Florida Gas Transmission Company
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Post Office Box 945100, Maitland, FL 32794-5100
407.838.7000 Fax 407.838.7001

January 21, 2005

VIA UPS Overnight Tracking No. 1Z3410920198490702

Ms. Trina Vielhauer
Bureau of Air Regulation
Florida Department of Environmental Protection
Twin Towers Office Bldg.
2600 Blairstone
Tallahassee, FL 32399-2400

Reference: Facility No. 0830070
Compressor Station No. 17, Silver Springs, Marion County

Dear Ms. Vielhauer:

Subject: Application for Air Permit Modification

Florida Gas Transmission Company (FGT) has installed a Nuovo Pignone PGT-10B compressor turbine at the above referenced facility under Permit No. 0830070-003-AC and operates it under Title V Permit No. 0830070-003-AV.

This facility is a major source under New Source Review (NSR) definitions and the turbine was installed with permit limits on the hours of operation allowed at levels less than full load. These restrictions were requested in order to avoid exceeding the NSR trigger for carbon monoxide (CO). Subsequent emissions testing of this turbine have demonstrated that CO emissions are considerably lower than the emission rates that were represented by the manufacturer prior to construction. The manufacturer's emission rates were used as a basis for the permitting and the load schedule restrictions. FGT is proposing to modify the permitted CO and volatile organic compound (VOC) emission rates and to remove the current load schedule restrictions. Specific provision changes are proposed in the attached narrative.

Additionally, FGT is requesting that the following permitting note be added for Emission Unit Nos. 004 (Engine 1704) and 008 (Engine 1706).

> [Permitting Note: *The maximum heat input rates are based on the manufacturer's equipment specifications for each gas turbine. They are included to identify the capacity of each emissions unit for purposes of confirming that tests are conducted within 90% to 100% of the emission unit's rated capacity (or to limit future operation to 110% of the test load,*

if applicable) to establish appropriate emissions limits, and to aid in determining future rule applicability].

Attached is an application with supporting documentation for modification to the construction permit. This modification will change the CO and VOC emission rates and remove the load restrictions. Emissions test data are provided in support of this proposed change. FGT understands that no processing fee is required since this facility is operated under a Part 70 Permit.

FGT is also requesting that the fuel monitoring requirement be revised to reference the July 8, 2004, U.S. EPA promulgated revised 40 CFR 60 Subpart GG. Under these revisions, the fuel sulfur monitoring requirements are no longer applicable to the turbine at Compressor Station No. 17 since the gas quality characteristics are in a current, valid purchase contract, tariff sheet or transportation contract specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less (40 CFR 60.331(u)).

Based on discussions with Mr. Alan Zahm at FDEP Central District, FGT will request that these revisions be included with the Title V permit for this facility when the renewal application is submitted by July 2005.

If you have any questions or need additional information, please call me at (407) 838-7057.

Sincerely,

James E. Fleak

James E. Fleak, P.E.
Div. Environmental Specialist

ATTACHMENTS

CC: Rick Craig, w/o attachments
David Parham, P.E.
Duane Pierce, AQMcs, LLC
Compressor Station No. 17

Florida Gas Transmission Company

Phase V Expansion Project

Compressor Station No. 17

APPLICATION
For
AIR PERMIT
MODIFICATION

January 2005

Prepared by AQMcs, LLC

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List of Tables

1.0 INTRODUCTION

Florida Gas Transmission Company (FGT) of Houston, Texas, is proposing to revise Air Construction Permit No. 0830070-003-AC and Title V Permit No. 0830070-004-AV for its existing natural gas pipeline facility near Silver Springs, Florida (Compressor Station No. 17). This proposed modification will revise the CO emission rates and load restrictions for a 15,700 brake horsepower (bhp), natural gas-fired, turbine compressor engine that was installed as part of FGT's Phase V Expansion Project.

Compressor Station No. 17 is located in Marion County, Florida, approximately 17 miles northeast of Silver Springs on County Highway 314. Figure 1-1 shows the location of the existing compressor station.

The construction permit application requested load restrictions on the turbine based upon the carbon monoxide (CO) and nitrogen oxides (NO_x) emission rates that were provided by the turbine manufacturer. The projected annual emission rates from the new turbine potentially constituted a significant modification at an existing major stationary source under Prevention of Significant Deterioration (PSD) regulations. FGT reduced the NO_x emissions from an existing 2,000 bhp reciprocating compressor engine by modifying the engine. CO emissions were reduced by accepting limits on the hours of operation that were allowed at lower loads for the Nuovo Pignone turbine. Based on the projected net annual emission rate change, there was no PSD significant increase in the emissions of any contaminant and a state only construction permit was required.

Subsequent emissions testing has demonstrated that CO emissions from the turbine are much lower than expected at all loads and that the load restrictions would not have been necessary if permitting had been based on CO emission rates consistent with the emission test values. FGT is proposing to delete the load restrictions and to establish a single CO emission rate for all loads. There will be no change in the total annual CO emissions.

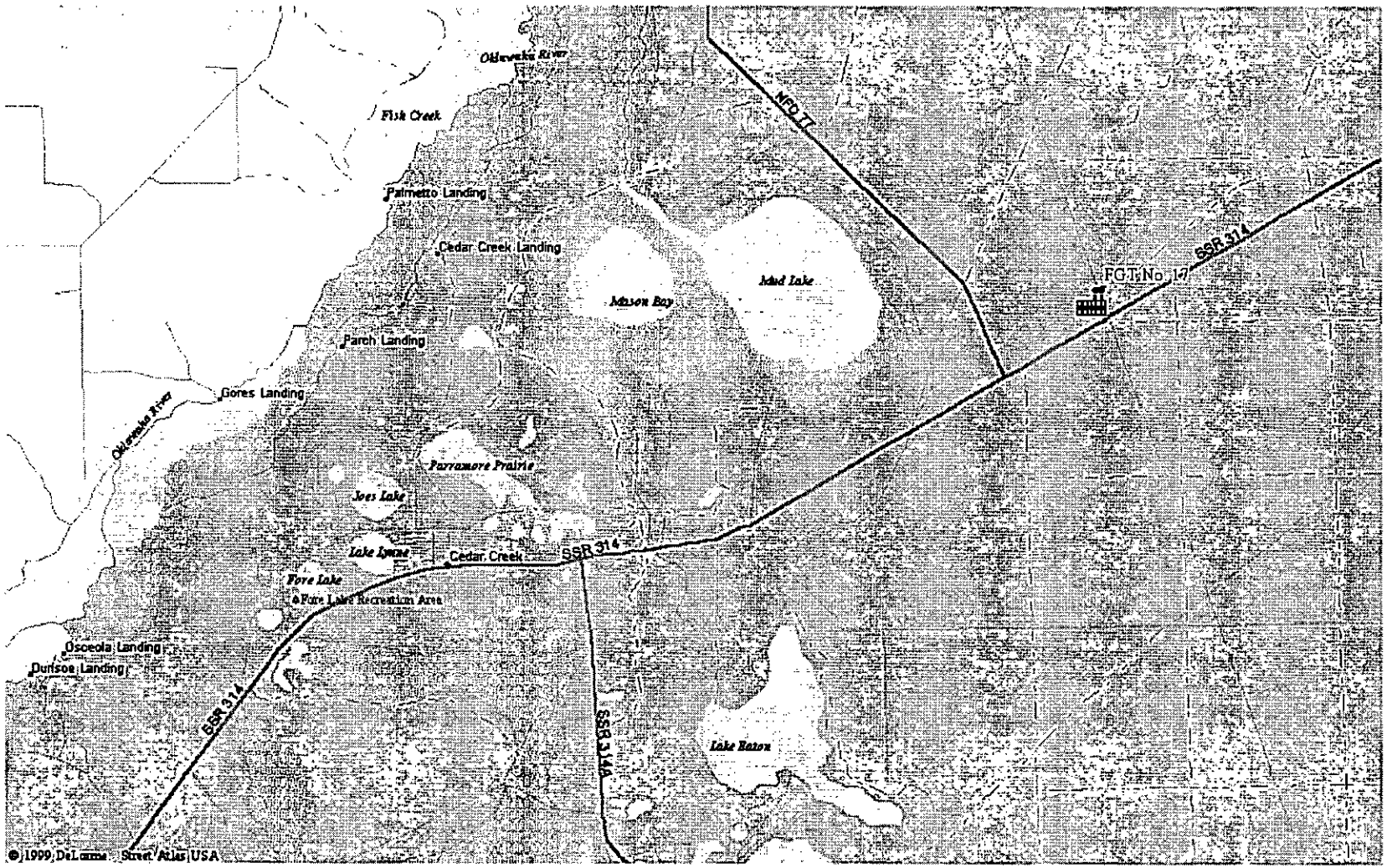
A change in VOC emission limits is also being requested in order to delete the load restrictions. There are no test data on VOC emissions; however, the VOC emissions can be expected to vary as the CO emissions vary. In any case, FGT is proposing that the VOC emission limit be changed to the 50% load lb/hr emission rate for all loads. This is the highest currently permitted lb/hr rate.

This narrative contains three additional sections. Descriptions of the existing operation at FGT's Compressor Station No. 17 and the proposed modifications are presented in Section 2.0. The air quality review requirements and applicability of state and federal regulations are discussed in

Section 3.0. References are included in Section 4.0.

FDEP permit application forms are provided in Attachment A. Attachment B contains a plot plan of the facility. Attachment C contains emissions test data and Attachment D contains emission calculations.

Figure 1-1 Location Map



2.0 PROJECT DESCRIPTION

A plot plan of FGT's Compressor Station No. 17, showing the location of the plant boundaries, the existing emission sources, and the location of the new engine, is presented in Attachment B. The following sections provide a description of the existing operations at this location, as well as a description of the proposed changes.

2.1. Existing Operations

FGT's existing Compressor Station No. 17 consists of four 2,000 bhp and one 2,400 bhp natural-gas-fired reciprocating internal combustion (IC) engines. Table 2-1 summarizes engine manufacturer, model, and the date of installation for each of the existing engines. The original installation was made in 1966 (Compressor Engines 1701 through 1704). An addition, referred to as Phase II, was constructed in 1991 (Compressor Engine 1705) and was subject to PSD review. Existing engine 1704 was modified to reduce NO_X emissions as part of the Phase V Expansion Project. Turbine 1706 was installed as part of the Phase VI Expansion Project in 2002.

The existing facility also has supporting equipment including lube and used oil storage tanks, air compressors and emergency generators.

2.2. Proposed Modifications

FGT proposes to revise the permitted CO emission rates for Turbine No. 1706 (EU 008). The initial permit application was based on CO emission rates provided by the manufacturer. Subsequent emission testing has shown the CO emission rates to be considerably lower than those initially provided by the manufacturer. The current air permit limits the hours of operation at low loads due to the expected high CO emission rates. These restrictions would not have been necessary if the CO emission rates from the manufacturer had been more realistic. Based on the results of emissions testing, FGT proposes to change the CO emission rate to a constant emission rate for all loads and to remove the low load operating restrictions. The total annual CO emissions will not change as a result of this revision.

Additionally, FGT is proposing to change the VOC emission rates to a single rate for all loads based on the worse case emissions rate. HAP emission estimates are also being revised by basing them on the current U.S. EPA AP-42 emission factors instead of the GRI HAPCalc software factors.

2.2.1. Compressor Turbine Engine No. 1706 Change

Turbine engine No. 1706 is a Pignone PGT-10B engine compressor unit rated at 15,700 bhp (ISO). Fuel is exclusively natural gas from the FGT's natural gas pipeline. Engine specifications and stack parameters for the engine are presented in Table 2-2. There will be no changes in these parameters with the proposed change.

Table 2-1 Summary of Existing Compressor Engines

Engine #	Date of Installation	Type	Manufacturer	Model #	Brake Horse Power (bhp)
1701	1966	Reciprocating	Cooper - Bessemer	LS-8-SG	2000
1702	1966	Reciprocating	Cooper - Bessemer	LS-8-SG	2000
1703	1966	Reciprocating	Cooper - Bessemer	LS-8-SG	2000
1704	1966	Reciprocating	Cooper - Bessemer	LS-8-SG	2000
1705	1991	Reciprocating	Dresser-Rand	412KVSRA	2400
1706	2002	Turbine	Nuovo Pignone	PGT-10B	15,700

Table 2-2 Compressor Turbine (1706) Specifications and Stack Parameters

Parameter	Design
Compressor Engine	1706
Type	Gas Turbine
Manufacturer	Nuovo Pignone
Model	PGT10B
Unit Size	15,700 bhp
Heat Input [a]	134.77 MMBtu/hr
Maximum Fuel Consumption [b]	0.1296 MMscf/hr
Speed	7,900 rpm
Stack Parameters	
Stack Height	61.5 ft
Stack Diameter	7.6 ft
Exhaust Gas Flow	215,175 acfm
Exhaust Temperature	909 °F
Exhaust Gas Velocity	79.1 ft/sec

NOTE:

acfm	=	actual cubic feet per minute.
bhp	=	brake horsepower.
Btu/hp-hr	=	British thermal units per brake horsepower per hour.
°F	=	degrees Fahrenheit.
ft	=	feet.
ft/sec	=	feet per second.
MMscf/hr	=	million standard cubic feet per hour
rpm	=	revolutions per minute.

[a] Based on vendor heat rate value plus 10%

[b] Based on heating value for natural gas of 1040 British thermal units per standard cubic foot (Btu/scf).

The currently permitted hourly and annual emissions of regulated pollutants from the engine under normal operating conditions are presented in Table 2-3. Emissions of oxides of nitrogen (NO_X), carbon monoxide (CO) and volatile organic compounds (VOC) are based on the engine manufacturer's initially supplied information.

Typically, turbine vendors do not provide information on particulate matter (PM), hazardous air pollutants (HAP) or sulfur dioxide (SO2) emissions; therefore, particulate matter and HAP emissions were based upon USEPA publication AP-42 Table 3.1-2a (USEPA, 2000) and emissions of SO_2 were based on FGT's Federal Energy Regulatory Commission (FERC) certificate limit of 10 grains sulfur per 100 cubic feet of natural gas.

All contaminants have decreasing lb/hr emission rates with decreasing engine load except CO and VOCs. The CO and VOC emission rates on the PGT-10B increase with decreasing engine load. Permitted emission rates were based on 100% load (worse case) for all contaminants except CO and VOC. CO and VOC emission rates are based on operation at 90 - 100% load for 40% of the time (3504 hr/yr) and 50 - 90% load for 60% of the time (5256 hr/yr). This was done in order for the project to remain minor with respect to Prevention of Significant Deterioration (PSD) permitting requirements for CO emissions.

Emissions tests on EU No. 008 (Engine No. 1706) have demonstrated significantly lower CO emission rates than those represented by the manufacturer. Three separate emissions tests showed lb/hr emission rates ranging from 0.11 lb/hr to 1.44 lb/hr over the load range from 50% to 100%. Results of the tests are provided in Table 2-4. The test reports have been submitted to the Florida DEP and the test summary tables from the reports are attached as Attachment C.

FGT is also proposing to revise the VOC emission limit to a single rate for all loads. The worst case emission rate is at 50% load and is 1.5 lb/hr. FGT is proposing to use this limit for all loads. This is a very conservative estimate of VOC emissions.

The proposed new emission rates are provided in Table 2-5. The multiple lb/hr CO and VOC emission rates have been changed to single rates of 15.54 lb/hr and 1.5 lb/hr at all loads. This new CO lb/hr rate is equal to the currently permitted annual rate of 68.07 tpy; therefore, there is no change in annual emissions for CO. The change in VOC emissions will result in an increase in permitted annual VOC emissions from 4.47 tpy to 6.57 tpy.

Finally, HAP emissions have changed from those in the original construction permit application. They are now estimated using the current AP-42 emission factors. This change does not represent any real change in actual HAP emissions.

Table 2-3 Current Emissions for Compressor Turbine Engine (1706)

Pollutant	Emission Factor	Reference	lb/hr	TPY
Nitrogen Oxides	14.1 lb/hr	Manufacturer Data	14.10	61.76
Carbon Monoxide	5.14 lb/hr @ 100% load 22.50 lb/hr @ 50% load	Manufacturer Data	15.54[a]	68.07[b]
Volatile Organic Compounds	0.29 lb/hr @ 100% load 1.46 lb/hr @ 50% load	Manufacturer Data	1.02[c]	4.47[b]
Particulate Matter	0.0066 lb/MMBtu	AP-42, Table 3.1-2a	0.89	3.94
Sulfur Dioxide	10 grains/100 scf	FERC Limit	3.70	16.21
HAPs	Various see Attachment D	GRI HapCalc 3.0	0.75	3.29

a) Nominal CO (annual) rate, maximum 22.50 lb/hr
b) 90 - 100% load for 40% of time & 50 - 90% load for 60% of time
c) Nominal VOC (annual) rate, maximum 1.46 lb/hr

Table 2-4 CO Emissions Test Results for Compressor Turbine Engine (1706)

Test on 05/29/02						
	Test Results			Permit Limits		
Load	CO ppmv @ 15% O2	CO lb/hr	CO tpy*	CO ppmv @ 15% O2	CO lb/hr	CO tpy**
52.2%	2.22	0.425	1.86	75	22.5	68.07
60.3%	0.59	0.12	0.54	75	22.5	68.07
68.4%	0.52	0.12	0.53	75	22.5	68.07
75.8%	0.45	0.11	0.49	15	5.1	68.07

* Assumes 8760 hrs/yr

** 68.07 tpy limit is based on load restrictions

Test on 01/17/03						
	Test Results			Permit Limits		
Load	CO ppmv @ 15% O2	CO lb/hr	CO tpy*	CO ppmv @ 15% O2	CO lb/hr	CO tpy**
90.1%	0.85	0.250	1.10	15	5.1	68.07

* Assumes 8760 hrs/yr

** 68.07 tpy limit is based on load restrictions

Test on 06/10/03						
	Test Results			Permit Limits		
Load	CO ppmv @ 15% O2	CO lb/hr	CO tpy*	CO ppmv @ 15% O2	CO lb/hr	CO tpy**
54.4%	7.53	1.24	5.44	75	22.5	68.07
70.1%	5.62	1.16	5.06	75	22.5	68.07
85.5%	1.19	0.281	1.23	75	22.5	68.07
100.0%	2.29	0.619	2.71	15	5.1	68.07

* Assumes 8760 hrs/yr

** 68.07 tpy limit is based on load restrictions

Table 2-5 Proposed Emissions for Compressor Turbine Engine (1706)

Pollutant	Emission Factor	Reference	lb/hr	TPY
Nitrogen Oxides	14.1 lb/hr	Manufacturer Data	14.10	61.76
Carbon Monoxide	15.54 lb/hr	Test Data [a]	15.54	68.07
Volatile Organic Compounds	1.5 lb/hr	Manufacturer Data	1.5	6.57
Particulate Matter	0.0066 lb/MMBtu	AP-42, Table 3.1-2a	0.9	3.94
Sulfur Dioxide	10 grains/100 scf	FERC Limit	3.7	16.21
HAPs	Various see Attachment D	AP-42, Table 3.1-3	0.14	0.61

a) See Attachment C

2.2.2. Emissions Summary

There are no changes in total annual CO emissions as a result of the proposed change. VOC emissions will increase 2.10 tpy. The calculations used to estimate emissions are presented in Attachment D.

2.2.3. Proposed Permit Provision Changes

FGT proposes the following changes to the construction permit (Permit No. 0830070-003-AC). Similar changes are requested for the current operating (Permit No. 0830070-004-AV)

Section III. Subsection B. Requirement B.5

Current:

B.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% base load is prohibited. Operation between 50% and 90% of base load shall not exceed 5256 hours during any consecutive 12 months. [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

Proposed:

B.5 Restricted Operation: The hours of operation for the gas turbine are not limited (8760 hours per year). Except for startup and shutdown, operation below 50% base load is prohibited. [Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.]

Section III. Subsection B. Requirement B.6

Current:

B.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_2), and volatile organic compounds (VOC).

Pollutant	Standards		Equivalent Maximum Emissions [f]		Rule Basis [g]
	Load	Standards	lb/hour	TPY	
CO [a]	90-100%	15.0 ppmvd @ 15% O_2	5.1	68.07	Avoid Rule 62-212.400, F.A.C.
	50-90%	75.0 ppmvd @ 15% O_2	22.5		
NOx [b]	50-100%	25.0 ppmvd @ 15% O_2	14.1	61.76	Avoid Rule 62-212.400, F.A.C. 40 CFR 60.332
SO_2 [c]	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 [d]	50-100%	10% opacity, 6-minute average	Not Applicable		Avoid Rule 62-212.400, F.A.C.
PM [e]	50-100%	Good combustion practices	0.9	3.94	Avoid Rule 62-212.400, F.A.C.
VOC [e]	90-100%	Good combustion practices	0.3	4.47	Avoid Rule 62-212.400, F.A.C.
	50-90%	Good combustion practices	1.5		

Proposed:

B6. 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_2), and volatile organic compounds (VOC).

		Equivalent Emissions	
Pollutant	Standards	lb/hr	tons/year
NOx	25.0 ppmvd @ 15% O_2	14.1	61.76
CO	52.0 ppmvd	15.54	68.07
SO2	10.0 grains of sulfur/100 SCF	3.7	16.21
Opacity	10% opacity, 6-minute average		
PM	Good combustion practices	0.9	3.94
VOC	Good combustion practice	1.5	6.57

Section III. Subsection B. Requirement B.13

Current:

B.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 between 50% to 90% load and 90% to 100% load. Within the first 10 days of each month, the permittee shall summarize the following information: average heat input (mmBTU per hour); average power output (bhp); total hours of gas turbine operation; hours of gas turbine operation between 50% to 90% load; and hours of gas turbine operation between and 90% to 100% load. 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.]

Proposed:

B.13 Operation of this turbine compressor shall be monitored by an automated gas turbine control system. As a minimum, this system shall maintain a continuous record of heat input (MMBtu), power output (bhp), and hours of gas turbine operation. Within the first 10 days of each month, 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 actual 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, F.A.C.]

3.0 REGULATORY ANALYSIS

This section presents a review of federal and Florida State air quality regulations, which govern the operations and proposed modifications to be conducted at Compressor Station No. 17.

3.1 Federal Regulations Review

The federal regulatory programs administered by the USEPA have been developed under the authority of the Clean Air Act. The following subsections review the essential elements of the federal regulatory program and the impact they have on the operations and proposed modification at Compressor Station No. 17.

3.1.1. Applicability of New Source Performance Standards (NSPS)

Standards of Performance for New Sources are published in 40 CFR 60. All Standards apply to all new sources within a given category, regardless of geographic location or ambient air quality at the location.

The turbine at Compressor Station No. 17 is subject to Subpart GG, Standards of Performance for Stationary Gas Turbines, because it will have a maximum heat input at peak load of >10.7 gigajoules/hour (10 MMBtu/hr) based on the lower heating value of the natural gas fuel. This regulation establishes emission limits for NO_X and SO_2 and requires performance testing and daily monitoring of fuel nitrogen and sulfur.

The NO_x emission limit for Subpart GG is calculated as follows:

$$STD = 0.0150\ (14.4/Y) + F$$

STD = Allowable NO_x emissions % by volume

Y = Heat rate at peak load not to exceed 14.4 *Kj/watt-hour*

F = NO_x emission allowance

The fuel bound nitrogen in natural gas is less than 0.015% by weight. Therefore, the value of F as defined in 40 CFR 60.332(3) is equal to zero.

For new Engine No. 1706

Y = Btu/bhp-hr x 1.055 *Kj/Btu x hp-hr/745.7 watt-hour*

= 7,807 Btu/bhp-hr x 1.055 *Kj/Btu x hp-hr/745.7 watt-hour*

= 11.0 Kj/watt-hr

STD = 0.0150 (14.4/11.0) + 0

= 0.0196 %

= 196 ppm_v

Table 3-6 summarizes the NSPS applicability for the gas engine. This turbine will comply with both the NSPS for NO_X of 196 ppmv (i.e., manufacturer's estimation of 25 ppmv), and for SO_2 of 150 ppmv (estimated for these turbines to be 4 ppmv). There has been no change in these values.

FGT was granted a custom fuel monitoring schedule for this engine; however, the daily monitoring of fuel nitrogen and sulfur is no longer required under the recent revisions effective July 8, 2004. FGT is requesting that this requirement be removed from the construction and operating permits. Specifically, FGT is requesting that Provision B.12 of Section III be deleted from the construction permit.

Table 3-1 Applicability of New Source Performance Standards

NSPS Subpart	NSPS Regulations	Equipment	Fuel	Pollutant	Heat Input Applicability	Equipment Design Maximum*	NSPS Emission Limits	Equipment Emissions
GG	60.332	Engine No. 1706 Gas Turbine	Gas	NO_2	>10 MM Btu/hr	122 MM Btu/hr	196 ppm_v	25 ppm_v
GG	60.333	Engine No. 1706 Gas Turbine	Gas	SO_2	>10 MM Btu/hr	122 MM Btu/hr	150 ppm_v	~4 ppm_v
Design maximum based on vendor data.								

3.1.2. Applicability of National Emission Standards for Hazardous Air Pollutants (NESHAPS)

Several NESHAPS are potentially applicable to this facility and these emission sources.

3.1.2.1. 40 CFR 63 Subpart HHH

One NESHAPS potentially applicable to this compressor station is 40 CFR 63 Subpart HHH. Compressor Station No. 12 has no affected sources as defined by 40 CFR 63 Subpart HHH and is, therefore, not subject to this subpart.

3.1.2.2. 40 CFR 63 Subpart YYYY

This facility is a Major Source for Hazardous Air Pollutants and this turbine is subject to the new turbine MACT regulations (40 CFR 63 Subpart YYYY) promulgated on March 5, 2004. However, on April 7, 2004, the U.S. EPA proposed to stay Subpart YYYY applicability for four subcategories of the Combustion Turbines source category and also proposed a rule to delete these four subcategories from the Combustion Turbines source category. The stay was finalized for two subcategories on August 18, 2004. This turbine (Engine No. 1706) is included within these two sub-categories and was originally constructed prior to January 14, 2003.

3.1.2.3. 40 CFR 63 Subpart ZZZZ

The U.S.EPA has recently finalized 40 CFR 63 Subpart ZZZZ for reciprocating internal combustion engines; however, all of FGT's reciprocating engines at this facility are lean burn types that are not subject to this regulation.

3.2 Florida State Air Quality Regulations

Compressor Station No. 17 is currently operating under Permit No.0830070-004-AV and is subject to the provisions of that permit. Rule 62, F.A.C., contains the air quality rules and regulations for the State of Florida. The primary federal regulations that affect Compressor Station No. 17 have been incorporated into or are referenced by these rules. The significant state regulations that are applicable to the new emission units are briefly listed below.

3.2.1. Rule 62-210.300 Permits Required

FGT is required to obtain a construction permit prior to construction of new emission units. This requirement is being met by the submittal of this application.

3.2.2. Rule 62-204.240 Ambient Air Quality Standards

FGT must not violate any of the ambient air quality standards listed under this rule. The proposed new emissions will not violate any air quality standards. Potential NOx emissions and impacts will be decreased.

3.2.3. Rule 62-296.320(2) Objectionable Odors

This rule prohibits the discharge of pollutants that will cause or contribute to an objectionable odor. There will be no odors from the proposed changes.

3.2.4. Rule 62-296.320(4)(b)1 General Particulate Emission Limiting Standards.

FGT is prohibited from allowing the compressor engine to discharge into the atmosphere the emissions of air pollutants, the density of which is equal to or greater than that designated as Number 1 on the Ringelmann Chart (20 percent opacity). The new and modified engines will not violate this standard.

3.2.5. Rule 62-210.300(3)(a) Exempt Emissions Units and/or Activities.

The emissions from the fugitive leak emissions are insignificant sources and are exempt from the permitting requirements of Chapter 62-210 Stationary Sources - General Requirements, 62-213 Operation Permits For Major Sources Of Air Pollution and 62-4 Permits.

3.2.6. FDEP Title V CORE Requirements

This facility and emission unit are subject to the requirements of the FDEP Title V CORE requirements.

4.0 REFERENCES

U.S. Environmental Protection Agency (USEPA). 2000. Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources (5th Ed.) AP-42. Supplement E, Research Triangle Park, NC.

Attachment A

DEP Forms

Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – **Use this form to apply for an air construction permit for a proposed project:**

- **subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or**
- **where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or**
- **at an existing federally enforceable state air operation permit (FESOP) or Title V permitted facility.**

Air Operation Permit – **Use this form to apply for:**

- **an initial federally enforceable state air operation permit (FESOP); or**
- **an initial/revised/renewal Title V air operation permit.**

Air Construction Permit & Revised/Renewal Title V Air Operation Permit (Concurrent Processing Option) – **Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.**

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: Florida Gas Transmission Company
2. Site Name: Compressor Station No. 17
3. Facility Identification Number: 0830070
4. Facility Location...
   Street Address or Other Locator: Rt. 3 Box 3390, Highway 65 S
   City: Silver Springs County: Marion Zip Code: 34489-0337
5. Relocatable Facility? ☐ Yes ☒ No
6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

1. Application Contact Name: James Fleak, Division Environmental Specialist
2. Application Contact Mailing Address...
   Organization/Firm: Florida Gas Transmission Company
   Street Address: P.O. Box 945100
   City: Maitland State: FL Zip Code: 32794-5100
3. Application Contact Telephone Numbers:
   Telephone: (407) 838-7057 Fax: (407) 838-7157
4. Application Contact Email Address: james.fleak@crosscountryenergy.com

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	1-24-05
2. Project Number(s):	0930078-005-AC
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

APPLICATION INFORMATION

Purpose of Application

This application for air permit is submitted to obtain: (Check one)

Air Construction Permit

[X] Air construction permit.

Air Operation Permit

[ ] Initial Title V air operation permit.
[ ] Title V air operation permit revision.
[ ] Title V air operation permit renewal.
[ ] Initial federally enforceable state air operation permits (FESOP) where professional engineer (PE) certification is required.
[ ] Initial federally enforceable state air operations permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

[ ] Air construction permit and Title V permit revision, incorporating the proposed project.
[ ] Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

[ ] I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

Florida Gas Transmission Company (FGT) is proposing to revise permitted CO emission rates for a Pignone PGT-10B 15,700 bhp compressor turbine. There will be no change in the annual tpy CO emission rate. The change will eliminate the current CO lb/hr emissions rates that vary with the engine load and replace them with a single lb/hr rate for all loads.

Due to the change in CO emissions, FGT is requesting a slight increase in permitted VOC emissions.

Finally, FGT is requesting that the 40 CFR Subpart GG fuel monitoring requirement be removed from the permit.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
008	Turbine Compressor Engine No. 1706, 15,700 bhp, Natural Gas Fired	NA	$0

Application Processing Fee

Check one: ☐ Attached - Amount: $_____ ☒ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name : Rick Craig, Vice-President, Southeast Operations

2. Owner/Authorized Representative Mailing Address...
Organization/Firm: Florida Gas Transmission Company
Street Address: P.O. Box 4657
City: Houston State: Texas Zip Code: 77210-4657

3. Owner/Authorized Representative Telephone Numbers...
Telephone: (713) 646-7227 ext. Fax: ( ) -

4. Owner/Authorized Representative Email Address: rick.craig@crosscountryenergy.com

5. Owner/Authorized Representative Statement:

I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.

Rick Craig
Signature

1-18-05
Date

APPLICATION INFORMATION

Application Responsible Official Certification

Complete if applying for an initial/revised/renewal Title V permit or concurrent processing of an air construction permit and a revised/renewal Title V permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name: Rick Craig, Vice President, Southeastern Operations

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):

[X] For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.

[ ] For a partnership or sole proprietorship, a general partner or the proprietor, respectively.

[ ] For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.

[ ] The designated representative at an Acid Rain source.

3. Application Responsible Official Mailing Address...
Organization/Firm: Florida Gas Transmission Company
Street Address: P.O. Box 4657
City: Houston State: TX Zip Code: 77210-4657

4. Application Responsible Official Telephone Numbers...
Telephone: (713) 646 - 7227 ext. Fax: ( ) -

5. Application Responsible Official Email Address: rick.craig@crosscountryenergy.com

6. Application Responsible Official Certification:

I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

Rick Craig
Signature

01/10/05
Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: David Holmes Parham
   Registration Number: 50834
2. Professional Engineer Mailing Address...
   Organization/Firm: Florida Gas Transmission Company
   Street Address: 601 S. Lake Destiny Dr. Suite 450
   City: Maitland State: FL Zip Code: 32751
3. Professional Engineer Telephone Numbers...
   Telephone: (407) 838-7119 ext. Fax: (407) 838-7101
4. Professional Engineer Email Address: David.Parham@crosscountryenergy.com
5. Professional Engineer Statement:

   I, the undersigned, hereby certify, except as particularly noted herein, that:*

   (1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

   (2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

   (3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

   (4) If the purpose of this application is to obtain an air construction permit (check here ☐, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☒, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

   (5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

   Signature 1/4/05
   Date

   (seal)

* Attach any exception to certification statement.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone 17 East (km) 418.84 North (km) 3240.90		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 49	6. Facility SIC(s): 4922
7. Facility Comment : Compressor Station No. 17 is an existing natural gas pipeline compressor station with five reciprocating compressor engines and one compressor turbine.			

Facility Contact

1. Facility Contact Name: David Read, Team Environmental Leader
2. Facility Contact Mailing Address... Organization/Firm: Florida Gas Transmission Company Street Address: P.O. Box 337 City: Silver Springs State: FL Zip Code: 34489-0337
3. Facility Contact Telephone Numbers: Telephone: (850) 350-5500 ext. Fax: (850) 350-5501
4. Facility Contact Email Address: david.read@crosscountryenergy.com

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I. that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name: Same as Section 1
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: ( ) - ext. Fax: ( ) -
4. Facility Primary Responsible Official Email Address:

FACILITY INFORMATION

Facility Regulatory Classifications

Check all that would apply following completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a "major source" and a "synthetic minor source."

1. [ ] Small Business Stationary Source	[ ] Unknown
2. [ ] Synthetic Non-Title V Source	
3. [X] Title V Source	
4. [ ] Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. [ ] Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. [X] Major Source of Hazardous Air Pollutants (HAPs)	
7. [ ] Synthetic Minor Source of HAPs	
8. [X] One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. [ ] One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. [ ] One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. [ ] Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment: EU 008 is potentially subject to 40 CFR 63 Subpart YYYY.	

FACILITY INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
NO_X	A	N
CO	A	N
VOC	B	N
SO_2	B	N
PM	B	N
HAPs	A	N

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility Wide Cap [Y or N]? (all units)	3. Emissions Unit ID No.s Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap
NA					

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID:_____ ☒ Previously Submitted, Date: June 2002
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID:_____ ☒ Previously Submitted, Date: November 2000
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: NA ☐ Previously Submitted, Date:_____

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location:
   ☒ Attached, Document ID: Narr. Fig. 1-1 ☐ Not Applicable (existing permitted facility)
2. Description of Proposed Construction or Modification:
   ☒ Attached, Document ID: Narrative Section 2
3. Rule Applicability Analysis:
   ☒ Attached, Document ID: Narrative Section 3
4. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification (Rule 62-212.400(2), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable
6. Preconstruction Air Quality Monitoring and Analysis (Rule 62-212.400(5)(f), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable
7. Ambient Impact Analysis (Rule 62-212.400(5)(d), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(5)(h)5., F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(5)(e)1. and 62-212.500(4)(e), F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.):
    ☐ Attached, Document ID:_____ ☒ Not Applicable

FACILITY INFORMATION

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.):
   ☐ Attached, Document ID:_____ ☒ Not Applicable (no exempt units at facility)

Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities (Required for initial/renewal applications only):
   ☐ Attached, Document ID:_____ ☒ Not Applicable (revision application)

2. Identification of Applicable Requirements (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought):
   ☐ Attached, Document ID:_____
   ☒ Not Applicable (revision application with no change in applicable requirements)

3. Compliance Report and Plan (Required for all initial/revision/renewal applications):
   ☐ Attached, Document ID: NA
   Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.

4. List of Equipment/Activities Regulated under Title VI (If applicable, required for initial/renewal applications only):
   ☐ Attached, Document ID:_____
   ☐ Equipment/Activities On site but Not Required to be Individually Listed
   ☒ Not Applicable

5. Verification of Risk Management Plan Submission to EPA (If applicable, required for initial/renewal applications only) :
   ☐ Attached, Document ID:_____ ☒ Not Applicable

6. Requested Changes to Current Title V Air Operation Permit:
   ☒ Attached, Document ID: Section 2.2.3 of Narrative ☐ Not Applicable

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION
Section [1] of [1]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

15,700 bhp natural gas fired turbine compressor unit, Engine No. 1706

3. Emissions Unit Identification Number: 008

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A	November 2001	March 2002	49	[ ] Yes [X] No

9. Package Unit:
Manufacturer: Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment:

The turbine engine is a Pignone PGT10B engine compressor unit ISO rated at 15,700 bhp. Fuel is exclusively natural gas from FGT's gas pipeline. The engine incorporates dry, low NO_X combustion technology.

EMISSIONS UNIT INFORMATION
Section [1] of [1]

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:

   The engine incorporates dry, low NOX combustion technology.

2. Control Device or Method Code(s): 99

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: NA	
2. Maximum Production Rate: NA	
3. Maximum Heat Input Rate: 134.77 million Btu/hr	
4. Maximum Incineration Rate: NA pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	
24 hours/day	7 days/week
52 weeks/year	8760 hours/year
6. Operating Capacity/Schedule Comment: Higher heat value (HHV) heat input is 134.77 MM Btu/hr based on vendor lower heat value (LHV) specifications of 122.52 MM Btu/hr plus 10%.	

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: 1706	2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: NA		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: None		
5. Discharge Type Code: V	6. Stack Height: 61.5 feet	7. Exit Diameter: 7.6 feet
8. Exit Temperature: 909 °F	9. Actual Volumetric Flow Rate: 215,175 acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: 17 East (km): 414.8 North (km): 3240.9	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): Natural gas fired reciprocating internal combustion engine driving a natural gas compressor, operating full time.		
2. Source Classification Code (SCC): 2-02-002-01	3. SCC Units: million cubic feet burned	
4. Maximum Hourly Rate: 0.1296	5. Maximum Annual Rate: 1135.3	6. Estimated Annual Activity Factor: NA
7. Maximum % Sulfur: 0.03	8. Maximum % Ash: 0.0	9. Million Btu per SCC Unit: 1040
10. Segment Comment: Percent Sulfur is based on maximum Federal Energy Regulatory Commission (FERC) limit of 10 gr S/100scf and gas density of 0.0455 lb/scf.		

Segment Description and Rate: Segment __ of __

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)

Segment Description and Rate: Segment __ of __

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment __ of __

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
VOC			NS
SO_2			EL
PM			NS
NO_X			EL
CO			EL
PM_{10}			NS

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: NOX	2. Total Percent Efficiency of Control:
3. Potential Emissions: 14.1 lb/hour 61.76 tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 14.1 lb/hr Reference: Vendor's data	7. Emissions Method Code: 5
8. Calculation of Emissions: (14.10 lb/hr)(1 ton/2000 lb)(8760hr/1 yr) = 61.76 tons/year	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: Vendor's data based on ISO conditions and site elevation.	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 25 ppmv	4. Equivalent Allowable Emissions: 14.1 lb/hour 61.76 tons/year
5. Method of Compliance: Initial performance test.	
6. Allowable Emissions Comment (Description of Operating Method): 40 CFR 60.332(3) limits NOX emissions to 196 ppmv.	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: CO	2. Total Percent Efficiency of Control:
3. Potential Emissions: 15.54 lb/hour 68.07 tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 15.54 lb/hr Reference: Test data	7. Emissions Method Code: 1
8. Calculation of Emissions: (15.54 lb/hr)(1 ton/2000 lb)(8760hr/1 yr) = 68.07 tons/year	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: See Table 2-4 of the narrative and Attachment C for test results	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: 15.54 lb/hour 68.07 tons/year
5. Method of Compliance: Initial performance test.	
6. Allowable Emissions Comment (Description of Operating Method): Emissions based on three separate test events.	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: VOC	2. Total Percent Efficiency of Control:
3. Potential Emissions: 1.5 lb/hour 6.57 tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 1.5 lb/hr Reference: Vendor's data	7. Emissions Method Code: 5
8. Calculation of Emissions: (1.5 lb/hr)(1 ton/2000 lb)(8760hr/1 yr) = 6.57 tons/year	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: Vendor's data based on ISO conditions at lowest load for total hydrocarbons (THC). VOCs assumed to be 10% of THC.	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: 1.5 lb/hour 6.57 tons/year
5. Method of Compliance: Initial performance test.	
6. Allowable Emissions Comment (Description of Operating Method): CO compliance test and good combustion practices	

Allowable Emissions Allowable Emissions __ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: SO2	2. Total Percent Efficiency of Control:
3. Potential Emissions: 3.70 lb/hour 16.21 tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 10 grains/100 scf Reference: Vendor's fuel use data and FERC limitation	7. Emissions Method Code: 3

8. Calculation of Emissions:

(10 gr S/100 scf)(129,600 scf/hr)(1 lb/7000 gr) = 1.85 lb S/hr
(1.85 lb S/hr)(2 lb SO2/lb S) = 3.70 lb SO2/hr
(3.70 lb SO2/hr)(8760 hr/yr)(1 ton/2000 lb) = 16.21 ton/yr

9. Pollutant Potential/Estimated Fugitive Emissions Comment:

SO2 emission factor is based on maximum Federal Energy Regulatory Commission (FERC) limit of 10 gr S/100 scf and gas density of 0.0455 lb/scf.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: 3.70 lb/hour 16.21 tons/year
5. Method of Compliance: Initial performance test.	
6. Allowable Emissions Comment (Description of Operating Method): FGT is requesting that Provision B.12 of Section III be deleted from the construction permit.	

Allowable Emissions Allowable Emissions __ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: PM	2. Total Percent Efficiency of Control:
3. Potential Emissions: 0.89 lb/hour 3.94 tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 0.0066 lb/MM Btu Reference: Table 3.1-2a, AP-42 4/00, Supplement E	7. Emissions Method Code: 4
8. Calculation of Emissions: (0.0066 lb/MM Btu)(134.77 MM Btu/hr) = 0.9 lb/hr (0.9 lb/hr)(8760 hr/yr)(1 ton/2000 lb) = 3.94 ton/yr	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions NA of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Initial performance test.	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: HAPS	2. Total Percent Efficiency of Control:
3. Potential Emissions: 0.14 lb/hour 0.61 tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 0.00103 lb/MM Btu Reference: Table 3.1-3, AP-42 4/00, Supplement E	7. Emissions Method Code: 4

8. Calculation of Emissions:

(0.00103 lb/MM Btu)(134.77 MM Btu/hr) = 0.14 lb/hr
(0.14 lb/hr)(8760 hr/yr)(1 ton/2000 lb) = 0.61 ton/yr

9. Pollutant Potential/Estimated Fugitive Emissions Comment:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions NA of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Initial performance test.	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE10	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Allowable Opacity: Normal Conditions: 10 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: Annual test with EPA Method 9	
5. Visible Emissions Comment:	

Visible Emissions Limitation: Visible Emissions Limitation ___ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor ___NA___ of _

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION
Section [ ] of [ ]

I. EMISSIONS UNIT ADDITIONAL INFORMATION
Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: _____ [X] Previously Submitted, Date 2000

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: _____ [X] Previously Submitted, Date 2000

3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: _____ [ ] Previously Submitted, Date None

4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: _____ [ ] Previously Submitted, Date _____
   [X] Not Applicable (construction application)

5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: _____ [ ] Previously Submitted, Date _____
   [X] Not Applicable

6. Compliance Demonstration Reports/Records
   [ ] Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____

   [x] Previously Submitted, Date: 07/02/02, 02/27/02, 07/24/03
   Test Date(s)/Pollutant(s) Tested: 5/29/02 – NOx and CO, 01/17/02 – NOx and CO, 06/10/03 - NOX, CO and SO2

   [ ] To be Submitted, Date (if known): _____
   Test Date(s)/Pollutant(s) Tested: _____

   [ ] Not Applicable

   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute
   [ ] Attached, Document ID: _____ [X] Not Applicable

EMISSIONS UNIT INFORMATION
Section [ ] of [ ]

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e))
   [ ] Attached, Document ID: _____ [X] Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.)
   [ ] Attached, Document ID: _____ [X] Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only)
   [ ] Attached, Document ID: _____ [X] Not Applicable

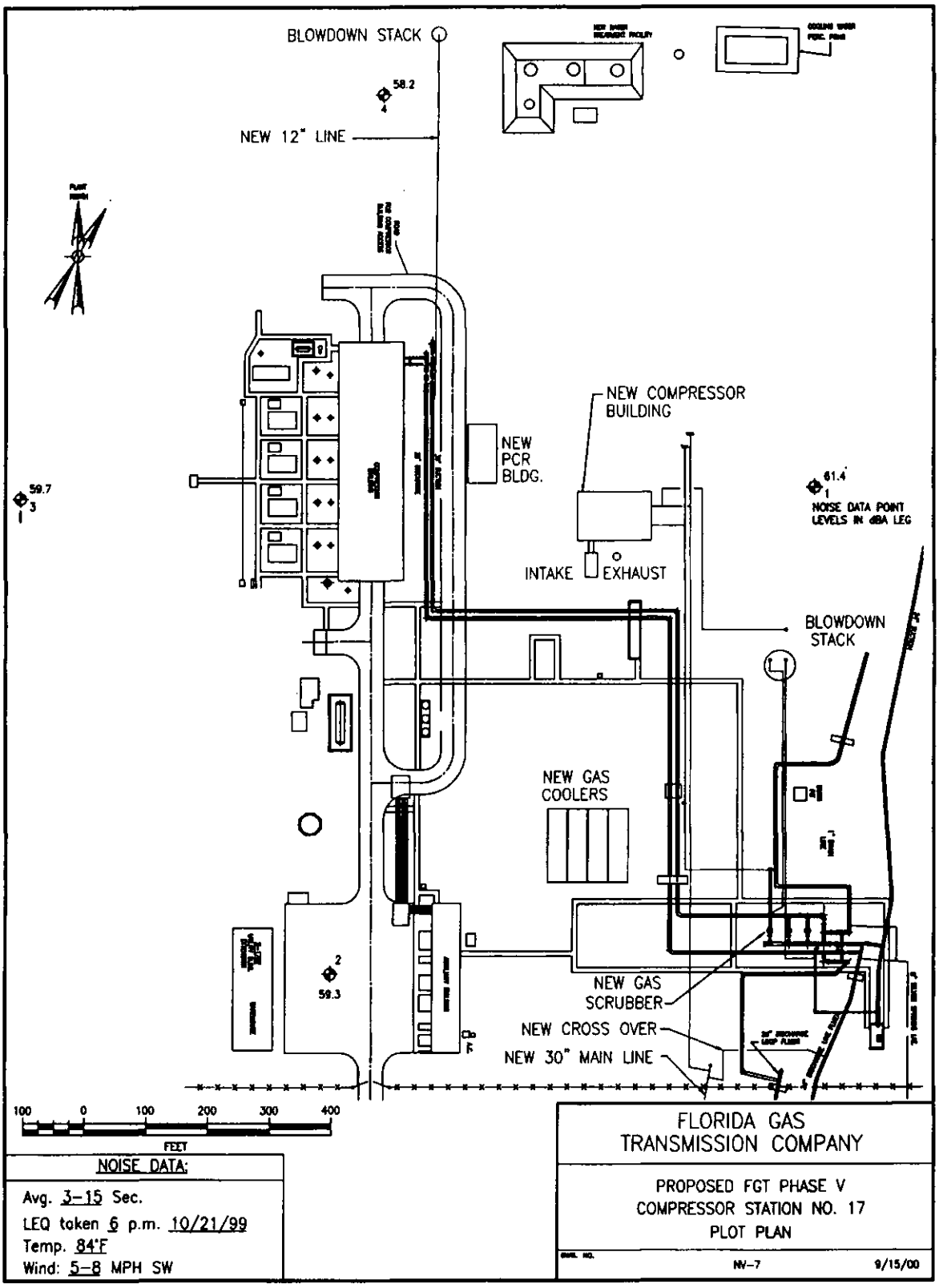
Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements
   [X] Attached, Document ID: Narrative Section 3.0_____
2. Compliance Assurance Monitoring
   [ ] Attached, Document ID: _____ [X] Not Applicable
3. Alternative Methods of Operation
   [ ] Attached, Document ID: _____ [X] Not Applicable
4. Alternative Modes of Operation (Emissions Trading)
   [ ] Attached, Document ID: _____ [X] Not Applicable
5. Acid Rain Part Application
   - [ ] Certificate of Representation (EPA Form No. 7610-1)
     - [ ] Copy Attached, Document ID:
   - [ ] Acid Rain Part (Form No. 62-210.900(1)(a))
     - [ ] Attached, Document ID:_____
     - [ ] Previously Submitted, Date:_____
   - [ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
     - [ ] Attached, Document ID:_____
     - [ ] Previously Submitted, Date:_____
   - [ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
     - [ ] Attached, Document ID:_____
     - [ ] Previously Submitted, Date:_____
   - [ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
     - [ ] Attached, Document ID:_____
     - [ ] Previously Submitted, Date:_____
   - [ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
     - [ ] Attached, Document ID:_____
     - [ ] Previously Submitted, Date:_____
   - [ ] Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
     - [ ] Attached, Document ID:_____
     - [ ] Previously Submitted, Date:_____
   - [ ] Not Applicable

Additional Requirements Comment

Attachment B

Plot Plan


BLOWDOWN STACK
58.2
4
NEW 12" LINE
NEW COMPRESSOR BUILDING
NEW PCR BLDG.
59.7
3
61.4
1
NOISE DATA POINT LEVELS IN dBA LEQ
INTAKE
EXHAUST
BLOWDOWN STACK
NEW GAS COOLERS
2
59.3
NEW GAS SCRUBBER
NEW CROSS OVER
NEW 30" MAIN LINE
100 0 100 200 300 400
FEET
NOISE DATA:
Avg. 3-15 Sec.
LEQ taken 6 p.m. 10/21/99
Temp. 84°F
Wind: 5-8 MPH SW
FLORIDA GAS TRANSMISSION COMPANY
PROPOSED FGT PHASE V
COMPRESSOR STATION NO. 17
PLOT PLAN
DWG. NO.
NV-7
9/15/00

Attachment C

Test Reports

Engine 1706 Report Dated 05/29/02
Engine 1706 Report Dated 01/17/03
Engine 1706 Report Dated 06/10/03

Engine 1706 Test Dated 05/29/02

TABLE 3:Summary of Results
Unit 1706
Full Load Testing

Company: Florida Gas Transmission Company
Facility: Compressor Station No. 17
Location: Silver Springs, Marion County, Florida
Source: GE Nuevo Pignone Model No. PGT-10B Combustion Gas Turbine Compressor
Technicians: LJB, RPO

Test Number	**1706-C-10**	**1706-C-11**	**1706-C-12**		
Date	5/29/02	5/29/02	5/29/02		
Start Time	15:46	16:57	18:06		**FDEP Permit Limits**
Stop Time	16:46	17:57	19:06		
Turbine/Compressor Operation		**Full Load**		***Averages***	
Gas Producer Speed (NGP, %)	10813	10817	10826	***10819***	
Power Turbine Speed (NPT, %)	7122	7169	7213	***7168***	
Turbine Load (Engine Horsepower, Hp)	9,799	9,909	10,097	***9935***	**15,700 ISO**
Turbine Capacity (as Horsepower Output)	13,028	13,082	13,227	***13,112***	
Percent Load (% of max HP at inlet temp and %NPT)	75.2%	75.7%	76.3%	***75.8%***	
Thermal Load (% load available, Pignone)	78.6%	78.7%	79.0%	***78.7%***	
Engine Compressor Discharge Pressure (96CD, psia)	199.4	199.7	201.1	***200.1***	
Turbine Air Inlet Temperature (CT-1A, °F)	90.9	90.2	88.1	***89.7***	
Air Inlet Duct Losses (combined, "H_2O)	0.83	0.83	0.83	***0.83***	
Power Turbine Inlet Temperature (TT-XD, °F)	956.8	955.8	953.4	***955.3***	
Gas Pilot Valve Command (% open)	14.14	14.13	14.10	***14.12***	
Gas Compressor Suction Pressure (psig)	597.7	585.9	575.7	***586.5***	
Gas Compressor Suction Temperature (°F)	74.3	74.3	74.2	***74.3***	
Gas Compressor Discharge Pressure (psig)	880.7	866.8	853.7	***867.1***	
Gas Compressor Discharge Temperature (°F)	134.7	135.3	135.5	***135.2***	
Compressor Flow (MMSCFD)	470.0	469.6	476.1	***471.9***	
Turbine Fuel Data (Natural Gas)					
Fuel Heating Value (Btu/SCF, HHV)	1033.5	1033.5	1033.5	***1033.5***	
Fuel Specific Gravity	0.5838	0.5838	0.5838	***0.5838***	
O_2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	8641	8641	8641	***8641***	
CO_2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	1026	1026	1026	***1026***	
Total Sulfur in Fuel (ppm, weight basis)	5.52	5.52	5.52	***5.52***	**8000**
Total Sulfur in Fuel (grains S/per 100SCF of NG)	0.173	0.173	0.173	***0.173***	**10**
Fuel Flow (MSCFH)	108.416	108.574	109.484	***108.825***	
Heat Input (MMBtu/hr, Higher Heat Value)	112.05	112.21	113.15	***112.47***	**134.8 ISO**
Heat Input (MMBtu/hr, Lower Heat Value)	100.84	100.99	101.84	***101.22***	
Ambient Conditions					
Atmospheric Pressure ("Hg)	29.69	29.69	29.68	***29.69***	
Temperature (°F): Dry bulb	88.0	86.7	83.8	***86.2***	
(°F): Wet bulb	74.3	74.3	75.1	***74.5***	
Humidity (lbs moisture/lb of air)	0.0147	0.0151	0.0164	***0.0154***	
Measured Emissions					
NO_x (ppmv, dry basis)	14.70	14.64	14.76	***14.70***	
NO_x (ppmv, dry @ 15% O_2)	**17.0**	**17.0**	**17.2**	***17.1***	**25.0**
NO_x (ppmv @ 15% O_2, ISO Day)	18.3	18.5	19.2	***18.7***	
CO (ppmv, dry basis)	0.39	0.38	0.37	***0.38***	
CO (ppmv, dry @ 15% O_2)	**0.46**	**0.45**	**0.44**	***0.45***	**15.0**
O_2 (% volume, dry basis)	15.81	15.82	15.83	***15.82***	
CO_2 (% volume, dry basis)	2.98	2.98	2.99	***2.99***	
Visible Emissions (% opacity)	0	-	-	***0***	**10**
F_O (fuel factor, range = 1.600-1.836 for NG)	1.71	1.70	1.69	***1.70***	
Stack Volumetric Flow Rates					
via O_2 "F_c-factor" (SCFH, dry basis)	3.98E+06	3.99E+06	4.03E+06	***4.00E+06***	
via CO_2 "F_c-factor" (SCFH, dry basis)	3.85E+06	3.86E+06	3.88E+06	***3.86E+06***	
Calculated Emission Rates (via EPA Method 19)					
NO_x (lbs/hr)	**6.98**	**6.98**	**7.10**	***7.02***	**14.1**
CO (lbs/hr)	**0.11**	**0.11**	**0.11**	***0.11***	**5.1**
SO_2 (lbs/hr, based on fuel flow and fuel sulfur)	**0.0534**	**0.054**	**0.054**	***0.054***	**3.7**

Testing by Cubix Corporation - Austin, Texas - Gainesville, Florida

Company: Florida Gas Transmission Company
Facility: Compressor Station No. 17
Location: near Silver Springs, Marion County, Florida
Source: GE Nuovo Pignone Model No. PGT-10B
Combustion Gas Turbine Compressor
Technicians: LJB, RPO

TABLE 4: Summary of Results
Unit 1706
Reduced Load Testing

Test Number	1706-C-1	1706-C-2	1706-C-3	1706-C-4	1706-C-5	1706-C-6	1706-C-7	1706-C-8	1706-C-9
Date	5/29/02	5/29/02	5/29/02	5/29/02	5/29/02	5/29/02	5/29/02	5/29/02	5/29/02
Start Time	10:22	11:21	11:50	12:43	13:12	13:42	14:12	14:42	15:11
Stop Time	11:12	11:41	12:10	13:03	13:32	14:02	14:32	15:02	15:31
Turbine/Compressor Operation		**Low Load**			**Mid-Low Load**			**Mid-High Load**	
Gas Producer Speed (NGP, rpm)	10427	10442	10444	10579	10574	10584	10708	10696	10699
Power Turbine Speed (NPT, rpm)	5979	5980	5979	6495	6498	6521	6806	6842	6872
Turbine Horsepower (Hp)	6,563	6,585	6,597	7,758	7,642	7,718	8,819	8,829	8,696
Turbine Capacity (Pignone Curve, bhp vs. T-1/NPT)	12,694	12,572	12,538	12,796	12,762	12,749	12,820	12,846	12,863
Percent Load (% of max HP at inlet temp and %NPT)	51.7%	52.4%	52.6%	60.6%	59.9%	60.5%	68.8%	68.7%	67.6%
Thermal Load (% load available, Pignone)	59.9%	59.9%	59.8%	66.2%	65.7%	66.0%	72.8%	72.4%	72.5%
Engine Compressor Discharge Pressure (96CD, psia)	170.7	169.6	169.4	180.1	179.1	179.4	190.7	189.9	190.1
Turbine Air Inlet Temperature (CT-1A, °F)	84.4	86.7	87.4	89.3	90.2	90.7	91.5	91.5	91.4
Air Inlet Duct Losses (combined, "H_2O)	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Power Turbine Inlet Temperature (TT-XD, °F)	878.2	882.6	883.0	910.6	909.4	912.1	938.6	938.0	938.8
Gas Pilot Valve Command (% open)	18.99	19.02	19.01	16.56	16.75	16.64	14.72	14.76	14.75
Gas Compressor Suction Pressure (psig)	699.0	696.6	694.3	653.8	649.5	643.6	626.4	619.8	614.2
Gas Compressor Suction Temperature (°F)	91.9	92.5	92.6	75.3	76.8	76.5	74.6	74.6	74.5
Gas Compressor Discharge Pressure (psig)	905.3	902.6	899.5	908.9	902.7	895.9	896.7	891.7	886.6
Gas Compressor Discharge Temperature (°F)	132.2	133.0	133.2	126.9	128.3	128.5	130.4	131.4	131.8
Compressor Flow (MMSCFD)	474.0	470.7	471.1	438.7	432.2	431.6	460.0	451.1	440.6
Turbine Fuel Data (Natural Gas)									
Fuel Heating Value (Btu/SCF, HHV)	1033.5	1033.5	1033.5	1033.5	1033.5	1033.5	1033.5	1033.5	1033.5
Fuel Specific Gravity	0.5838	0.5838	0.5838	0.5838	0.5838	0.5838	0.5838	0.5838	0.5838
O_2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	8641	8641	8641	8641	8641	8641	8641	8641	8641
CO_2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	1026	1026	1026	1026	1026	1026	1026	1026	1026
Total Sulfur in Fuel (ppm, weight basis)	5.52	5.52	5.52	5.52	5.52	5.52	5.52	5.52	5.52
Fuel Flow (MSCFH)	83.213	83.013	83.013	91.613	90.760	91.100	100.423	100.090	99.943
Heat Input (MMBtu/hr, Higher Heat Value)	86.00	85.80	85.80	94.68	93.80	94.15	103.79	103.44	103.29
Heat Input (MMBtu/hr, Lower Heat Value)	77.40	77.22	77.22	85.22	84.42	84.74	93.41	93.10	92.96
Ambient Conditions									
Atmospheric Pressure ("Hg)	29.76	29.76	29.76	29.76	29.75	29.74	29.73	29.72	29.71
Temperature (°F): Dry bulb	82.4	84.2	85.4	89.1	87.3	92.0	91.0	89.2	90.8
(°F): Wet bulb	73.3	73.0	74.6	75.0	74.2	75.7	75.0	74.5	75.0
Humidity (lbs moisture/lb of air)	0.0152	0.0146	0.0156	0.0151	0.0148	0.0150	0.0146	0.0146	0.0147
Cubix Measurements									
NO_x (ppmv, dry basis)	14.03	14.07	14.08	14.55	14.51	14.67	16.07	16.07	16.31
CO (ppmv, dry basis)	1.82	1.60	1.55	0.44	0.48	0.44	0.48	0.40	0.42
O_2 (% volume, dry basis)	16.52	16.50	16.50	16.28	16.28	16.35	16.00	16.04	16.01
CO_2 (% volume, dry basis)	2.60	2.60	2.60	2.74	2.73	2.75	2.89	2.88	2.89
F_o (fuel factor, range = 1.600-1.836 for NG)	1.69	1.69	1.69	1.69	1.69	1.66	1.70	1.69	1.69
Stack Volumetric Flow Rates									
via O_2 "F_o-factor" (SCFH, dry basis)	3.55E+06	3.52E+06	3.52E+06	3.70E+06	3.66E+06	3.73E+06	3.83E+06	3.85E+06	3.82E+06
via CO_2 "F_c-factor" (SCFH, dry basis)	3.40E+06	3.38E+06	3.38E+06	3.54E+06	3.52E+06	3.52E+06	3.69E+06	3.69E+06	3.67E+06
Cubix Calculated Values									
NO_x (ppmv, dry @ 15% O_2)	**18.9**	**18.9**	**18.9**	**18.6**	**18.5**	**19.0**	**19.4**	**19.5**	**19.7**
NO_x (ppmv @ 15% O_2, ISO Day)	20.9	20.4	20.8	20.1	20.0	20.5	20.7	20.9	21.1
CO (ppmv, dry @ 15% O_2)	2.45	2.15	2.07	0.57	0.62	0.58	0.58	0.48	0.51
NO_x (lbs/hr)	5.94	5.92	5.92	6.42	6.35	6.54	7.35	7.38	7.43
CO (lbs/hr)	0.469	0.410	0.396	0.12	0.13	0.12	0.13	0.11	0.12

Testing by Cubix Corporation - Austin, Texas - Gainesville, Florida

Engine 1706 Test Dated 01/17/03

Table 3
Summary of Results
Unit 1706

Company: Florida Gas Transmission Company
Facility: Compressor Station No. 17
Location: Silver Springs, Florida
Source: GE Nuovo Pignone Model No. PGT-10B
Combustion Gas Turbine Compressor
Technicians: RPO, JTH

Test Number:	**1706-C-1**	**1706-C-2**	**1706-C-3**		
Date	1/17/03	1/17/03	1/17/03		
Start Time	8:00	9:23	10:42		**FDEP Permit Limits**
Stop Time	9:00	10:23	11:42		
Turbine/Compressor Operation		**Full Load**		***Averages***	
Gas Producer Speed (NGP, %)	10,998	11,000	10,999	***10,999***	
Power Turbine Speed (NPT, %)	7,186	7,236	7,275	***7,232***	
Turbine Load (compressor shaft power, bhp)	13,281	13,598	13,586	***13488***	**15,700 ISO**
Turbine Capacity (as Horsepower Output)	14,828	14,984	15,122	***14,978***	
Percent Load (% of maximum at T-1 and %NPT)	89.6%	90.7%	89.8%	***90.1%***	
Engine Compressor Discharge Pressure (96CD, psia)	229.0	230.4	230.2	***229.9***	
Turbine Air Inlet Temperature (CT-1A, °F)	54.2	52.3	51.0	***52.5***	
Air Inlet Duct Losses (combined, "H_2O)	0.83	0.83	0.83	***0.83***	
Power Turbine Inlet Temperature (TT-XD, °F)	917.9	915.7	914.8	***916.1***	
Gas Pilot Valve Command (% open)	13.00	13.00	13.00	***13.00***	
Gas Compressor Suction Pressure (psig)	629.0	621.2	614.6	***621.6***	
Gas Compressor Suction Temperature (°F)	56.2	56.2	56.2	***56.2***	
Gas Compressor Discharge Pressure (psig)	929.2	920.5	913.2	***921.0***	
Gas Compressor Discharge Temperature (°F)	115.7	116.0	116.5	***116.0***	
Compressor Flow (MMSCFD)	637.8	647.3	644.7	***643.3***	
Turbine Fuel Data (Natural Gas)					
Fuel Heating Value (Btu/SCF, HHV)	1038.7	1038.7	1038.7	***1038.7***	
Fuel Specific Gravity	0.5895	0.5895	0.5895	***0.5895***	
O_2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	8645	8645	8645	***8645***	
CO_2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	1029	1029	1029	***1029***	
Total Sulfur in Fuel (grains S/per 100SCF of NG)	0.261	0.261	0.261	***0.261***	**10**
Fuel Flow (SCFH)	124,094	124,944	125,525	***124,854***	
Heat Input (MMBtu/hr, Higher Heat Value)	128.90	129.78	130.38	***129.69***	**134.8 ISO**
Heat Input (MMBtu/hr, Lower Heat Value)	116.01	116.80	117.35	***116.72***	
Ambient Conditions					
Atmospheric Pressure ("Hg)	29.95	29.98	30.05	***29.99***	
Temperature (°F): Dry bulb	50.6	50.7	48.8	***50.0***	
(°F): Wet bulb	49.9	45.3	43.0	***46.1***	
Humidity (lbs moisture/lb of air)	0.0073	0.0051	0.0044	***0.0056***	
Measured Emissions					
NO_X (ppmv, dry basis)	12.47	13.14	13.79	***13.13***	
NO_X (ppmv, dry @ 15% O_2)	**14.6**	**15.3**	**16.0**	***15.3***	**25.0**
NO_X (ppmv @ 15% O_2, ISO Day)	15.1	15.2	15.8	***15.4***	
CO (ppmv, dry basis)	0.80	0.69	0.70	***0.73***	
CO (ppmv, dry @ 15% O_2)	**0.94**	**0.80**	**0.82**	***0.85***	**15.0**
O_2 (% volume, dry basis)	15.86	15.83	15.82	***15.84***	
CO_2 (% volume, dry basis)	3.00	3.00	2.99	***3.00***	
Visible Emissions (% opacity)	-	0	-	***0***	**10**
F_O (fuel factor, range = 1.600-1.836 for NG)	1.68	1.69	1.70	***1.69***	
Stack Volumetric Flow Rates					
via O_2 "F_d-factor" (SCFH, dry basis)	4.71E+06	4.71E+06	4.72E+06	***4.71E+06***	
via CO_2 "F_c-factor" (SCFH, dry basis)	4.51E+06	4.53E+06	4.56E+06	***4.53E+06***	
Calculated Emission Rates (via EPA Method 19)					
NO_X (lbs/hr)	**7.01**	**7.39**	**7.77**	***7.39***	**14.1**
CO (lbs/hr)	**0.274**	**0.23**	**0.241**	***0.250***	**5.1**
SO_2 (lbs/hr, based on fuel flow and fuel sulfur)	**0.0925**	**0.0931**	**0.0935**	***0.0930***	**3.7**

Testing by Cubix Corporation - Austin, Texas - Gainesville, Florida

Engine 1706 Test Dated 06/10/03

Table 3: Summary of Results
Unit 1706
Full Load Testing

Company: Florida Gas Transmission Company
Facility: Compressor Station No. 17
Location: Silver Springs, Marion County, Florida
Source: GE Nuevo Pignone Model No. PGT-10B Combustion Gas Turbine Compressor
Technicians: LJB, RPO, JTH

Test Number	**1706-C-10**	**1706-C-11**	**1706-C-12**		
Date	6/10/03	6/10/03	6/10/03		
Start Time	16:34	17:48	19:01		**FDEP**
Stop Time	17:34	18:48	20:01		**Permit**
Turbine/Compressor Operation	**Full Load**			***Averages***	**Limits**
Gas Producer Speed (NGP, rpm)	11,001	10,998	10,999	***10,999***	
Power Turbine Speed (NPT, rpm)	7,200	7,314	7,387	***7,300***	
Compressor Shaft Power (Turbine Horsepower, bhp)	12,066	12,185	12,170	***12,140***	**15,700 ISO**
Turbine Capacity (Calculated, bhp @ ambient conditions)	12,057	12,167	12,207	***12,144***	
Percent Load (% of turbine capacity @ ambient conditions)	100.1%	100.1%	99.7%	***100.0%***	
Engine Compressor Discharge Pressure (96CD, psia)	203.3	203.7	204.3	***203.8***	
Turbine Air Inlet Temperature (CT-1A, °F)	94.6	93.1	92.2	***93.3***	
Air Inlet Duct Losses (combined, "H_2O)	1.98	1.98	1.98	***1.98***	
Power Turbine Inlet Temperature (TT-XD, °F)	951.8	949.7	948.2	***949.9***	
Inlet Guide Main Valve Command (% open)	94.12	94.12	94.12	***94.12***	
Gas Pilot Valve Command (% open)	13.79	13.78	13.77	***13.78***	
Gas Compressor Suction Pressure (psig)	602.8	586.0	571.8	***586.9***	
Gas Compressor Suction Temperature (°F)	74.8	74.8	74.8	***74.8***	
Gas Compressor Discharge Pressure (psig)	893.4	880.8	865.2	***879.8***	
Gas Compressor Discharge Temperature (°F)	137.5	139.9	141.1	***139.5***	
Compressor Flow (MMSCFD)	548.5	531.9	521.1	***533.8***	
Turbine Fuel Data (Natural Gas)					
Fuel Heating Value (Btu/SCF, HHV)	1058.3	1058.3	1058.3	***1058.3***	
Fuel Specific Gravity	0.6032	0.6032	0.6032	***0.6032***	
O_2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	8652	8652	8652	***8652***	
CO_2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	1036	1036	1036	***1036***	
Total Sulfur in Fuel (ppm, weight basis)	4.96	4.96	4.96	***4.96***	**8000**
Total Sulfur in Fuel (grains S/per 100SCF of NG)	0.160	0.160	0.160	***0.160***	**10**
Fuel Flow (MSCFH)	2693.115	2678.454	2715.356	***2695.641***	
Heat Input (MMBtu/hr, Higher Heat Value)	118.75	118.11	119.73	***118.87***	**134.8 ISO**
Ambient Conditions					
Atmospheric Pressure ("Hg)	29.89	29.89	29.89	***29.89***	
Temperature (°F): Dry bulb	90.6	88.3	86.8	***88.6***	
(°F): Wet bulb	77.2	76.7	75.4	***76.4***	
Humidity (lbs moisture/lb of air)	0.0166	0.0166	0.0158	***0.0163***	
Measured Emissions					
NO_x (ppmv, dry basis)	18.36	18.44	18.48	***18.43***	
NO_x (ppmv, dry @ 15% O_2)	**21.1**	**21.2**	**21.4**	***21.2***	**25.0**
NO_x (ppmv @ 15% O_2, ISO Day)	23.2	23.4	23.3	***23.3***	
CO (ppmv, dry basis)	1.78	1.35	2.84	***1.99***	
CO (ppmv, dry @ 15% O_2)	**2.04**	**1.54**	**3.29**	***2.29***	**15.0**
O_2 (% volume, dry basis)	15.77	15.76	15.80	***15.77***	
CO_2 (% volume, dry basis)	3.06	3.07	3.07	***3.07***	
Visible Emissions (% opacity)	0	-	-	***0***	**10**
F_o (fuel factor, range = 1.600-1.836 for NG)	1.68	1.67	1.66	***1.67***	
Stack Volumetric Flow Rates					
via O_2 "F_d-factor" (SCFH, dry basis)	4.26E+06	4.23E+06	4.32E+06	***4.27E+06***	
via CO_2 "F_c-factor" (SCFH, dry basis)	4.09E+06	4.06E+06	4.12E+06	***4.09E+06***	
Calculated Emission Rates (via EPA Method 19)					
NO_x (lbs/hr)	**9.34**	**9.31**	**9.53**	***9.39***	**14.1**
CO (lbs/hr)	**0.550**	**0.414**	**0.893**	***0.619***	**5.1**
SO_2 (lbs/hr, based on fuel flow and fuel sulfur)	**0.0513**	**0.0510**	**0.0517**	***0.0513***	**3.7**
NO_x (tons/yr)	**40.9**	**40.8**	**41.8**	***41.1***	**61.76**
CO (tons/yr)	**2.41**	**1.81**	**3.91**	***2.71***	**68.07**
SO_2 (tons/yr, based on fuel flow and fuel sulfur)	**0.22**	**0.22**	**0.23**	***0.22***	**16.21**

Testing by Cubix Corporation - Gainesville, Florida

Company: Florida Gas Transmission Company
Facility: Compressor Station No. 17
Location: near Silver Springs, Marion County, Florida
Source: GE Nuevo Pignone Model No. PGT-10B
Combustion Gas Turbine Compressor
Technicians: LJB, RPO, JTH

Table 4: Summary of Results
Unit 1706
Reduced Load Testing

Test Number	1706-C-1	1706-C-2	1706-C-3	1706-C-4	1706-C-5	1706-C-6	1706-C-7	1706-C-8	1706-C-9
Date	6/10/03	6/10/03	6/10/03	6/10/03	6/10/03	6/10/03	6/10/03	6/10/03	6/10/03
Start Time	10:10	11:14	11:49	12:53	13:27	14:02	14:36	15:09	15:42
Stop Time	11:00	11:34	12:09	13:13	13:47	14:22	14:56	15:29	16:02
Turbine/Compressor Operation		**Low Load**			**Mid-Low Load**			**Mid-High Load**	
Gas Producer Speed (NGP, rpm)	10,239	10,242	10,251	10,568	10,554	10,560	10,745	10,763	10,760
Power Turbine Speed (NPT, rpm)	4,995	4,994	4,996	5,984	6,082	6,147	6,588	6,652	6,669
Compressor Shaft Power (Turbine Horsepower, bhp)	5,942	5,832	5,771	8,018	8,153	8,140	10,026	10,094	10,113
Turbine Capacity (Calculated, bhp @ ambient conditions)	10,828	10,764	10,680	11,443	11,593	11,637	11,801	11,762	11,799
Percent Load (% of turbine capacity @ ambient conditions)	54.9%	54.2%	54.0%	70.1%	70.3%	69.9%	85.0%	85.8%	85.7%
Engine Compressor Discharge Pressure (96CD, psia)	150.9	149.9	149.1	171.5	172.1	172.6	189.5	189.4	190.0
Turbine Air Inlet Temperature (CT-1A, °F)	87.8	88.9	91.3	95.6	93.9	93.7	95.3	96.5	96.0
Air Inlet Duct Losses (combined, "H2O)	2.81	2.81	2.81	2.81	2.81	2.53	2.53	2.35	2.07
Power Turbine Inlet Temperature (TT-XD, °F)	832.2	833.6	836.5	886.3	883.5	884.8	922.8	928.3	928.3
Inlet Guide Main Valve Command (% open)	65.75	65.14	64.59	80.74	80.91	81.31	91.47	91.61	91.73
Gas Pilot Valve Command (% open)	19.82	19.86	19.89	17.92	17.84	17.80	15.17	15.11	15.05
Gas Compressor Suction Pressure (psig)	797.7	793.0	785.3	691.3	681.0	671.7	650.0	642.0	638.7
Gas Compressor Suction Temperature (°F)	81.7	81.1	80.9	75.3	75.5	75.5	75.2	75.3	75.4
Gas Compressor Discharge Pressure (psig)	898.8	885.7	876.0	908.3	907.3	904.0	905.7	902.0	896.3
Gas Compressor Discharge Temperature (°F)	104.3	102.9	102.6	119.1	121.8	123.3	128.2	129.9	129.8
Compressor Flow (MMSCFD)	765.3	779.5	777.2	528.8	507.1	490.2	541.3	529.8	532.9
Turbine Fuel Data (Natural Gas)									
Fuel Heating Value (Btu/SCF, HHV)	1058.3	1058.3	1058.3	1058.3	1058.3	1058.3	1058.3	1058.3	1058.3
Fuel Specific Gravity	0.6032	0.6032	0.6032	0.6032	0.6032	0.6032	0.6032	0.6032	0.6032
O_2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	8652	8652	8652	8652	8652	8652	8652	8652	8652
CO_2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	1036	1036	1036	1036	1036	1036	1036	1036	1036
Total Sulfur in Fuel (grains S/per 100SCF of NG)	0.160	0.160	0.160	0.160	0.160	0.160	0.160	0.160	0.160
Fuel Flow (MSCFD)	1664.98	1652.99	1621.68	2028.31	2068.45	2071.81	2381.73	2348.01	2324.78
Heat Input (MMBtu/hr, Higher Heat Value)	73.42	72.89	71.51	89.44	91.21	91.36	105.02	103.54	102.51
Ambient Conditions									
Atmospheric Pressure ("Hg)	29.95	29.96	29.96	29.95	29.93	29.92	29.91	29.91	29.89
Temperature (°F): Dry bulb	85.0	85.0	88.2	97.0	94.0	92.0	93.5	97.0	93.5
(°F) Wet bulb	75.8	75.8	76.8	78.8	78.0	77.8	77.0	79.0	75.0
Humidity (lbs moisture/lb of air)	0.0166	0.0166	0.0167	0.0164	0.0164	0.0167	0.0157	0.0166	0.0139
Measured Emissions									
NO_x (ppmv, dry basis)	14.14	14.32	14.44	15.82	15.87	16.06	18.17	18.32	18.77
CO (ppmv, dry basis)	5.84	5.65	4.01	4.56	4.17	3.76	1.02	0.97	0.90
O_2 (% volume, dry basis)	16.93	16.80	16.81	16.53	16.55	16.51	16.14	16.12	16.13
CO_2 (% volume, dry basis)	2.41	2.39	2.39	2.64	2.65	2.66	2.87	2.89	2.88
F_c (fuel factor, range = 1.600-1.836 for NG)	1.65	1.72	1.71	1.66	1.64	1.65	1.66	1.65	1.65
Stack Volumetric Flow Rates									
via O_2 "F_c-factor" (SCFH, dry basis)	3.40E+06	3.27E+06	3.22E+06	3.77E+06	3.86E+06	3.83E+06	4.06E+06	3.99E+06	3.95E+06
via CO_2 "F_c-factor" (SCFH, dry basis)	3.22E+06	3.21E+06	3.15E+06	3.57E+06	3.63E+06	3.62E+06	3.85E+06	3.78E+06	3.75E+06
Calculated Emission Rates									
NO_x (ppmv, dry @ 15% O_2)	**21.0**	**20.6**	**20.8**	**21.4**	**21.5**	**21.6**	**22.5**	**22.6**	**23.2**
NO_x (ppmv @ 15% O_2, ISO Day)	**23.5**	**23.0**	**23.2**	**23.4**	**23.6**	**23.9**	**24.3**	**24.8**	**24.2**
CO (ppmv, dry @ 15% O_2)	**8.67**	**8.13**	**5.79**	**6.16**	**5.65**	**5.06**	**1.27**	**1.20**	**1.11**
NO_x (lbs/hr)	**5.74**	**5.59**	**5.55**	**7.12**	**7.31**	**7.35**	**8.81**	**8.73**	**8.86**
CO (lbs/hr)	**1.44**	**1.34**	**0.940**	**1.25**	**1.17**	**1.05**	**0.302**	**0.283**	**0.257**
NO_x (tons/yr)	**25.2**	**24.5**	**24.3**	**31.2**	**32.0**	**32.2**	**38.6**	**38.2**	**38.8**
CO (tons/yr)	**6.33**	**5.89**	**4.12**	**5.48**	**5.12**	**4.59**	**1.32**	**1.24**	**1.13**

Testing by Cubix Corporation - Gainesville, Florida

Attachment D

Emission Calculations

Engine No. 1706 EPN: 008

CO Emissions: (Based on Test Data)

lb CO/hr = 15.5

tons CO = (lb CO/hr)(hr/yr)(1 ton/2000 lb)
= (15.5 lb CO/hr)(8760 hr/yr)(1 ton/2000 lb)
= 68.07

VOC Emissions: (Based on Vendor Data)

lb VOC/hr = 1.5

tons VOC/yr = (lb VOC/hr)(hr/yr)(1 ton/2000 lb)
= (1.5 lb VOC/hr)(8760 hr/yr)(1 ton/2000 lb)
= 6.57

HAPs Emissions: (Based on AP-42 Table 3.1-3, 4/00)

lb HAP/hr = (lb HAP/MMBtu)(MMBtu/hr)
= (0.00102733 lb/MMBtu)(134.77 MMBtu/hr)
= 0.14

tons HAP/yr = (lb HAP/hr)(hr/yr)(1 ton/2000 lb)
= (0.14 lb PM/hr)(8760 hr/yr)(1 ton/2000 lb)
= 0.61

NOx Emissions: (Based on Vendor Data)

lb NOx/hr = 14.10

tons NOx/yr = (lb NOx/hr)(hr/yr)(1 ton/2000 lb)
= (14.10 lb NOx/hr)(8760 hr/yr)(1 ton/2000 lb)
= 61.76

SO2 Emissions: (Based on FERC Limits)

lb S/hr = (gr S/100 scf)(MMscf/hr)(1 lb/7000 gr)
= (10 gr S/100 scf)(0.1296 MMscf/hr)(1 lb/7000 gr)
= 1.85

lb SO2/hr = (lb S/hr)(2 lb SO2/lb S)
= (1.85 lb S/hr)(2 lb SO2/lb S)
= 3.70

tons SO2/yr = (lb SO2/hr)(hr/yr)(1 ton/2000 lb)
= (3.70 lb SO2/hr)(8760 hr/yr)(1 ton/2000 lb)
= 16.21

PM Emissions: (Based on AP-42 Table 3.1-2a, 4/00)

lb PM/hr = (lb PM / MMBtu)(MMBtu/hr)
= (0.0066 MMBtu/hr)(134.77 MMBtu/hr)
= 0.9

tons PM/yr = (lb PM/hr)(hr/yr)(1 ton/2000 lb)
= (0.9 lb PM/hr)(8760 hr/yr)(1 ton/2000 lb)
= 3.94

Turbine 1706 HAP Emission Factors

HAP	Turbine Factor lb/MMBtu
1,3-Butadiene	4.30E-07
Acetaldehyde	4.00E-05
Acrolein	6.40E-06
Benzene	1.20E-05
Ethylbenzene	3.20E-05
Formaldehyde	7.10E-04
Naphthalene	1.30E-06
PAH	2.20E-06
Propylene Oxide	2.90E-05
Toluene	1.30E-04
Xylenes	6.40E-05
Total Hazardous Cmpds	**1.027E-03**

Reference:

AP-42, 5th Edition, Supplement F, 04/00, Table 3.1-3