0012-AC is in combined processing with this revision permit.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Application for a Title V Air Operation Permit Revision received June 2, 2011. Application was complete.

PRIMARY REGULATORY REQUIREMENTS

Title III: The facility is 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 not a Prevention of Significant Deterioration (PSD)-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

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

NESHAP: The facility operates 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.

CAM: Compliance Assurance Monitoring (CAM) does not apply to any of the units at the facility

PROJECT REVIEW

Emissions Units 001 through 003 and 005 (FGT Engines Nos.1401, 1402, 1403 and 1405) are reciprocating internal combustion (IC) engines, manufactured by Worthington, model SEHG-8. The engines are fired by pipeline natural gas (NG) and each is rated at 2,000 BHP with a maximum heat input rating of 15 MMBtu/hr. Engines 1401-1403 were originally placed in service in 1958, while engine 1405 was originally placed in service in 1968.

Emissions Unit 004 (FGT Engine No. 1404) is a reciprocating IC engine, manufactured by Worthington, model SEHG-8. This engine is fired by pipeline natural gas and is rated at 2,000 BHP with a maximum heat input rating of 16.5 MMBtu/hr. This engine was initially placed in service in 1966.

Emissions Unit 006 (FGT Engine No. 1406) is a reciprocating IC engine, manufactured by Cooper-Bessemer, model GMVR-12C. This engine is fired by pipeline natural gas and rated at 2,700 BHP with a maximum heat input rating of 21.69 MMBtu/hr. This engine was initially placed in service in 1991.

Emissions Unit 008 (FGT Engine No. 1407) is a gas combustion turbine manufactured by Solar, model Mars 90 T13002S. This turbine is fired by pipeline natural gas and rated at 13,000 BHP at ISO conditions with a maximum heat input of 112.8 MMBtu/hr at ISO conditions. Heat input rate will vary depending upon gas turbine characteristics, load, and ambient conditions. This turbine was initially placed in service in 2001.

Emissions Unit 010 (FGT Engine No. 1408) is a gas combustion turbine manufactured by Nuovo Pignone, model PGT-10B. This turbine is fired by pipeline natural gas and rated at 15,700 BHP at ISO conditions with a maximum heat input of 134.8 MMBtu/hr at ISO conditions. Heat input rate will vary depending upon gas turbine characteristics, load, and ambient conditions. This-turbine was initially placed in service in 2002.

Permit 0390029-011-AC, effective April 22, 2009 added Emissions Unit 011, compressor Engine (FGT Engine No.1409), a Solar Titan Model No. 130-20502S gas combustion turbine. The gas combustion turbine fires approximately 151,800 cubic feet per hour of pipeline natural gas (SCC No 2-02-002-54) at maximum permitted capacity. At 165 MMBtu per hour of heat input, the combustion turbine produces approximately 20,500 bhp. When operating at capacity, exhaust gases exit a 55 feet tall stack that is 7.5 feet x 8 feet in diameter with a flow rate of approximately 232,782 acfm at 944° F.

Internal combustion reciprocating engines (Nos. 1401 - 1406) and combustion turbines (Nos. 1407 and 1408) are subject to (MACT) 40 CFR 63 Subpart ZZZZ - NESHAP for Stationary Reciprocating Internal Combustion Engines and Subpart YYYY - NESHAP for Stationary Combustion Turbines, respectively. However, based on rules 40 CFR 63.6090(b)(4) and 63.6590(b)(3) the engines Nos. 1401-1408 do not have to meet the requirements of the Subparts or Subpart A. In addition, no initial notification is required. Be aware that any future

reconstruction (defined in 40 CFR 63.2) may result in engines 1401-1408 becoming subject to these rules. Combustion gas turbine (FGT Engine No.1409) is subject to 40 CFR 60 Subpart KKKK - NSPS for Stationary Combustion Turbines and 40 CFR 63 Subpart YYYY - NESHAP for Stationary Combustion Turbines.
The two 454 Hp engines for the new emergency generators are subject to the limits from table 1, and the certification, maintenance and recordkeeping requirements of 40 CFR 60 Subpart JJJJ - Stationary Spark Ignition Internal Combustion Engines. By meeting the applicable requirements of 40 CFR 60 Subpart JJJJ, the two 454 Hp engines for the new emergency generators also meet applicable requirements in 40 CFR 63, NESHAP Subparts A and ZZZZ - Reciprocating Internal Combustion Engines.

CONCLUSION

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. The NO_X emission increase is close enough to the significant emissions rate that Permittee is subject to monitoring, reporting and recordkeeping provisions of Rule 62-212.300(1)(e), F.A.C.

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