



# Florida Department of Environmental Protection

## Memorandum

TO: Michael G. Cooke, Division of Air Resource Management  
THRU: Trina Vielhauer, Bureau of Air Regulation   
FROM: Jeff Koerner, Air Permitting North   
DATE: May 23, 2005  
SUBJECT: Air Permit No. 0830070-005-AC  
Florida Gas Transmission Company – Compressor Station 17  
Revised CO/VOC Emissions

The Final Permit for this project is attached for your approval and signature. Florida Gas Transmission Company operates existing natural gas compressor Station 17, which is located approximately 17 miles northeast of Silver Springs on County Highway 314 in Marion County, Florida. The final permit modifies the original air construction permit to: change the CO emissions standard; change the expected equivalent maximum VOC emission rate; incorporate recent changes to NSPS Subpart GG regarding the monitoring of the nitrogen and sulfur contents of pipeline natural gas; and include a provision for like-kind component replacements. The requested revisions are minor in nature and do not trigger any new regulatory requirements. The permit will be issued as a revised air construction permit that supersedes the previous air construction permit.

The Department distributed an "Intent to Issue Permit" package on March 3, 2005. The applicant published the "Public Notice of Intent to Issue" in the Ocala Star-Banner on March 30, 2005. The Department received the proof of publication on May 11, 2005. No petitions for administrative hearings or extensions of time to petition for an administrative hearing were filed.

Day #90 is July 14, 2005. I recommend your approval of the attached Final Permit for this project.

Attachments

## FINAL DETERMINATION

### **PERMITTEE**

Mr. Rick Craig, V.P. of Southeastern Operations  
Florida Gas Transmission Company  
P.O. Box 4657  
Houston, TX 77210-4657

### **PERMITTING AUTHORITY**

Florida Department of Environmental Protection  
Division of Air Resource Management  
Bureau of Air Regulation, Air Permitting South Program  
2600 Blair Stone Road, MS #5505  
Tallahassee, Florida, 32399-2400

### **PROJECT**

Air Permit No. 0830070-005-AC  
Florida Gas Transmission Company – Compressor Station 17  
CO/VOC Permit Revision for Engine 1706

This permit modification: revises the CO emissions standard; revises the expected equivalent maximum VOC emission rate; incorporates recent changes to NSPS Subpart GG regarding the monitoring of the nitrogen and sulfur contents of pipeline natural gas; and includes a provision for like-kind component replacements.

### **NOTICE AND PUBLICATION**

The Department distributed an “Intent to Issue Permit” package on March 3, 2005. The applicant published the “Public Notice of Intent to Issue” in the Ocala Star-Banner on March 30, 2005. The Department received the proof of publication on May 11, 2005. No petitions for administrative hearings or extensions of time to petition for an administrative hearing were filed.

### **COMMENTS**

No comments on the Draft Permit were received from the public, the Department’s Central District Office, or the Orange County Environmental Protection Division. The applicant commented that testing between 50% and 60% of base load (Condition 8, Section 3) is no longer necessary because the CO emission standard was revised to cover all authorized load ranges (50% - 100%). The Department agrees that this was an error and made this correction.

### **CONCLUSION**

Only minor revisions were made to correct typographical errors. The final action of the Department is to issue the permit with the changes described above.

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF FINAL PERMIT

In the Matter of an  
Application for Permit by:

Florida Gas Transmission Company  
P.O. Box 4657  
Houston, TX 77210-4657

*Authorized Representative:*

Mr. Rick Craig, V.P. of Southeastern Operations

Air Permit No. 0830070-005-AC  
Facility ID No. 0830070  
Compressor Station 17  
CO/VOC Revision  
Marion County, Florida

Enclosed is Final Air Permit No. 0830070-005-AC, which revises the current CO and VOC emission standards for Engine 1706. This is an existing unit installed at Compressor Station 17, which is located approximately 17 miles northeast of Silver Springs on County Highway 314 in Marion County, Florida. As noted in the attached Final Determination, only minor changes and clarifications were made. This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within thirty (30) days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.



Trina Vielhauer, Chief  
Bureau of Air Regulation

CERTIFICATE OF SERVICE

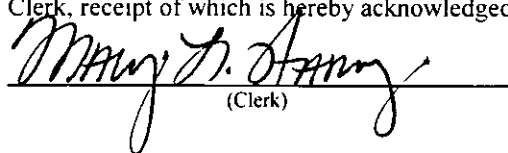
The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Final Permit (including the Final permit) was sent by certified mail (\*) and copies were mailed by U.S. Mail before the close of business on 5/27/05 to the persons listed:

Mr. Rick Craig, FGTC\*  
Mr. James Fleak, FGTC  
Mr. David Holmes Parham, FGTC

Mr. V. Duane Pierce, AQMcS  
Mr. Len Kozlov, CD

Clerk Stamp

**FILING AND ACKNOWLEDGMENT FILED**, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

  
(Clerk)

5/27/05  
(Date)



# Department of Environmental Protection

Jeb Bush  
Governor

Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Colleen M. Castille  
Secretary

## PERMITTEE:

Florida Gas Transmission Company  
1400 Smith Street  
Houston, TX 77002

### Authorized Representative:

Rick Craig, V.P. of Southeast Operations

Marion Compressor Station No. 17  
Air Permit No. 0830070-005-AC  
Facility ID No. 0830070  
SIC No. 4922  
Permit Expires: October 1, 2005

## PROJECT AND LOCATION

Original Permit No. 0830070-003-AC authorized the construction of a new 15,700 bhp gas turbine compressor engine (Engine 1706) and the modification of one existing reciprocating internal combustion compressor engine (Engine 1704). The equipment is installed at Compressor Station No. 17, which is located approximately 17 miles northeast of Silver Springs on County Highway 314 in Marion County, Florida. The UTM coordinates are Zone 17, 418.84 km East, and 3240.90 km North. This permit is a revision to: change the CO emissions standard; change the expected equivalent maximum VOC emission rate; incorporate recent changes to NSPS Subpart GG regarding the monitoring of the nitrogen and sulfur contents of pipeline natural gas; and include a provision for like-kind component replacements.

## STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.) and Title 40, Part 60 of the Code of Federal Regulations. The permittee is authorized to install the proposed equipment in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department. This permit revision supersedes previous Permit No. 0830070-003-AC, as modified.

## CONTENTS

- Section 1. General Information
- Section 2. Administrative Requirements
- Section 3. Emissions Units Specific Conditions
- Section 4. Appendices

Michael G. Cooke, Director  
Division of Air Resource Management

Effective Date

"More Protection, Less Process"

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## SECTION 1. GENERAL INFORMATION

### FACILITY AND PROJECT DESCRIPTION

The existing facility operates as a compressor station in Marion County for the Florida Gas Transmission Company's natural gas pipeline. The project will add a new 15,700 bhp gas turbine compressor engine (No. 1706) and modify one existing reciprocating internal combustion compressor engine (No. 1704). After the project is complete, the facility will consist of the following emissions units.

ID	Emission Unit Description
001	<b>FGT No. 1701:</b> One 2000 bhp natural gas-fired reciprocating internal combustion engine (Cooper-Bessemer Model No. LS-8-SG) was installed as a compressor engine in 1966.
002	<b>FGT No. 1702:</b> One 2000 bhp natural gas-fired reciprocating internal combustion engine (Cooper-Bessemer Model No. LS-8-SG) was installed as a compressor engine in 1966.
003	<b>FGT No. 1703:</b> One 2000 bhp natural gas-fired reciprocating internal combustion engine (Cooper-Bessemer Model No. LS-8-SG) was installed as a compressor engine in 1966.
004	<b>FGT No. 1704:</b> One 2000 bhp natural gas-fired reciprocating internal combustion engine (Cooper-Bessemer Model No. LS-8-SG) was installed as a compressor engine in 1966.
005	<b>FGT No. 1705:</b> One 2400 bhp natural gas-fired reciprocating internal combustion engine (Dresser-Rand Model No. 412KVSRA) was installed as a compressor engine in 1991 (subject to PSD).
008	<b>FGT No. 1706:</b> A new 15,700 bhp gas turbine (Nuovo Pignone Model No. PGT-10B) was installed as a compressor engine in 2001.
009	<b>Miscellaneous Unregulated Emissions Units</b>

{Note: Emissions units 006 and 007 are "inactive". These were the old full-time electrical generators, which have been retired.}

### REGULATORY CLASSIFICATION

Title III: The facility is a potential major source of hazardous air pollutants (HAP).

Title IV: The facility operates no units subject to the acid rain provisions of the Clean Air Act.

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

PSD: The facility is a PSD-major facility in accordance with Chapter 62-212, F.A.C.

NSPS: The gas turbine is subject to the New Source Performance Standards in 40 CFR 60, Subpart GG.

### RELEVANT DOCUMENTS

The permit application and additional information received to make it complete are not a part of this permit; however, the information is specifically related to this permitting action and is on file with the Department.

*{Permitting Note: This permit is being "re-issued" to: change the CO emissions standard; change the expected equivalent maximum VOC emission rate; incorporate recent changes to NSPS Subpart GG regarding the monitoring of the nitrogen and sulfur contents of pipeline natural gas; and include a provision for like-kind component replacements. The units covered are existing units and the initial requirements have already been met including initial compliance tests and reports.}*

## SECTION 2. ADMINISTRATIVE REQUIREMENTS

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1. Permitting Authority: All documents related to applications for permits to construct or modify emissions units that require a PSD netting analysis shall be submitted to the Bureau of Air Regulation of the Florida Department of Environmental Protection (DEP) at 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400. All documents related to applications for minor source construction permits or a Title V operation permit shall be submitted to the Department's Central District Office at 3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767 and phone number 407/894-7555.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Department's Central District Office at 3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767 and phone number 407/894-7555.
3. Appendices: The following Appendices are attached as part of this permit.
  - Appendix CF: Citation Format
  - Appendix GC: General Conditions [Rule 62-4.160, F.A.C.]
  - Appendix GG: NSPS Subpart GG Requirements for Gas Turbines
  - Appendix SC: Standard Conditions [applicable requirements from Chapters 62-4, 62-210, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.).]
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.); and Title 40, Part 60 of the Code of Federal Regulations (CFR), adopted by reference in Rule 62-204.800, F.A.C. The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
7. Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the Department's Bureau of Air Regulation, and copies to each Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### A. Engine 1704, Modified Reciprocating Compressor Engine (EU-004)

This section of the permit addresses the following modified emissions unit.

<p><b>Emissions Unit No. 004 (FGT No. 1704)</b> <b>Modified Reciprocating Compressor Engine</b></p> <p><i>Description:</i> The modified reciprocating internal combustion engine is a Cooper-Bessemer Model No. LS-8-SG installed in 1966 as a compressor engine for the natural gas pipeline.</p> <p><i>Fuel:</i> The engine fires only pipeline-quality natural gas (SCC No 2-02-002-54) at a maximum rate of approximately 15,900 cubic feet per hour based on a heat content of 1040 BTU per SCF of gas.</p> <p><i>Capacity:</i> At 16.5 mmBTU per hour of heat input, each engine produces approximately 2000 bhp. After initial startup, the engine is intended to operate at or near capacity.</p> <p><i>Controls:</i> The efficient combustion of pipeline-quality natural gas at high temperatures minimizes emissions of CO, PM/PM<sub>10</sub>, SO<sub>2</sub>, and VOC. Modifications to the engine turbocharger increase the air manifold pressure and airflow to each cylinder, which reduces NO<sub>x</sub> emissions.</p> <p><i>Stack Parameters:</i> When operating at capacity, exhaust gases exit a 28 feet tall stack that is 1.44 feet in diameter with a flow rate of approximately 11,600 acfm at 700° F.</p>
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*{Permitting Note: The existing natural gas compressor station is a major source with respect to the PSD preconstruction review program. The compressor engine was installed prior to implementation of the PSD program. However, specific modifications are being made in this project to obtain actual emissions decreases for use in a netting analysis that shows the total project to be minor with respect PSD. Therefore, the control techniques, fuel specifications, operational restrictions, emissions standards, monitoring provisions, and reporting requirements of this section are established in accordance with Rule 62-212.400, F.A.C.}*

#### EQUIPMENT

1. Engine Turbocharger Modifications: The permittee is authorized to physically modify the turbocharger of the reciprocating compressor engine in order to increase the air manifold pressure and airflow to each cylinder. The purpose of this modification is to increase the air-to-fuel mixture and decrease the cylinder temperatures, which will result in lower NO<sub>x</sub> emissions. Each control system shall be readjusted to include the new engine performance parameters and operating set points. The permittee shall tune, maintain, and operate the modified engine and control system to preserve the reduced NO<sub>x</sub> emissions. [Applicant Request]

#### PERFORMANCE RESTRICTIONS

2. Permitted Capacity: The maximum heat input rate to the modified reciprocating compressor engine shall not exceed 16.5 mmBTU per hour while producing approximately 2000 bhp based on a higher heating value (HHV) of 1040 BTU per SCF for natural gas. [Rule 62-210.200(PTE), F.A.C.]
3. Authorized Fuel: The modified reciprocating compressor engine shall fire only pipeline-quality natural gas. The current pipeline tariff specifies a maximum of 10 grains of sulfur per 100 standard cubic feet of natural gas. Therefore, no fuel sulfur monitoring is required. [Applicant Request; Rule 62-210.200(PTE), F.A.C.]
4. Restricted Operation: The hours of operation of the modified reciprocating compressor engine are not limited (8760 hours per year). [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### A. Engine 1704, Modified Reciprocating Compressor Engine (EU-004)

#### EMISSIONS STANDARDS

5. Emissions Standards: Emissions from the modified reciprocating compressor engine shall not exceed the following limits for carbon monoxide (CO), nitrogen oxides (NOx), opacity, particulate matter (PM), sulfur dioxide (SO<sub>2</sub>), and volatile organic compounds (VOC).

Pollutant	Standards	Equivalent Maximum Emissions <sup>f</sup>		Rule Basis <sup>g</sup>
		lb/hour	TPY	
CO <sup>a</sup>	2.0 gram/bhp-hour	8.8	38.54	Avoid Rule 62-212.400, F.A.C.
NOx <sup>b</sup>	8.0 gram/bhp-hour	35.3	154.61	Avoid Rule 62-212.400, F.A.C.
SO <sub>2</sub> <sup>c</sup>	10 grains of sulfur per 100 SCF of gas	0.5	2.19	Avoid Rule 62-212.400, F.A.C.
Opacity <sup>d</sup>	10% opacity, 6-minute average	Not Applicable		Avoid Rule 62-212.400, F.A.C.
PM <sup>e</sup>	Good combustion practices (Factor: 0.00999 lb/mmBTU)	0.2	0.88	Avoid Rule 62-212.400, F.A.C.
VOC <sup>e</sup>	Good combustion practices (Factor: 0.1 gram/bhp-hour)	0.4	1.75	Avoid Rule 62-212.400, F.A.C.

- a. The CO standards are based on 3-hour test averages as determined by EPA Method 10.
- b. The NOx standards are based on 3-hour test averages as determined EPA Method 7E.
- c. The fuel sulfur specification is based on the maximum limit specified by Federal Energy Regulatory Commission (FERC) and effectively limits the potential SO<sub>2</sub> emissions. Expected fuel sulfur levels are less than 1 grain per 100 SCF of natural gas from the pipeline. Compliance is by record keeping.
- d. The opacity standard is based on a 6-minute average, as determined by EPA Method 9.
- e. For both PM and VOC, the efficient combustion of clean fuels is indicated by compliance with opacity and CO standards. There are no pollutant-specific limits and no testing required.
- f. The equivalent maximum hourly emissions are based on permitted capacity, the corresponding emissions standard (CO, NOx, and SO<sub>2</sub>), an emission factor from EPA's AP-42 reference document (PM), and vendor test data (VOC). The equivalent maximum annual emissions are based on 8760 hours of operation per year and the specified restrictions.
- g. The conditions of this permit ensure that the project does not trigger the PSD preconstruction review requirements of Rule 62-212.400, F.A.C. The project includes emissions increases and decreases from emissions units 004, 008, and 009.

#### EMISSIONS PERFORMANCE TESTING

6. Initial Compliance Tests: The modified reciprocating compressor engine shall be tested to demonstrate initial compliance with the emissions standards for CO, NOx, and opacity. The initial tests shall be conducted within 60 days after achieving at least 90% of the maximum permitted capacity, but not later than 180 days after initial operation of the modified engine. CO and NOx performance tests shall be conducted concurrently at permitted capacity. SO<sub>2</sub> emissions shall be calculated based on fuel flow and vendor analysis of fuel sulfur content. [Rule 62-297.310(7)(a)1, F.A.C.]
7. Annual Compliance Tests: During each federal fiscal year (October 1<sup>st</sup> to September 30<sup>th</sup>), the modified reciprocating compressor engine shall be tested to demonstrate compliance with the emissions standards for



### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### A. Engine 1704, Modified Reciprocating Compressor Engine (EU-004)

CO, NO<sub>x</sub>, and opacity. CO and NO<sub>x</sub> performance tests shall be conducted concurrently at permitted capacity. SO<sub>2</sub> emissions shall be calculated based on fuel flow and vendor analysis of fuel sulfur content. [Rule and 62-297.310(7)(a)4, F.A.C. and to avoid Rule 62-212.400, F.A.C.]

8. **Test Notification:** The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. [Rule 62-297.310(7)(a)9, F.A.C.]
9. **Test Methods:** Required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources {Note: The method shall be based on a continuous sampling train.}
19	Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxides Emission Rates (Optional F-factor method may be used to determine flow rate and gas analysis to calculate mass emissions in lieu of Methods 1-4.)

Tests shall also be conducted in accordance with the requirements specified in Section 4, Appendix SC of this permit. The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used for compliance testing unless prior written approval is received from the Department. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]

#### RECORDS AND REPORTS

10. **Test Reports:** The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Section 4, Appendix SC of this permit. For each test run, the report shall also indicate the natural gas firing rate (cubic feet per hour), the heat input rate (mmBTU per hour), and the power output (bhp). [Rule 62-297.310(8), F.A.C.]
11. **Operational Data:** The permittee shall adequately monitor the fuel consumption rate and hours of operation for use in submittal of the required Annual Operating Report. At least once per calendar quarter, a trained engine analyst shall inspect each modified engine, estimate the exhaust CO and NO<sub>x</sub> concentration with a portable analyzer, and adjust engine performance as necessary. These inspections shall be recorded in a permanent log and made available for inspection upon request of the Department. [Rule 62-4.070(3), F.A.C.]

## SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

### B. Engine 1706, Pignone Gas Turbine Compressor Engine (EU-008)

This section of the permit addresses the following new emissions unit.

#### Emissions Unit No. 008 (FGT No. 1706): New Gas Turbine Compressor Engine

**Description:** The new 15,700 bhp gas turbine is a Pignone Model No. PGT-10B to be used as a compressor engine for the natural gas pipeline.

**Fuel:** The gas turbine fires only pipeline-quality natural gas (SCC No 2-02-002-01) at a maximum rate of approximately 129,600 cubic feet per hour based on a heat content of 1040 BTU per SCF of gas.

**Capacity:** At 134.8 mmBTU per hour of heat input, the gas turbine produces approximately 15,700 bhp. After initial startup, the gas turbine is intended to operate between 50% and 100% of base load.

**Controls:** The efficient combustion of pipeline-quality natural gas at high temperatures minimizes emissions of carbon monoxide (CO), particulate matter (PM/PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>), and volatile organic compounds (VOC). NO<sub>x</sub> emissions are reduced with dry low-NO<sub>x</sub> combustion technology.

**Stack Parameters:** When operating at capacity, exhaust gases exit a 7.6 feet diameter stack that is 61.5 feet tall with a flow rate of approximately 215,200 acfm at 910° F.

#### APPLICABLE STANDARDS AND REGULATIONS

*{Permitting Note: The existing natural gas compressor station is a major source with respect to the PSD preconstruction review program. The project includes adding a new gas turbine (FGT No. 1706) to increase the compressor station capacity. As such, it is part of the netting analysis that shows the project to be minor with respect to PSD. Therefore, the control systems and techniques, fuel specifications, operational restrictions, emissions standards, monitoring provisions, and reporting requirements of this section are established in accordance with Rule 62-212.400, F.A.C.}*

1. **NSPS Requirements:** The new gas turbine shall comply with the New Source Performance Standards (NSPS) of Subpart GG in 40 CFR 60. The applicable NSPS requirements are provided in Appendix GG of this permit. The Department determines that the conditions in this section are at least as stringent as, or more stringent than, the NSPS requirements of Subpart GG. [Rule 62-4.070(3), F.A.C.; 40 CFR 60, Subpart GG]

#### EQUIPMENT

2. **New Gas Turbine (FGT No. 1706):** The permittee is authorized to install, tune, operate, and maintain a new Pignone Model No. PGT-10B gas turbine to be used as a compressor engine for the natural gas pipeline. The gas turbine design shall incorporate dry low-NO<sub>x</sub> combustion technology to reduce emissions of nitrogen oxides below the permitted limits. Ancillary equipment includes an automated gas turbine control system, an inlet air filtration system, and a 7.6 feet diameter stack that is 61.5 feet tall. The permittee identifies the new gas turbine compressor engine as FGT No. 1706. [Applicant Request: Design]

#### PERFORMANCE RESTRICTIONS

3. **Permitted Capacity:** The maximum heat input rate to the gas turbine shall not exceed 134.8 mmBTU per hour while producing approximately 15,700 bhp based on a compressor inlet air temperature of 59° F, 100% load, and a higher heating value (HHV) of 1040 BTU per SCF for natural gas. Heat input rates will vary depending upon gas turbine characteristics, load, and ambient conditions. The permittee shall provide manufacturer's performance curves (or equations) that correct for site conditions to the Permitting and Compliance Authorities within 45 days of completing the initial compliance testing. Performance data shall be adjusted for the appropriate site conditions in accordance with the performance curves and/or equations on file with the Department. [Rule 62-210.200(PTE), F.A.C.]

**SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS**

**B. Engine 1706, Pignone Gas Turbine Compressor Engine (EU-008)**

4. **Authorized Fuel:** The gas turbine shall fire only pipeline-quality natural gas with a maximum of 10 grains of sulfur per 100 standard cubic feet of natural gas. [Applicant Request; Rule 62-210.200(PTE), F.A.C.]
5. **Restricted Operation:** The total hours of operation for the gas turbine are not limited (8760 hours per year). Except for startup and shutdown, operation below 50% of base load is prohibited. [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

**EMISSIONS STANDARDS**

6. **Emissions Standards:** Emissions from the gas turbine shall not exceed the following limits for carbon monoxide (CO), nitrogen oxides (NOx), opacity, particulate matter (PM), sulfur dioxide (SO<sub>2</sub>), and volatile organic compounds (VOC).

Pollutant	Standards		Equivalent Maximum Emissions <sup>f</sup>		Rule Basis <sup>g</sup>
	Load	Standards	lb/hour	TPY	
CO <sup>a</sup>	50-100%	21.0 ppmvd @ 15% O <sub>2</sub>	7.03	30.79	Avoid Rule 62-212.400, F.A.C.
NOx <sup>b</sup>	50-100%	25.0 ppmvd @ 15% O <sub>2</sub>	14.1	61.76	Avoid Rule 62-212.400, F.A.C. 40 CFR 60.332
SO <sub>2</sub> <sup>c</sup>	50-100%	10.0 grains of sulfur per 100 SCF of natural gas	3.7	16.21	Avoid Rule 62-212.400, F.A.C. 40 CFR 60.332
Opacity <sup>d</sup>	50-100%	10% opacity, 6-minute average	Not Applicable		Avoid Rule 62-212.400, F.A.C.
PM <sup>e</sup>	50-100%	Good combustion practices	0.9	3.94	Avoid Rule 62-212.400, F.A.C.
VOC <sup>e</sup>	50-100%	Good combustion practices	1.5	6.57	Avoid Rule 62-212.400, F.A.C.

- a. The CO standards are based on 3-hour test averages as determined by EPA Method 10.
- b. The NOx standards are based 3-hour test averages as determined EPA Method 20.
- c. The fuel sulfur specification is based on the maximum limit specified by Federal Energy Regulatory Commission (FERC) and effectively limits the potential SO<sub>2</sub> emissions. Expected fuel sulfur levels are less than 1 grain per 100 SCF of natural gas from the pipeline.
- d. The opacity standard is based on a 6-minute average, as determined by EPA Method 9.
- e. For both PM and VOC, the efficient combustion of clean fuels is indicated by compliance with opacity and CO standards. There are no pollutant-specific limits and no testing required.
- f. The equivalent maximum hourly emissions are based on permitted capacity, a compressor inlet air temperature of 59° F, the corresponding emissions standard (CO, NOx, and SO<sub>2</sub>), an emission factor from EPA's AP-42 reference document (PM), and vendor test data (VOC). The equivalent maximum annual emissions are based on 8760 hours of operation per year and the specified restrictions. Each test report shall include measured mass emission rates for CO, NOx and SO<sub>2</sub>. Mass emission rates for SO<sub>2</sub> shall be calculated based on actual fuel sulfur content and fuel flow rate. For comparison purposes, the permittee shall provide a reference table with the initial compliance test report of CO and NOx mass emission rates versus the compressor inlet temperatures. For tests conducted at 59° F or greater, measured CO and NOx mass emission rates shall be compared to the equivalent maximum emissions above. For tests conducted below 59° F, measured mass emission rates shall be compared

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### B. Engine 1706, Pignone Gas Turbine Compressor Engine (EU-008)

to the tabled mass emission rates provided by the manufacturer based on compressor inlet temperatures.

- g. The conditions of this permit ensure that the project does not trigger the PSD preconstruction review requirements of Rule 62-212.400, F.A.C. The project includes emissions increases and decreases from emissions units 004, 008, and 009.

#### EMISSIONS PERFORMANCE TESTING

7. **Initial Compliance Tests:** The gas turbine shall be tested to demonstrate initial compliance with the emission standards for CO, NO<sub>x</sub>, and opacity. The initial tests shall be conducted within 60 days after achieving at least 90% of the maximum permitted capacity, but not later than 180 days after initial operation of the gas turbine. The initial CO and NO<sub>x</sub> performance tests shall be conducted at approximately four evenly spaced points between the minimum normal operating load and 100% of peak load. Each of the three low-load CO and NO<sub>x</sub> performance tests shall consist of three, 20-minute test runs. The peak load CO and NO<sub>x</sub> performance test shall consist of three, 1-hour test runs. The CO performance tests shall be conducted concurrently with the NO<sub>x</sub> performance tests. SO<sub>2</sub> emissions shall be calculated based on fuel flow and vendor analysis of fuel sulfur content. [Rule 62-297.310(7)(a)1, F.A.C.; 40 CFR 60.8 and 60.335]
8. **Annual Compliance Tests:** During each federal fiscal year (October 1<sup>st</sup> to September 30<sup>th</sup>), the gas turbine shall be tested to demonstrate compliance with the emission standards for CO, NO<sub>x</sub>, and opacity. CO and NO<sub>x</sub> emissions shall be tested concurrently at permitted capacity. SO<sub>2</sub> emissions shall be calculated based on fuel flow and vendor analysis of fuel sulfur content. [Rule and 62-297.310(7)(a)4, F.A.C. and to avoid Rule 62-212.400, F.A.C.]
9. **Test Methods:** Required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources {Note: The method shall be based on a continuous sampling train.}
19	Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxides Emission Rates (Optional F-factor method may be used to determine flow rate and gas analysis to calculate mass emissions in lieu of Methods 1-4.)
20	Determination of Nitrogen Oxides, Sulfur Dioxide and Diluent Emissions from Gas Turbines

Tests shall also be conducted in accordance with the requirements specified in Section 4, Appendix SC of this permit. The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used for compliance testing unless prior written approval is received from the Department. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]

10. **Test Notification:** The permittee shall notify the Compliance Authority in writing at least 30 days prior to any initial NSPS performance tests and at least 15 days prior to any other required tests. [Rule 62-297.310(7)(a)9, F.A.C.; 40 CFR 60.7 and 60.8]

## SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

### B. Engine 1706, Pignone Gas Turbine Compressor Engine (EU-008)

#### RECORDS AND REPORTS

11. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Section 4, Appendix SC of this permit. In addition, NO<sub>x</sub> emissions shall be corrected to ISO ambient atmospheric conditions and compared to the NSPS Subpart GG standard identified in Appendix GG of this permit for each required test. For each run, the test report shall also indicate the natural gas firing rate (cubic feet per hour), heat input rate (mmBTU per hour), the power output (bhp), percent base load, and the compressor inlet air temperature. [Rule 62-297.310(8), F.A.C.; 40 CFR 60.332]
12. Fuel Monitoring: The permittee shall not claim the allowance for fuel-bound nitrogen in establishing the NSPS NO<sub>x</sub> standard. Only pipeline quality natural gas shall be fired. The current pipeline tariff specifies the maximum sulfur content as 10 grains of sulfur per 100 cubic feet of natural gas. Therefore, no fuel nitrogen or fuel sulfur monitoring is required. The fuel monitoring provisions were revised pursuant to the final July 2004 amendments to Subpart GG. See Appendix GG.} [Rule 62-4.070(3); 40 CFR 60.334]
13. Operational Data: Using the automated gas turbine control system, the permittee shall monitor and record heat input (mmBTU), power output (bhp), and hours of gas turbine operation. Within at least 5 business days of an agency request, the permittee shall summarize the following information: average heat input (mmBTU per hour); average power output (bhp); and total hours of gas turbine operation. The average heat input for the month shall be based on the contracted heat content (mmBTU per SCF) of the natural gas for the given month. This information shall also be used for submittal of the required Annual Operating Report. [Rule 62-4.070(3), F.A.C.]
14. Component Replacements: For the replacement of gas turbine components to facilitate prompt repair and return the unit to its original specifications, the permittee shall comply with the following notification and testing requirements.
  - a. Components shall only be replaced with functionally equivalent "like-kind" equipment. Replacement components may consist of improved or newer equipment, but such components shall not change operation or increase the capacity (heat input and power output rates) of the gas turbine. Replacement components that affect emissions shall be designed to achieve the emissions standards specified in all valid air permits and shall achieve these standards or better. After a component replacement, the gas turbine compressor engine remains subject to the standards of all valid air permits. [Rule 62-210.200(169), F.A.C.]
  - b. The permittee shall notify the Compliance Authority within seven days after beginning any replacement of the gas generator component of the compressor engine. Within seven days of first fire on a replacement gas generator, the permittee shall submit the following information to the Compliance Authority: date of first fire and certification from the vendor that the replacement gas generator is a functionally equivalent "like-kind" component. The vendor certification shall also identify the make, model number, maximum heat input rate (MMBtu/hour), power output (bhp) at ISO conditions, and that the permitted emission rates are achievable with the replacement component. This notification may be made by letter, fax, or email. A copy of the information shall be kept on site at the compressor station. Within 60 days of restarting the unit after a gas generator replacement, the permittee shall conduct stack tests to demonstrate compliance with the applicable emission standards. The permittee shall notify the Compliance Authority in writing at least 15 days prior to conducting these tests. The permittee shall comply with all permit requirements for test notification, test methods, test procedures, and reporting. [Rules 62-4.130, 62-4.160(2), (6), and (15) and 62-297.310(7)(b), F.A.C.]
  - c. After investigation and for good cause, the Department may require special compliance tests pursuant to Rule 62-297.310(7)(b), F.A.C.

**SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS**

**C. Miscellaneous Unregulated Emissions Units (EU-009)**

This permit recognizes the following unregulated emissions units.

<b>Emissions Unit No. 009: Miscellaneous Unregulated Emissions Units</b>	
004	Support equipment includes: <ul style="list-style-type: none"><li>• One 585 bhp Waukesha Model No. H24GL lean burn emergency generator fired exclusively with natural gas and identified by the permittee as "GEN03";</li><li>• Compressor building and control building;</li><li>• Lube oil and used oil storage tanks;</li><li>• Miscellaneous fugitive emission leaks from valves, flanges, etc.</li></ul>

The emergency generator is exempt from air construction permitting requirements in accordance with the following rule.

**Rule 62-210.300, F.A.C. Permits Required.**

(3) Exemptions.

(c) Categorical Exemptions

20. One or more emergency generators located within a single facility provided:

- a. None of the emergency generators is subject to the Federal Acid Rain Program; and
- b. Total fuel consumption by all such emergency generators within the facility is limited to 32,000 gallons per year of diesel fuel, 4,000 gallons per year of gasoline, 4.4 million standard cubic feet per year of natural gas or propane, or an equivalent prorated amount if multiple fuels are used.

**SECTION 4. APPENDICES**  
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- Appendix CF. Citation Format
- Appendix GC. General Conditions
- Appendix GG. NSPS Subpart GG Requirements for Gas Turbines
- Appendix SC. Standard Conditions

**SECTION 4. APPENDIX CF**  
**CITATION FORMAT**

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*The following examples illustrate the format used in the permit to identify applicable permitting actions and regulations.*

**REFERENCES TO PREVIOUS PERMITTING ACTIONS**

Old Permit Numbers

*Example:* Permit No. AC50-123456 or Air Permit No. AO50-123456

*Where:* “AC” identifies the permit as an Air Construction Permit  
“AO” identifies the permit as an Air Operation Permit  
“123456” identifies the specific permit project number

New Permit Numbers

*Example:* Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

*Where:* “099” represents the specific county ID number in which the project is located  
“2222” represents the specific facility ID number  
“001” identifies the specific permit project  
“AC” identifies the permit as an air construction permit  
“AF” identifies the permit as a minor federally enforceable state operation permit  
“AO” identifies the permit as a minor source air operation permit  
“AV” identifies the permit as a Title V Major Source Air Operation Permit

PSD Permit Numbers

*Example:* Permit No. PSD-FL-317

*Where:* “PSD” means issued pursuant to the Prevention of Significant Deterioration of Air Quality  
“FL” means that the permit was issued by the State of Florida  
“317” identifies the specific permit project

**RULE CITATION FORMATS**

Florida Administrative Code (F.A.C.)

*Example:* [Rule 62-213.205, F.A.C.]

*Means:* Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

*Example:* [40 CFR 60.7]

*Means:* Title 40, Part 60, Section 7



**SECTION 4. APPENDIX GC**  
**GENERAL CONDITIONS**

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
  - a. Have access to and copy and records that must be kept under the conditions of the permit;
  - b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
  - c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
  - a. A description of and cause of non-compliance; and
  - b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida

**SECTION 4. APPENDIX GC**  
**GENERAL CONDITIONS**

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Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
13. This permit also constitutes:
  - a. Determination of Best Available Control Technology (NA);
  - b. Determination of Prevention of Significant Deterioration (NA); and
  - c. Compliance with New Source Performance Standards (X).
14. The permittee shall comply with the following:
  - a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
  - b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
  - c. Records of monitoring information shall include:
    - 1) The date, exact place, and time of sampling or measurements;
    - 2) The person responsible for performing the sampling or measurements;
    - 3) The dates analyses were performed;
    - 4) The person responsible for performing the analyses;
    - 5) The analytical techniques or methods used; and
    - 6) The results of such analyses.
15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

**SECTION 4. APPENDIX GG**  
**NSPS SUBPART GG REQUIREMENTS FOR GAS TURBINES**

The following emissions unit is subject to the applicable requirements of Subpart A (General Provisions) and Subpart GG (Stationary Gas Turbines) established as New Source Performance Standards in 40 CFR 60 and adopted by reference in Rule 62-204.800(7)(b), F.A.C.

**Emissions Unit 003: FGT Unit No. 1706, Gas Turbine Compressor**

**FGT No. 1706:** A 15,700 bhp gas turbine (Nuovo Pignone Model No. PGT-10B) to be installed as a compressor engine.

**NSPS GENERAL PROVISIONS**

The emissions units are subject to the applicable General Provisions of the New Source Performance Standards including 40 CFR 60.7 (Notification and Record Keeping), 40 CFR 60.8 (Performance Tests), 40 CFR 60.11 (Compliance with Standards and Maintenance Requirements), 40 CFR 60.12 (Circumvention), 40 CFR 60.13 (Monitoring Requirements), and 40 CFR 60.19 (General Notification and Reporting Requirements). The General Provisions are not included in this permit, but can be obtained from the Department upon request.

**40 CFR 60, SUBPART GG**

**STANDARDS OF PERFORMANCE FOR STATIONARY GAS TURBINES**

*{Note: Each gas turbine shall comply with all applicable requirements of 40 CFR 60, Subpart GG adopted by reference in Rule 62-204.800(7)(b), F.A.C. Inapplicable provisions have been deleted in the following conditions, but the numbering of the original rules has been preserved for ease of reference. The term "Administrator" when used in 40 CFR 60 shall mean the Department's Secretary or the Secretary's designee. Department notes and requirements related to the Subpart GG requirements are shown in bold immediately following the section to which they refer. The rule basis for the Department requirements specified below is Rule 62-4.070(3), F.A.C.}*

Section 60.330 Applicability and designation of affected facility.

- (a) The provisions of this subpart are applicable to the following affected facilities: All stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules per hour (10 million Btu/hour), based on the lower heating value of the fuel fired.

Section 60.331 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

- (g) ISO standard day conditions means 288 degrees Kelvin, 60 percent relative humidity and 101.3 kilopascals pressure.  
(i) Peak load means 100 percent of the manufacturer's design capacity of the gas turbine at ISO standard day conditions.  
(j) Base load means the load level at which a gas turbine is normally operated.

Section 60.332 Standard for nitrogen oxides.

- (a) On and after the date of the performance test required by Section 60.8 is completed, every owner or operator subject to the provisions of this subpart as specified in paragraphs (c) of this section shall comply with:  
(2) No owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any stationary gas turbine, any gases which contain nitrogen oxides in excess of:

$$\text{STD} = 0.0150 \frac{(14.4)}{Y} + F$$

where:

STD = allowable NO<sub>x</sub> emissions (percent by volume at 15 percent oxygen and on a dry basis).

Y = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt-hour.

**SECTION 4. APPENDIX GG**

**NSPS SUBPART GG REQUIREMENTS FOR GAS TURBINES**

F = NOx emission allowance for fuel-bound nitrogen as defined in paragraph (a)(3) of this section.

(3) F shall be defined according to the nitrogen content of the fuel as follows:

Fuel-bound nitrogen (percent by weight)	F (NOx percent by volume)
$N \leq 0.015$	0
$0.015 < N \leq 0.1$	$0.04(N)$
$0.1 < N \leq 0.25$	$0.004 + 0.0067(N - 0.1)$
$N > 0.25$	0.005

where: N=the nitrogen content of the fuel (percent by weight).

*Department Requirement: When firing natural gas, the "F" value shall be assumed to be 0.*

*{Note: The "Y" value provided by the manufacturer is approximately 11.0 for natural gas. The equivalent emission standard is 196 ppmvd at 15% oxygen. The emissions standards in Section III of this permit are more stringent than this requirement.}*

(c) Stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules per hour (10 million Btu/hour) but less than or equal to 107.2 gigajoules per hour (100 million Btu/hour) based on the lower heating value of the fuel fired, shall comply with the provisions of paragraph (a)(2) of this section.

Section 60.333 Standard for sulfur dioxide.

On and after the date on which the performance test required to be conducted by Section 60.8 is completed, every owner or operator subject to the provision of this subpart shall comply with:

(b) No owner or operator subject to the provisions of this subpart shall burn in any stationary gas turbine any fuel which contains sulfur in excess of 0.8 percent by weight.

*{Permitting Note: The gas turbines will exclusively fire natural gas, which contains less than 0.03% sulfur by weight assuming a density of 0.0455 lb/scf of natural gas.}*

Section 60.334 Monitoring of operations.

(b) The owner or operator of any stationary gas turbine subject to the provisions of this subpart shall monitor sulfur content and nitrogen content of the fuel being fired in the turbine. The frequency of determination of these values shall be as follows:

(2) If the turbine is supplied its fuel without intermediate bulk storage the values shall be determined and recorded daily. Owners, operators or fuel vendors may develop custom schedules for determination of the values based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom schedules shall be substantiated with data and must be approved by the Administrator before they can be used to comply with paragraph (b) of this section.

*{Permitting Note: See 60.334(h) below.}*

(c) For the purpose of reports required under Section 60.7(c), periods of excess emissions that shall be reported are defined as follows:

(1) Nitrogen oxides. Any one-hour period during which the average water-to-fuel ratio, as measured by the continuous monitoring system, falls below the water-to-fuel ratio determined to demonstrate compliance with Section 60.332 by the performance test required in Section 60.8 or any period during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during the performance test required in Section 60.8. Each report shall include the average water-to-fuel ratio, average fuel consumption, ambient conditions, gas turbine load, and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures developed under Section 60.335(a).

*{Permitting Note: Excess NOx emissions reporting requirements do not apply. The gas turbine uses "dry" lean premix combustors and not wet injection to control NOx emissions. As indicated above, the Subpart GG NOx standard is 196 ppmvd @ 15% oxygen. This is nearly eight times the NOx standard specified in the permit and*

## SECTION 4. APPENDIX GG

### NSPS SUBPART GG REQUIREMENTS FOR GAS TURBINES

would be virtually impossible for this lean premix combustion turbine to exceed. As stated in the preamble to the July 2004 amendments, the rule changes do not impose any additional monitoring requirements for existing units.}

- (2) Sulfur dioxide. Any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent.

*Department Requirement:* In accordance with the custom fuel monitoring schedule, any period between two consecutive fuel sulfur analyses shall be reported as excess emissions if the results of the second analysis indicates failure to comply with the fuel sulfur limit of the permit.

- (h) The owner or operator of any stationary gas turbine subject to the provisions of this subpart:

- (2) Shall monitor the nitrogen content of the fuel combusted in the turbine, if the owner or operator claims an allowance for fuel bound nitrogen (i.e., if an F-value greater than zero is being or will be used by the owner or operator to calculate STD in §60.332).

*{Permitting Note: Because the nitrogen content of pipeline natural is negligible, the permittee does not claim an allowance for fuel bound nitrogen and will use "0" for the F-value when calculating the NOx standard in §60.332. The permit prohibits the permittee from claiming the allowance for fuel nitrogen. Therefore, no fuel nitrogen monitoring is required. The fuel monitoring provisions were revised pursuant to the final July 2004 amendments to Subpart GG.}*

- (3) May elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in §60.331(v), regardless of whether an existing custom schedule approved by the administrator for subpart GG requires such monitoring.

§60.331(v) states, "Natural gas means a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions. Natural gas contains 20.0 grains or less of total sulfur per 100 standard cubic feet. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1100 Btu per standard cubic foot. Natural gas does not include the following gaseous fuels: Landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value."

The permittee elects not to monitor the sulfur content of natural gas based on §60.334(h)(3)(i), which states that, "The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less." The current tariff sheet specifies that natural gas delivered by the pipeline system shall contain not more than 10 grains of total sulfur per 100 cubic feet of gas. Therefore, the pipeline natural gas meets the above definition.

*{Permitting Note: The permit requires the gas turbine to fire only pipeline natural gas with a maximum sulfur content of 10 grains of sulfur per 100 cubic feet of gas. Therefore, no fuel sulfur monitoring is required and no periodic reports of excess SO<sub>2</sub> emissions are required. The fuel monitoring provisions were revised pursuant to the final July 2004 amendments to Subpart GG.}*

#### Section 60.335 Test methods and procedures.

- (a) To compute the nitrogen oxides emissions, the owner or operator shall use analytical methods and procedures that are accurate to within 5 percent and are approved by the Administrator to determine the nitrogen content of the fuel being fired.
- (b) In conducting the performance tests required in Section 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided for in Section 60.8(b). Acceptable alternative methods and procedures are given in paragraph (f) of this section.
- (c) The owner or operator shall determine compliance with the nitrogen oxides and sulfur dioxide standards in Sections 60.332 and 60.333(a) as follows:

SECTION 4. APPENDIX GG

NSPS SUBPART GG REQUIREMENTS FOR GAS TURBINES

- (1) The nitrogen oxides emission rate (NO<sub>x</sub>) shall be computed for each run using the following equation:

$$\text{NO}_x = (\text{NO}_{x0}) (\text{Pr}/\text{Po})^{0.5} e^{19(\text{Ho} - 0.00633)} (288^\circ\text{K}/\text{Ta})^{1.53}$$

where:

- NO<sub>x</sub> = emission rate of NO<sub>x</sub> at 15 percent O<sub>2</sub> and ISO standard ambient conditions, volume percent.  
NO<sub>x0</sub> = observed NO<sub>x</sub> concentration, ppm by volume.  
Pr = reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure, mm Hg.  
Po = observed combustor inlet absolute pressure at test, mm Hg.  
Ho = observed humidity of ambient air, g H<sub>2</sub>O/g air.  
e = transcendental constant, 2.718.  
Ta = ambient temperature, °K.

*Department Requirement:* The permittee is required to correct NO<sub>x</sub> emissions to ISO ambient atmospheric conditions for each required emissions performance test and compare to the NO<sub>x</sub> standard specified in 40 CFR 60.332.

- (2) The monitoring device of Section 60.334(a) shall be used to determine the fuel consumption and the water-to-fuel ratio necessary to comply with Section 60.332 at 30, 50, 75, and 100 percent of peak load or at four points in the normal operating range of the gas turbine, including the minimum point in the range and peak load. All loads shall be corrected to ISO conditions using the appropriate equations supplied by the manufacturer.

*Department Requirement:* The initial NO<sub>x</sub> performance tests shall be conducted at approximately four evenly spaced points between the minimum normal operating load and 100% of peak load.

*{Note: The dry low-NO<sub>x</sub> controls are only effective above a minimum load, which will be identified during initial testing.}*

- (3) Method 20 shall be used to determine the nitrogen oxides, sulfur dioxide, and oxygen concentrations. The span values shall be 300 ppm of nitrogen oxide and 21 percent oxygen. The NO<sub>x</sub> emissions shall be determined at each of the load conditions specified in paragraph (c)(2) of this section.

*Department requirement:* The span value shall be no greater than 75 ppm of nitrogen oxides due to the low NO<sub>x</sub> emission levels of the gas turbine.

- (d) The owner or operator shall determine compliance with the sulfur content standard in Section 60.333(b) as follows: ASTM D 2880-71 shall be used to determine the sulfur content of liquid fuels and ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81 shall be used for the sulfur content of gaseous fuels (incorporated by reference--see Section 60.17). The applicable ranges of some ASTM methods mentioned above are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the approval of the Administrator.

- (e) To meet the requirements of Section 60.334(b), the owner or operator shall use the methods specified in paragraphs (a) and (d) of this section to determine the nitrogen and sulfur contents of the fuel being burned. The analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency.

*{Permitting Note: The permit prohibits the permittee from claiming the allowance for fuel nitrogen. The permit also requires the gas turbine to fire only pipeline natural gas with a maximum sulfur content of 10 grains of sulfur per 100 cubic feet of gas. Therefore, no fuel nitrogen or fuel sulfur monitoring is required. The fuel monitoring provisions were revised pursuant to the final July 2004 amendments to Subpart GG.}*

**SECTION 4. APPENDIX SC**  
**STANDARD CONDITIONS**

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*{Permitting Note: The following conditions apply to all emissions units and activities at this facility.}*

**EMISSIONS AND CONTROLS**

1. **Plant Operation - Problems:** If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]
2. **Circumvention:** The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
3. **Excess Emissions Allowed:** Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]
4. **Excess Emissions Prohibited:** Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]
5. **Excess Emissions - Notification:** In case of excess emissions resulting from malfunctions, the permittee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]
6. **VOC or OS Emissions:** No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]
7. **Objectionable Odor Prohibited:** No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and 62-210.200(203), F.A.C.]
8. **General Visible Emissions:** No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20 percent opacity. [Rule 62-296.320(4)(b)1, F.A.C.]
9. **Unconfined Particulate Emissions:** During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

**TESTING REQUIREMENTS**

10. **Required Number of Test Runs:** For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

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11. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2), F.A.C.]
12. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]
13. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C.
  - a. *Required Sampling Time*. Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes. The minimum observation period for a visible emissions compliance test shall be thirty (30) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur.
  - b. *Minimum Sample Volume*. Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.
  - c. *Calibration of Sampling Equipment*. Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-I, F.A.C.[Rule 62-297.310(4), F.A.C.]
14. Determination of Process Variables
  - a. *Required Equipment*. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
  - b. *Accuracy of Equipment*. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.[Rule 62-297.310(5), F.A.C.]
15. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C.
16. Test Notification: The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator. [Rule 62-297.310(7)(a)9, F.A.C.]
17. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]
18. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide



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sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

1. The type, location, and designation of the emissions unit tested.
2. The facility at which the emissions unit is located.
3. The owner or operator of the emissions unit.
4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8. The date, starting time and duration of each sampling run.
9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10. The number of points sampled and configuration and location of the sampling plane.
11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12. The type, manufacturer and configuration of the sampling equipment used.
13. Data related to the required calibration of the test equipment.
14. Data on the identification, processing and weights of all filters used.
15. Data on the types and amounts of any chemical solutions used.
16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18. All measured and calculated data required to be determined by each applicable test procedure for each run.
19. The detailed calculations for one run that relate the collected data to the calculated emission rate.
20. The applicable emission standard, and the resulting maximum allowable emission rate for the emissions unit, plus the test result in the same form and unit of measure.
21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

**RECORDS AND REPORTS**

19. **Records Retention:** All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rules 62-4.160(14) and 62-213.440(1)(b)2, F.A.C.]
20. **Annual Operating Report:** The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	<p>A. Signature  <input checked="" type="checkbox"/> Agent  <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name)            J. SALAZAR</p> <p>C. Date of Delivery            AUG - 1 2001</p>
<p>1. Article Addressed to:</p> <p>Mr. Richard Craig, V.P. of Southeastern Operations            Florida Gas Transmission Company            Post Office Box 4657            Houston, TX 77101-4657</p>	<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No            If YES, enter delivery address below:</p> <p>3. Service Type  <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail  <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise  <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>2. Article Number            (Transfer from service label)</p>	<p>7001 0320 0001 3092 3104</p>
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