Department of
Environmental Protection

Northeast District
7825 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7590

Jeb Bush
Governor

Colleen M. Castille
Secretary

PERMITTEE:

Florida Gas Transmission Company
Compressor Station No. 16
111 Kelsay Lane Ste. A
Tampa, Florida 33619

I.D. Number:	0070012
Permit/Cert Number:	0070012-011-AC
Date of Issue:	March 31, 2006
Expiration Date:	September 30, 2006
County:	Bradford
Latitude/Longitude:	29º 55' 16" N; 82º 19' 34" W
UTM:	E-(17) 371.98; N-3310.57
Project:	Revision

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 62-210, 62-212, 62-272, 62-296, 62-297 and 62-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

PROJECT

Project No. 011 is to revise the Particulate Matter (PM/PM_{10}), and SO_2 emission limits for Emission Unit 003. This revision also increases the heat rate input for EU003 from 62.1 MMBtu/hr to 68 MMBtu/hr; to include the turbine replacement language; to include APPENDIX C, 40 CFR 60, Subpart GG- New Source Performance Standards for gas turbines, adopted by reference in Rule 62-204.800(7)(b), F.A.C., and removes Specific Condition No. C.19: Custom Fuel Monitoring Schedule. All other requirements of Permit No. 0070012-007-AV remain in effect.

EMISSION UNIT 003: Internal Combustion Engine No. 1607

FACILITY DESCRIPTION

This facility is part of a natural gas transmission pipeline system serving the state of Florida. This facility consists of seven natural gas fired engines, five rated at 2,000 bhp and manufactured by Worthington, model SEHG-8, one rated at 4,000 bhp and manufactured by Cooper-Bessemer, model 8W-330-C2, and one rated at 7,200 bhp manufactured by Cooper-Rolls 501-KC7 DLE.

Revised Pollutants: PM/PM_{10} and SO_2.

NSPS 40 CFR 60, SUBPART GG REQUIREMENTS

Please see APPENDIX C- NSPS SUBPART GG Requirements for Gas Turbines

REGULATORY CLASSIFICATION

This facility is subject to regulation under: New Source Performance Standards 40 CFR 60- General Provisions, Appendix A- adopted and incorporated by reference in Rule 62-204.800, F.A.C., New Source Performance Standards 40 CFR 60, Subpart GG- Stationary Gas Fired Turbines; NSPS 40 CFR 60, Appendix A, adopted by reference in Rule 62-204.800, F.A.C., Rule 212.400(5), F.A.C., Prevention of Significant Deterioration (PSD): Permit No. PSD-FL-161; Rule 62-212.400(6), F.A.C., Best Available Control Technology (BACT) Determination dated May 8, 1991.

OPERATING LOCATION

Located at Highway 231 North, Brooker, Bradford County, Florida

GENERAL CONDITIONS:

RELEVANT DOCUMENTS

The documents listed below are the basis of the permit. They are specifically related to this permitting action. These documents are on file with the Department:

Construction Application received December 28, 2005.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys not title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does no relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permitted to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

   a. Have access to and copy any record that must be kept under the conditions of the permit;

   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and

   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

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

GENERAL CONDITIONS:

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   a. a description of and cause of non-compliance; and

   b. the period of non-compliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

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

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

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
(X) Compliance with New Source Performance Standards (NSPS)

GENERAL CONDITIONS:

14. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurement;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

ESSENTIAL POTENTIAL TO EMIT (PTE) PARAMETERS

1. The I.D. No. and project name for this source shall be used on all correspondence.

2. **Hours of Operation (EU003 Engine No. 1607).** The hours of operation **are not** restricted 24 H/D; 7 D/W; 52 W/Y (8760 H/Y). Except for startup and shutdown, operation below 50% base load is prohibited.
[Rule 62-210.200(PTE), F.A.C.; Rules 62-4.070(3), F.A.C; Air Permit 0070012-004-AC]

EMISSION LIMITATIONS AND PERFORMANCE STANDARDS

3. Maximum Heat Input (EU003 Engine No. 1607). The maximum heat input (operating rate) is listed below and shall not be exceeded without prior Department approval:

Emission Unit	RATE	FUEL
EU003 Internal Combustion Engine No. 1607	68 MMBtu/hour **NOTE (1)**	Pipeline-quality Natural gas (**only**) **NOTE (2)**

NOTE (1) Engine manufacturer rated at 7,009 bhp based on a compressor inlet air temperature of 59 º F, 100% load, and a higher heating value (HHV) of 1040 BTU per SCF for natural gas. Heat input rates vary depending upon gas turbine characteristics, load, and ambient conditions.
NOTE (2) Percent sulfur is based on maximum Federal Regulatory Commission limit of 10 grains of sulfur per 100 standard cubic feet of natural gas and gas density of 0.0455 lb/scf.

4. Maximum Allowable Emission Rate (EU003 Engine No. 1607). The permitted maximum allowable emission rate is as Follows:

Pollutant	Emission Unit	Emission Rate		Emission Factor
		Lb/hr	Unit Tons/yr	
PM/PM_{10} **NOTE (1)**	EU003	0.45 **NOTE (2)**	2.0 **NOTE (2)**	0.0066 lb/MMBtu Avoid Rule 62-212.400, F.A.C.
SO_2		1.87	8.2	10 gr/100 scf **NOTE (3)**

NOTE (1) PM/PM_{10} emissions are minimized by good combustion design with the firing of natural gas as the exclusive fuel. **No testing required.**
NOTE (2) Good combustion practices
NOTE (3) FERC limit

{Permitting Note: This standard supersedes the previously specified permit limits for PM (TSP and PM_{10}) in all prior Air Construction and Title V Permits concerning EU003, as well as the outdated referenced emission factor. This does not result in any increases in actual or potential emissions of PM. Also this standard supersedes the previously specified permit limits for SO_2 in all prior Air Construction and Title V Permits concerning EU003}

[Permit Application dated December 28, 2005]

5. **40 CFR 60, Subpart GG.** Emissions Unit 003 is subject to the requirements of 40 CFR 60, Subpart GG (APPENDIX-C).

[40 CFR 60, Subpart GG- New Source Performance Standards for gas turbines, adopted by reference in Rule 62-204.800(7)(b), F.A.C.]

TESTING REQUIREMENTS

6. **Test Methods For NOx and SO_2 (EU003 Engine No. 1607).** Compliance with the NOx standards shall be determined by the following reference methods as described in 40 CFR 60, Appendix A and adopted by reference in Rule 62-297, F.A.C.:

Method 1-4	Sample and Velocity Traverse, flow rate, Gas analysis, and Moisture content
Method 9	Determination of the Opacity of the Emissions from Stationary Sources
	Method 10 Determination of Total Gaseous Nonmethane Organic Emissions as Carbon
Method 19	Determination of Sulfur Dioxide Removal efficiency and Particulate Matter, Sulfur Oxides Emission Rate) Optional F-factor method may be used to determine flow rate and gas analysis to calculate mass emissions in lieu of Methods 1-4).
Method 20	Determination of Nitrogen Oxides, Sulfur Dioxide and Diluent Emissions from Gas Turbines.
Method 7E, Method 3 or 3a	Test Methods for Determination of Nitrogen Oxides

[40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C.; Construction Permit 0070012-004-AC and 40 CFR 60, Subpart GG]

7. **Annual Testing (EU003 Engine No. 1607).** During each federal fiscal year (October 1st to September 30th) the gas turbine shall be tested to demonstrate compliance with the emission standards for SO_2 and NO_X.

[Rule 62-297.310(7)(a)4, F.A.C.; Air Permit No. 0070012-004-AC]

ADMINISTRATIVE

8. Any revision(s) to a permit (and application) must be submitted to the Department, in writing, and approved by the Department prior to implementation.

9. **New or Additional Conditions:** For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time.

[Rule 62-4.080(1), F.A.C.]

10. **Circumvention:** No person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly.

[Rule 62-210.650, F.A.C.]

11. **Malfunctions:** In case of excess emissions resulting from malfunctions, each owner or operator shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department.
[Rule 62-210.700(6), F.A.C.]

12. **Plant Operation – Problems:** If the permittee is temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by hazard of fire, wind or by other cause, the permittee shall immediately notify the Department. Notification shall include pertinent information as to the cause of the problem, and what steps are being taken to correct the problem and to prevent its recurrence, and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with Department rules.
[Rule 62-4.130, F.A.C.]

13. Issuance of a permit does not relieve the owner or operator of an emissions unit from complying with any applicable requirement, any emission limiting standards or other requirements of the air pollution rules of the Department or any other such requirements under federal, state or local law.
[Rule 62-210.300, F.A.C.]

Executed in Jacksonville, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Christopher L. Kirts, P.E.
District Air Program Administrator

APPENDIX C

NSPS SUBPART GG REQUIREMENTS FOR GAS TURBINES

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

EU ID	Emission Unit Description
003	Gas Turbine Compressor No. 1607

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

40 CFR 60, SUBPART GG
Standards of Performance for Stationary Gas Turbines

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

<u>40 CFR 60.330 - Applicability and Designation of Affected Facility.</u>

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

<u>40 CFR 60.331 – Definitions</u>

(g) *ISO standard day conditions* means 288 degrees Kelvin, 60 percent relative humidity and 101.3 kilopascals pressure.

(i) *Peak load* means 100 percent of the manufacturer's design capacity of the gas turbine at ISO standard day conditions.

(j) *Base load* means the load level at which a gas turbine is normally operated.

40 CFR 60.332 – Standard for Nitrogen Oxides

(a) On and after the date on which the performance test required by 60.8 is completed, every owner or operator subject to the provisions of this subpart as specified in paragraphs (c) of this section shall comply with:

(2) No owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any stationary gas turbine, any gases which contain nitrogen oxides in excess of:

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

where:
STD = allowable NO_X emission concentration (percent by volume at 15 percent oxygen and on a dry basis),

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

F = NOX emission allowance for fuel-bound nitrogen as defined in paragraph (a)(4) of this section.

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

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

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

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

{Permitting Note: The "Y" value for this gas is approximately 12.2 for natural gas. The equivalent emission standard is 177 ppmvd corrected to 15% oxygen. The emissions standards specified in this permit are much more stringent than this requirement.}

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

<u>40 CFR 60.333 - Standard for sulfur dioxide.</u>

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

(b) No owner or operator subject to the provisions of this subpart shall burn in any stationary gas turbine any fuel which contains total sulfur in excess of 0.8 percent by weight (8000 ppmw).

{Permitting Note: The gas turbines will exclusively fire natural gas, which contains less than 0.3% sulfur by weight assuming a density of 0.0455 lb/scf of natural gas.}

<u>40 CFR 60.334 - Monitoring of Operations.</u>

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

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

{Permitting Note: Excess NOx emissions reporting requirements do not apply. The gas turbine uses "dry" lean premix combustors and not wet injection to control NOx emissions. As indicated above, the Subpart GG NOx standard is 177 ppmvd @ 15% oxygen. This is nearly eight times the NOx standard specified in the permit and would be nearly impossible for this lean premix combustion turbine to exceed. As stated in the preamble to the July 2004 amendments, the rule changes do not impose any additional monitoring requirements for existing units.}

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

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

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

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

60.331(u) states, "Natural gas means a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions. Natural gas contains 20.0 grains or less of total sulfur per 100 standard cubic feet. Equivalents of this in other units are as follows: 0.068 weight percent total sulfur, 680 parts per million by weight (ppmw) total sulfur, and 338 parts per million by volume (ppmv) at 20 degrees Celsius total sulfur. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1100 British thermal units (Btu) per standard cubic foot. Natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value."

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

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

<u>40 CFR 60.335 - Test methods and Procedures.</u>

(a) To compute the nitrogen oxides emissions, the owner or operator shall use analytical methods and procedures that are accurate to within 5 percent and are approved by the Administrator to determine the nitrogen content of the fuel being fired.

(b) In conducting the performance tests required in Section 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided for in Section 60.8(b). Acceptable alternative methods and procedures are given in paragraph (f) of this section.

(c) The owner or operator shall determine compliance with the nitrogen oxides and sulfur dioxide standards in Sections 60.332 and 60.333(a) as follows:

(1) The nitrogen oxides emission rate (NOx) shall be computed for each run using the following equation:

$$NOx = (NOxo)\,(Pr/Po)^{0.5}\, e^{19(Ho - 0.00633)}\,(288°K/Ta)^{1.53}$$

where:

NOx = emission rate of NOx at 15 percent O2 and ISO standard ambient conditions, volume percent.

NOxo = observed NOx concentration, ppm by volume.

Pr = reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure, mm Hg.

Po = observed combustor inlet absolute pressure at test, mm Hg.

Ho = observed humidity of ambient air, g H2O/g air.

e = transcendental constant, 2.718.

Ta = ambient temperature, °K.

<u>Department Requirement</u>: The permittee is required to correct NOx emissions to ISO ambient atmospheric conditions for each required emissions performance test and compare to the NOx standard specified in 40 CFR 60.332.

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

Department Requirement: The initial NOx performance tests shall be conducted at approximately four evenly spaced points between the minimum normal operating load and 100% of peak load.

{Permitting Note: Although the dry low-NOx combustion controls are only effective above a minimum load of approximately 50%, the proposed gas turbines are able to quickly ramp up above this level. Gas turbines used as compressor engines typically operate at permitted capacity. Excluding startup and shutdown, the permit requires operation above 50% load. The minimum normal operating load will be identified during initial testing.}

(3) Method 20 shall be used to determine the nitrogen oxides, sulfur dioxide, and oxygen concentrations. The span values shall be 300 ppm of nitrogen oxide and 21 percent oxygen. The NOx emissions shall be determined at each of the load conditions specified in paragraph (c)(2) of this section.

Department Requirement: The span value shall be no greater than 75 ppm of nitrogen oxides due to the low NOx emission levels of the specified gas turbine.

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

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

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