



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

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PERMITTEE:

Southern Natural Gas Company, LLC
1001 Louisiana Street Suite 1000
Houston, Texas 77002

Air Permit Number: 0890442-001-AC
Date of Issue: February 20, 2015
Expiration Date: February 20, 2016

Authorized Representative:
Mr. Girish Misra, Pipeline System Engineer

Hilliard Florida Compressor Station
Initial Air Construction Permit

This is the final air construction permit, which authorizes the construction of a natural gas compressor station for Southern Natural Gas Company, LLC. The proposed new natural gas compressor station (Standard Industrial Classification No. 4922) will be located in Nassau County along the existing Southern Natural Gas (SNG) Cypress Line approximately 550 feet south of County Highway 108, and approximately 5 miles from Hilliard, Florida. The UTM coordinates are Zone 17, 408.4 km East and 3389.55 km North.

This final permit is organized by the following sections.

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

Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit.

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

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

Executed in Jacksonville, Florida



Richard S. Rachal III, P.G.
Permitting Program Administrator – Northeast District

FILING AND ACKNOWLEDGEMENT & CERTIFICATE OF SERVICE

Filed on this date pursuant to § 120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged. The undersigned hereby certifies that this construction permit and all copies were sent before the close of business on February 20, 2015 to the listed persons.



Clerk

February 20, 2015

Date

Girish Misra, Pipeline System Engineer, Kinder Morgan, Inc (Girish_Misra@kindermorgan.com)
Julianna Michna, P.E. Environmental Resources Management (julianna.duckworth@erm.com)

FACILITY AND PROJECT DESCRIPTION

Proposed Project

Southern Natural Gas Company, LLC (SNG) proposes to construct a new natural gas compressor station (Hilliard Compressor Station) in Nassau County along the existing SNG Cypress Pipeline. The proposed Hilliard Compressor Station will include one 4,700 bhp (under ISO conditions) natural gas fired turbine to boost the pressure of the incoming gas in the existing pipeline. To support the operation of the compressor station in the event of an electrical power failure, SNG also proposes to construct a natural gas fired 400 kW emergency generator as a part of the proposed compressor station and a small 0.4MMbtu/hr fuel gas heater which will be used to heat the natural gas withdrawn from the pipeline for use as fuel in the compressor turbine and emergency generator. The natural gas emergency generator will be operated for emergency electricity generation only in the event of normal power supply failure.

EU 001 Compressor Turbine

The 4,700 ISO bhp natural gas turbine compressor engine Model No. Centaur 40-4700S is manufactured by Solar Turbines. The gas turbine will fire pipeline natural gas at a maximum firing rate of approximately 43,122 cubic feet per hour based on a heat content of 1020 Btu per scf of gas.

Capacity: At a maximum of 44.0 MMBtu per hour of heat input, the gas turbine produces approximately 4700 bhp (ISO).

This turbine is subject to federal emission standards regulated under NSPS CFR 60, Subpart KKKK - New Source Performance Standards for Stationary Combustion Turbines.

Based on the application for construction received November 10, 2014, this facility is classified as natural minor source.

400kW Emergency Natural Gas Generator

The 400kW Emergency Natural Gas Generator is manufactured on or after January 1, 2009; therefore, is subject to 40 CFR 60 Subpart JJJJ. Pursuant to 40 CFR 63.6590(c), a new SI RICE at an area source must meet the requirements of 40 CFR 63 Subpart ZZZZ by meeting the requirements of 40 CFR 60 Subpart JJJJ.

Exempt Emissions Units

The 400kW Emergency Natural Gas Generator, and the 0.4 MMbtu/hr natural gas fired fuel gas heater are exempt from the requirements to obtain an air construction or non-Title V air operation permit.

[Rule 62-210.300(3), F.A.C]

This project will include the following emissions unit.

Facility ID No. 0890442	
<i>Regulated Emissions Unit</i>	
ID No.	Emissions Unit Description
001	Compressor Turbine

SECTION 1. GENERAL INFORMATION (FINAL)

<i>Exempt Emissions Units</i>	
	400kW Emergency Natural Gas Generator
	0.40 MMbtu/hr Fuel Gas Heater

FACILITY REGULATORY CLASSIFICATION

- The facility **is not** a major source of hazardous air pollutants (HAP).
- The facility **has no** units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility **is not** a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility **is not** a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.

SECTION 2. ADMINISTRATIVE REQUIREMENTS (FINAL)

1. Permitting Authority: The permitting authority for this project is the Northeast District Waste and Air Resource Management Program, Florida Department of Environmental Protection (Department). The Northeast District's mailing address is 8800 Baymeadows Way West, Suite 100, Jacksonville, Florida 32256. All documents related to applications for permits to operate an emissions unit shall be submitted to the Northeast District.
2. Compliance Authority: The compliance authority for this project is the Florida Department of Environmental Protection (Department), Northeast District Office, Compliance Assurance, 8800 Baymeadows Way West, Suite 100, Jacksonville, FL 32256. All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Northeast District Office, Compliance Assurance.
3. Appendices: The following Appendices are attached as part of this permit:
 - a. Appendix A. Citation Formats and Glossary of Common Terms;
 - b. Appendix B. General Conditions;
 - c. Appendix C. Common Conditions;
 - d. Appendix D. Common Testing Requirements.
 - e. Appendix E. NSPS 40 CFR 60 Subpart KKKK-Standard of Performance for Stationary Combustion Turbines
 - f. Appendix F. 40 CFR 60 Subpart A – General Provision.
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-256, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time.

[Rule 62-4.080, F.A.C.]
6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. No new emissions unit shall be constructed and no existing emissions unit shall be modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification.

[Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
7. Source Obligation:
 - (a) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4)

SECTION 2. ADMINISTRATIVE REQUIREMENTS (FINAL)

through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

- (b) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

[Rule 62-212.400(12), F.A.C.]

- 8. Application for Non - Title V Permit:** This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A completed Application for Air Permit - Non Title V Source (DEP Form No. 62-210.900(3), F.A.C.), shall be submitted to the Department at least 60 days prior to the expiration date of this construction permit. To properly apply for a operation permit, the permittee shall submit the appropriate application form, processing fee, and compliance test reports as required by this permit.

[Rule 62- 4.030, 62- 4. 050, 62-4. 055, and 62-4.220 F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (FINAL)

This section addresses the following emissions unit(s).

ID No.	Brief Description of Emissions Unit
001	4700 bhp Solar Centaur Combustion Turbine

One 4,700 bhp (under ISO conditions) natural gas fired turbine to boost the pressure of the incoming gas in the existing pipeline. The 4,700 ISO bhp natural gas turbine compressor engine Model No. Centaur 40-4700S is manufactured by Solar Turbines. The gas turbine will fire pipeline natural gas at a maximum firing rate of approximately 43,122 cubic feet per hour based on a heat content of 1020 Btu per scf of gas. The turbine will use a small amount of the natural gas from the pipeline as fuel.

{Permitting note: This emissions unit is regulated 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.; 40 CFR 60, Subpart KKKK - New Source Performance Standards for Stationary Combustion Turbines }

EQUIPMENT

- 1. New Solar Centaur 40 Combustion Turbine:** The permittee is authorized to install one 4700 bhp (under ISO conditions) natural gas fired combustion turbine. The permittee shall tune, operate and maintain the gas turbine's lean premix combustion system to reduce emissions of nitrogen oxides below the permitted limits. Ancillary equipment includes associated above-grade piping and valves, a suction scrubber, oil lube coolers, blowdown silencers, condensate storage tank, a fuel gas heater, a station transformer and associated electrical and mechanical systems.

[Application No. No. 0890442-001-AC]

PERFORMANCE RESTRICTIONS

- 2. Permitted Capacity:** The maximum heat input rate to the combustion turbine shall not exceed 44.0 MMBtu per hour while producing approximately 4700 bhp (under ISO conditions) based on a compressor inlet air temperature of 59° F, 100% load, and a higher heating value of 1020 Btu per scf of pipe-line quality natural gas. Heat input rates vary depending upon gas turbine characteristics, load, and ambient conditions. The permittee shall provide manufacturer's performance curves (or equations) that correct for site conditions to the Permitting and Compliance Authorities within 45 days of completing the initial testing. Performance data shall be adjusted for the appropriate site conditions in accordance with the performance curves and/or equations on file with the Department.

[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C., Application No. 0890442-001-AC]

- 3. Method of Operation. Authorized Fuel:** The combustion turbine shall fire only pipeline-quality natural gas.

[Rule 62-210.200(PTE), F.A.C. Application No. 0890442-001-AC]

- 4. Hours of Operation:** This emissions unit is allowed to operate continuously, i.e., 8,760 hours/year.

[Rule 62-210.200(PTE), F.A.C.; Rules 62-4.070(3), F.A.C]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (FINAL)

5. **Operational Data:** Using the automated gas turbine control system, the permittee shall monitor and record heat input (mmBTU), power output (bhp), and hours of operation for the gas turbine. If requested by the Department, the permittee shall be able to provide a summary of this information within at least ten days of such request.

[Rule 62-4.070(3), F.A.C.; Application No. 0890442-001-AC]

EMISSION LIMITATIONS AND STANDARDS

{Permitting Note: Unless otherwise specified, the averaging time for these conditions is based on the specified averaging time of the applicable test method.}

6. **Nitrogen Oxide Emissions (NO_x) Emission Limit:** The maximum allowable emission rate shall not exceed the emissions rate below as follows:

Turbine Type ^a	NOx Standards		Equivalent ^b Maximum Emissions		Combustion Turbine Heat Input at Peak Load (HHV)
	Limit	Units	Lb/hr	TPY	
New combustion turbine firing natural gas	100	ppm @ 15% O ₂ or 690 ng/j of useful output (5.5 lb/MWh)	4.05	17.7	≤ 50 MMBtu/hr

- a. Emission limit in Table 1 of 40 CFR 60 subpart KKKK that applies to the turbine must be met. The emission limit in the above table is for new turbines firing natural gas, mechanical drive. If the turbine is determined to be in a different subcategory, then limits in the correct subcategory of Table 1 would apply.
- b. Equivalent maximum hourly emission rates are the maximum expected emissions based on permitted capacity and a compressor inlet air temperature of 59° F. For comparison purposes, the permittee shall provide a reference table with the initial compliance test report of mass emission rates versus the compressor inlet temperatures. Each test report shall measure mass emission rates shall be compared to the equivalent maximum emissions above. For tests conducted below 59° F, measured mass emission rates shall be compared to the table mass emission rates provided by the manufacturer based on compressor inlet temperatures. Equivalent maximum annual emissions are based on 8760 hours of operation per year.

[40 CFR 60.4320(a) and Table 1 of 40 CFR 60 Subpart KKKK]

7. **Sulfur Dioxide Emissions (SO₂) Emission Limit:** The natural gas burned in the combustion turbine shall not contain total potential sulfur emissions in excess of 0.060 lb SO₂/MMBtu heat input. (2.64 lbs/hr, 11.56 tpy equivalent).

[40 CFR 60.4330(a)(2)]

COMPLIANCE DEMONSTRATION

- 8a. NO_x Initial Performance Test:** Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, the owner or operator shall conduct performance test(s), using the test method stated in **Specific Condition No. 11.**, to demonstrate initial compliance with the emission standards for NO_x, and furnish the Administrator a written report of the results of such performance test(s). Pursuant to Rule 62-297.310(2), F.A.C., permitted capacity is defined as 90% to 100% of the maximum operation rate (heat input rate) allowed by the permit. Pursuant to **Specific Condition No. 14**, the performance tests must be done at any load condition within plus or minus 25% of peak load.

[Rules 62-4.070(3), 62-297.310(7)(a)1, F.A.C, 40 CFR 60.4400(a), and 40 CFR 60.8]

- 8.b. NO_x Subsequent Performance Tests:** Subsequent NO_x performance tests shall be conducted on an annual basis (no more than 14 calendar months following the previous performance test).

[Rules 62-4.070(3), 62-297.310(7)(a)1, F.A.C , 40 CFR 60.4400(a), and 40 CFR 60.8]

- 9.a. Sulfur Initial Performance Test:** Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, the owner or operator shall conduct performance test(s), using the test method stated in **Specific Condition No. 16.**, to demonstrate initial compliance with the emission standards for SO₂, and furnish the Administrator a written report of the results of such performance test(s).

[Rules 62-4.070(3), 62-297.310(7)(a)1, F.A.C , 40 CFR 60.4415(a), and NSPS Subpart A 60.8]

- 9.b. Sulfur Subsequent Performance Tests:** Subsequent SO₂ performance tests shall be conducted on an annual basis (no more than 14 calendar months following the previous performance test).

[Rules 62-4.070(3), 62-297.310(7)(a)1, F.A.C , 40 CFR 60.4415(a), and NSPS Subpart A 60.8]

- 10. Test Requirements.** The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit and NSPS Subpart KKKK as applicable.

[Rule 62-297.310(7)(a)9, F.A.C. , 40 CFR 60.7, 60.8 and 60.4400]

TEST METHODS AND PROCEDURES

- 11. NO_x Performance Test:** The owner or operator may use either of the two general methodologies to conduct the performance tests.

Condition 11 continued:

For each test run:

- (i) Measure the NO_x concentration (in parts per million (ppm)), using EPA Method 7E or EPA Method 20 in appendix A of this part. For units complying with the output based standard, concurrently measure the stack gas flow rate, using EPA Methods 1 and 2 in appendix A of this part, and measure and record the electrical and thermal output from the unit. Then, use the following equation to calculate the NO_x emission rate:

$$E = \frac{1.194 \times 10^{-7} * (NO_x)_c * Q_{std}}{P} \quad (\text{Eq. 5})$$

Where:

E = NO_x emission rate, in lb/MWh

1.194 × 10⁻⁷ = conversion constant, in lb/dscf-ppm

(NO_x)_c = average NO_x concentration for the run, in ppm

Q_{std} = stack gas volumetric flow rate, in dscf/hr

P = gross electrical and mechanical energy output of the combustion turbine, in MW (for simple-cycle operation), for combined-cycle operation, the sum of all electrical and mechanical output from the combustion and steam turbines, or, for combined heat and power operation, the sum of all electrical and mechanical output from the combustion and steam turbines plus all useful recovered thermal output not used for additional electric or mechanical generation, in MW, calculated according to §60.4350(f)(2); or

- (ii) Measure the NO_x and diluent gas concentrations, using either EPA Methods 7E and 3A, or EPA Method 20 in appendix A of this part. Concurrently measure the heat input to the unit, using a fuel flowmeter (or flowmeters), and measure the electrical and thermal output of the unit. Use EPA Method 19 in appendix A of this part to calculate the NO_x emission rate in lb/MMBtu. Then, use Equations 1 and, if necessary, 2 and 3 in §60.4350(f) to calculate the NO_x emission rate in lb/MWh.

[40 CFR 60.4400(a)(1)]

- 12. **NO_x Traverse Points Sampling:** Sampling traverse points for NO_x and (if applicable) diluent gas are to be selected following EPA Method 20 or EPA Method 1 (non-particulate procedures), and sampled for equal time intervals. The sampling must be performed with a traversing single-hole probe, or, if feasible, with a stationary multi-hole probe that samples each of the points sequentially. Alternatively, a multi-hole probe designed and documented to sample equal volumes from each hole may be used to sample simultaneously at the required points.

[40 CFR 60.4400(a)(2)]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (FINAL)

13. Notwithstanding **Specific Condition 12** above, test may be conducted at fewer points than are specified in EPA Method 1 or EPA Method 20 in appendix A of this part if the following conditions are met:
- (i) A stratification test for NO_x and diluent is performed pursuant to
 - (A) [Reserved], or
 - (B) The procedures specified in section 6.5.6.1(a) through (e) of appendix A of part 75 of this subpart.
 - (ii). Once the stratification sampling is completed, the following alternative sample point selection criteria for the performance test may be used:
 - (A) If each of the individual traverse point NO_x concentrations is within ±10 percent of the mean concentration for all traverse points, or the individual traverse point diluent concentrations differs by no more than ±5ppm or ±0.5 percent CO₂ (or O₂) from the mean for all traverse points, then three points may be used (located either 16.7, 50.0 and 83.3 percent of the way across the stack or duct, or, for circular stacks or ducts greater than 2.4 meters (7.8 feet) in diameter, at 0.4, 1.2, and 2.0 meters from the wall). The three points must be located along the measurement line that exhibited the highest average NO_x concentration during the stratification test; or
 - (B) For turbines with a NO_x standard greater than 15 ppm @ 15% O₂, sample at a single point, located at least 1 meter from the stack wall or at the stack centroid if each of the individual traverse point NO_x concentrations is within ±5 percent of the mean concentration for all traverse points, or the individual traverse point diluent concentrations differs by no more than ±3ppm or ±0.3 percent CO₂ (or O₂) from the mean for all traverse points.
- [40 CFR 60.4400(a)(3)]
14. The performance test must be done at any load condition within plus or minus 25 percent of 100 percent of peak load. Testing may be performed at the highest achievable load point, if at least 75 percent of peak load cannot be achieved in practice. Three separate test runs must be conducted for each performance test. The minimum time per run is 20 minutes.
- (a) For a combined cycle and CHP turbine systems with supplemental heat (duct burner), the total NO_x emissions after the duct burner must be measured rather than directly after the turbine. The duct burner must be in operation during the performance test.
 - (b) N/A water or steam injection for NO_x control does not apply to this unit.
 - (c) Compliance with the applicable emission limit in **Specific Condition 6** must be demonstrated at each tested load level. Compliance is achieved if the three-run arithmetic average NO_x emission rate at each tested level meets the applicable emission limit.

Condition 14 continued:

(d) The ambient temperature must be greater than 0 °F during the performance test.

[40 CFR 60.4400(b) (2 (4)-(6))]

15. **Valid Parameter Range Establishment:** If the owner or operator elects to continuously monitor combustion parameters or parameters indicative of proper operation of NO_x emission controls in accordance with **Specific Condition No. 17**, the appropriate parameters must be continuously monitored and recorded during each run of the initial performance test, to establish acceptable operating ranges, for purposes of the parameter monitoring plan for the affected unit, as specified in **Specific Condition No. 22**.

[40 CFR 60.4410]

16. **SO₂ Performance Test:** The owner or operator may use either of the three general methodologies to conduct the performance tests.

(1) If the owner or operator chooses to periodically determine the sulfur content of the fuel combusted in the turbine, a representative fuel sample would be collected following ASTM D5287 (incorporated by reference, see §60.17) for natural gas. The fuel analyses may be performed either by the owner or operator, a service contractor, the fuel vendor, or any other qualified agency. The samples for the total sulfur content of the fuel should be analyzed using the following:

(i) For liquid fuels, ASTM D129, or alternatively D1266, D1552, D2622, D4294, or D5453 (all of which are incorporated by reference, see §60.17); or

(ii) For gaseous fuels, ASTM D1072, or alternatively D3246, D4084, D4468, D4810, D6228, D6667, or Gas Processors Association Standard 2377 (all of which are incorporated by reference, see §60.17).

(2) Measure the SO₂ concentration (in parts per million (ppm)), using EPA Methods 6, 6C, 8, or 20 in appendix A. In addition, the American Society of Mechanical Engineers (ASME) standard, ASME PTC 19-10-1981-Part 10, "Flue and Exhaust Gas Analyses," manual methods for sulfur dioxide (incorporated by reference, see §60.17) can be used instead of EPA Methods 6 or 20. For units complying with the output based standard, concurrently measure the stack gas flow rate, using EPA Methods 1 and 2 in appendix A of this part, and measure and record the electrical and thermal output from the unit. Then use the following equation to calculate the SO₂ emission rate:

$$E = \frac{1.664 \times 10^{-7} * (SO_2)_c * Q_{std}}{P} \quad (\text{Eq. 6})$$

Condition 16 continued:

Where:

E = SO₂ emission rate, in lb/MWh

1.664×10^{-7} = conversion constant, in lb/dscf-ppm

(SO₂)_c = average SO₂ concentration for the run, in ppm

Q_{std} = stack gas volumetric flow rate, in dscf/hr

P = gross electrical and mechanical energy output of the combustion turbine, in MW (for simple-cycle operation), for combined-cycle operation, the sum of all electrical and mechanical output from the combustion and steam turbines, or, for combined heat and power operation, the sum of all electrical and mechanical output from the combustion and steam turbines plus all useful recovered thermal output not used for additional electric or mechanical generation, in MW, calculated according to §60.4350(f)(2); or

(3) Measure the SO₂ and diluent gas concentrations, using either EPA Methods 6, 6C, or 8 and 3A, or 20 in appendix A of this part. In addition, you may use the manual methods for sulfur dioxide ASME PTC 19-10-1981-Part 10 (incorporated by reference, see §60.17). Concurrently measure the heat input to the unit, using a fuel flowmeter (or flowmeters), and measure the electrical and thermal output of the unit. Use EPA Method 19 in appendix A of this part to calculate the SO₂ emission rate in lb/MMBtu. Then, use Equations 1 and, if necessary, 2 and 3 in §60.4350(f) to calculate the SO₂ emission rate in lb/MWh.

(b) [Reserved]

[40 CFR 60.4415(a)(1)-(3)]

MONITORING REQUIREMENTS

17. **NO_x Continuous Compliance Demonstration:** Annual performance tests must be performed in accordance with **Specific Condition 11 through Specific Condition 14.** to demonstrate continuous compliance. If the NO_x emission result from the performance test is less than or equal to 75 percent of the NO_x emission limit for the turbine, the frequency of subsequent performance tests may be reduced to once every 2 years (no more than 26 calendar months following the previous performance test). If the results of any subsequent performance test exceed 75 percent of the NO_x emission limit for the turbine, the permittee must resume annual performance testing as specified in **Specific Condition No.8.b. .**

[40 CFR 60.4340(a)]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (FINAL)

18. Excess Emissions: For purposes of identifying excess emissions:

- (c) Correction of measured NO_x concentrations to 15 percent O₂ is not allowed.
- (d) **N/A** Affected unit is not required to meet the requirements of part 75
- (e) All required fuel flow rate, steam flow rate, temperature, pressure, and megawatt data must be reduced to hourly averages.
- (f) Calculate the hourly average NO_x emission rates, in units of the emission standards as specified in **Specific condition No. 6**, using either ppm for units complying with the concentration limit or the following equation for units complying with the output based standard:

For mechanical drive applications complying with the output-based standard, use the following equation:

$$E = \frac{(\text{NO}_x)_m}{\text{BL} * \text{AL}} \quad (\text{Eq. 4})$$

Where:

E = NO_x emission rate in lb/MWh,

(NO_x)_m = NO_x emission rate in lb/h,

BL = manufacturer's base load rating of turbine, in MW, and

AL = actual load as a percentage of the base load.

[40 CFR 60.4350]

19. Total Sulfur Content of the Turbine's Combustion Fuel: Except as stated in **Specific Condition No. 20** the total sulfur content of the fuel being fired in the turbine must be monitored as follows:

- (1) The sulfur content of the fuel must be determined using total sulfur methods described in **Specific Condition No. 16**.
- (2) Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than half the applicable limit, ASTM D4084, D4810, D5504, or D6228, or Gas Processors Association Standard 2377 (all of which are incorporated by reference, see §60.17), which measure the major sulfur compounds, may be used.

[40 CFR 60.4360]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (FINAL)

20. **Exemption from Monitoring the Total Sulfur Content of the Fuel:** The owner or operator may elect not to monitor the total sulfur content of the fuel combusted in the turbine, if the fuel is demonstrated not to exceed potential sulfur emissions as stated in **Specific Condition 7**. One of the following sources of information must be used to make the required demonstration:
- (a) The fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, specifying that the maximum total sulfur content for natural gas is 20 grains of sulfur or less per 100 standard cubic feet, has potential sulfur emissions of less than 26 ng SO₂/J (0.060 lb SO₂/MMBtu) heat input; or
 - (b) Representative fuel sampling data which show that the sulfur content of the fuel does not exceed 26 ng SO₂/J (0.060 lb SO₂/MMBtu) heat input. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to part 75 of this chapter is required.

[40 CFR 60.4365]

21. **Fuel Sulfur Content Determination Frequency:** The frequency of determining the sulfur content of the fuel must be as follows:
- (a) *Gaseous fuel.* If the owner or operator elects not to demonstrate sulfur content using options in **Specific Condition No. 20** above, and the fuel is supplied without intermediate bulk storage, the sulfur content value of the gaseous fuel must be determined and recorded once per unit operating day.
 - (b) *Custom schedules.* Notwithstanding the requirements of paragraph (a) of this condition, operators or fuel vendors may develop custom schedules for determination of the total sulfur content of gaseous fuels, based on the design and operation of the affected facility and the characteristics of the fuel supply. Except as provided in paragraphs (b)(1) and (b)(2) of this condition, custom schedules shall be substantiated with data and shall be approved by the Administrator before they can be used to comply with the standard in **Specific Condition No.7**
 - (1) The two custom sulfur monitoring schedules set forth in paragraphs (b)(1)(i) through (iv) and in paragraph (b)(2) of this condition are acceptable, without prior Administrative approval:
 - (i) The owner or operator shall obtain daily total sulfur content measurements for 30 consecutive unit operating days, using the applicable methods specified in this subpart. Based on the results of the 30 daily samples, the required frequency for subsequent monitoring of the fuel's total sulfur content shall be as specified in paragraph (b)(1)(ii), (iii), or (iv) of this condition, as applicable.

Condition 21 continued:

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (FINAL)

- (ii) If none of the 30 daily measurements of the fuel's total sulfur content exceeds half the applicable standard, subsequent sulfur content monitoring may be performed at 12-month intervals. If any of the samples taken at 12-month intervals has a total sulfur content greater than half but less than the applicable limit, follow the procedures in paragraph (b)(1)(iii) of this condition. If any measurement exceeds the applicable limit, follow the procedures in paragraph (c)(1)(iv) of this condition.
 - (iii) If at least one of the 30 daily measurements of the fuel's total sulfur content is greater than half but less than the applicable limit, but none exceeds the applicable limit, then:
 - (A) Collect and analyze a sample every 30 days for 3 months. If any sulfur content measurement exceeds the applicable limit, follow the procedures in paragraph (b)(1)(iv) of this condition. Otherwise, follow the procedures in paragraph (b)(1)(iii)(B) of this condition.
 - (B) Begin monitoring at 6-month intervals for 12 months. If any sulfur content measurement exceeds the applicable limit, follow the procedures in paragraph (b)(1)(iv) of this section. Otherwise, follow the procedures in paragraph (b)(1)(iii)(C) of this condition.
 - (C) Begin monitoring at 12-month intervals. If any sulfur content measurement exceeds the applicable limit, follow the procedures in paragraph (b)(1)(iv) of this condition. Otherwise, continue to monitor at this frequency.
 - (iv) If a sulfur content measurement exceeds the applicable limit, immediately begin daily monitoring according to paragraph (b)(1)(i) of this condition. Daily monitoring shall continue until 30 consecutive daily samples, each having a sulfur content no greater than the applicable limit, are obtained. At that point, the applicable procedures of paragraph (b)(1)(ii) or (iii) of this condition shall be followed.
- (2) The owner or operator may use the data collected from the 720-hour sulfur sampling demonstration described in section 2.3.6 of appendix D to part 75 of this chapter to determine a custom sulfur sampling schedule, as follows:
- (i) If the maximum fuel sulfur content obtained from the 720 hourly samples does not exceed 20 grains/100 scf, no additional monitoring of the sulfur content of the gas is required.
 - (ii) If the maximum fuel sulfur content obtained from any of the 720 hourly samples exceeds 20 grains/100 scf, but none of the sulfur content values (when converted to weight percent sulfur) exceeds half the applicable limit, then the minimum required sampling frequency shall be one sample at 12 month intervals.

Condition 21 continued:

- (iii) If any sample result exceeds half the applicable limit, but none exceeds the applicable limit, follow the provisions of paragraph (b)(1)(iii) of this condition.
- (iv) If the sulfur content of any of the 720 hourly samples exceeds the applicable limit, follow the provisions of paragraph (b)(1)(iv) of this condition.

[40 CFR 60.4370 (b) & (c)]

22. Monitoring Plan: The parameters that are continuously monitored as described in **Specific Condition No. 17** must be monitored during the performance test required under §60.8, to establish acceptable values and ranges. The owner or operator may supplement the performance test data with engineering analyses, design specifications, manufacturer's recommendations and other relevant information to define the acceptable parametric ranges more precisely. The owner or operator must develop and keep on-site a parameter monitoring plan which explains the procedures used to document proper operation of the NO_x emission controls. The plan must:

- (1) Include the indicators to be monitored and show there is a significant relationship to emissions and proper operation of the NO_x emission controls,
- (2) Pick ranges (or designated conditions) of the indicators, or describe the process by which such range (or designated condition) will be established,
- (3) Explain the process that will be used to make certain that data obtained are representative of the emissions or parameters being monitored (such as detector location, installation specification if applicable),
- (4) Describe quality assurance and control practices that are adequate to ensure the continuing validity of the data,
- (5) Describe the frequency of monitoring and the data collection procedures that will be used (e.g., you are using a computerized data acquisition over a number of discrete data points with the average (or maximum value) being used for purposes of determining whether an exceedance has occurred), and
- (6) Submit justification for the proposed elements of the monitoring. If a proposed performance specification differs from manufacturer recommendation, the owner or operator must explain the reasons for the differences. The owner or operator must submit the data supporting the justification, the owner or operator may refer to generally available sources of information used to support the justification. Engineering assessments and other data, may be relied upon provided factors which assure compliance or explain why performance testing is unnecessary to establish indicator ranges is demonstrated. When establishing indicator ranges, the owner or operator may choose to simplify the process by treating the parameters as if they were correlated. Using this assumption, testing can be divided into two cases:

Condition 22. Continued:

- (i) All indicators are significant only on one end of range (e.g., for a thermal incinerator controlling volatile organic compounds (VOC) it is only important to insure a minimum temperature, not a maximum). In this case, you may conduct your study so that each parameter is at the significant limit of its range while you conduct your emissions testing. If the emissions tests show that the source is in compliance at the significant limit of each parameter, then as long as each parameter is within its limit, the facility is presumed to be in compliance.
- (ii) Some or all indicators are significant on both ends of the range. In this case, the owner or operator may conduct study so that each parameter that is significant at both ends of its range assumes its extreme values in all possible combinations of the extreme values (either single or double) of all of the other parameters. For example, if there were only two parameters, A and B, and A had a range of values while B had only a minimum value, the combinations would be A high with B minimum and A low with B minimum. If both A and B had a range, the combinations would be A high and B high, A low and B low, A high and B low, A low and B high. For the case of four parameters all having a range, there are 16 possible combinations.
- (b) N/A not subject to part 75

[40 CFR 60.4355]

GOOD AIR POLLUTION CONTROL PRACTICES

- 23. The owner or operator must operate and maintain the stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

[40 CFR 60.4333]

REPORTING, RECORDKEEPING AND NOTIFICATION REQUIREMENTS

- 24. **Performance Test Report (NO_x):** A written report of the results of all performance test (s) in accordance with **Specific Condition No. 17.** must be submitted to the Air Compliance Section of this Office as soon as practical but no later than 45 days after the last sampling run of each test is completed. The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. For each test run, the report shall identify the natural gas firing rate (cubic feet per hour), the heat input rate (MMbtu per hour), the power output (bhp), the percent of base load, and the compressor inlet temperature

[Rule 62-297.310(8), F.A.C., 40 CFR 60.4375(b) and; 40 CFR 60.8]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (FINAL)

25. **Reporting Excess Emissions and Monitoring Downtime:** The owner or operator shall submit reports of excess emissions and monitor downtime, in accordance with §60.7(c). Excess emissions must be reported for all periods of unit operation, including start-up, shutdown, and malfunction.

[40 CFR 60.4375(a), 40 CFR 60.4380, 40 CFR 60.4385 and 40 CFR 60.7]

26. **Report Submittal:** All reports required under **Specific Condition No. 25** must be postmarked by the 30th day following the end of each 6-month period.

[40 CFR 60.4395]

27. The permittee shall comply with the applicable reporting requirements of 40 CFR Part 60, Subpart A – General Provisions.

[40 CFR 60.1 (a)]

28. **Record keeping:** All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request.

[Rule 62-4.160(14) and 62-4.070, F.A.C.]

29. **Notification of Date of Construction:** The owner or operator shall submit to the Air Compliance Authority written or electronic notification of the date of commencement of construction. This notification shall be postmarked no later than 30 days after such date.

[Rule 62-4.070(3), F.A.C. and 40 CFR 60.7]

30. **Initial Startup Date Notification:** The owner or operator shall notify the Air Compliance Authority written or electronic notification of the actual date of initial startup of the facility postmarked within 15 days after such date

[40 CFR 60.7]

31. **Component Replacements:** For the replacement of gas turbine components to facilitate prompt repair and return the unit to its original specifications, the permittee shall comply with the following notification and testing requirements.

- a) Components shall only be replaced with functionally equivalent “like-kind” equipment. Replacement components may consist of improved or newer equipment, but such components shall not change operation or increase the capacity (heat input and power output rates) of the gas turbine. Replacement components that affect emissions shall be designed to achieve the emissions standards specified in all valid air permits and shall achieve these standards or better. After a component replacement, the gas turbine compressor engine remains subject to all applicable standards.

[62-4.070(3), F.A.C.]

Condition 31 continued:

- b) The permittee shall notify the Compliance Authority within seven days after beginning any replacement of the gas generator component of the compressor engine. Within seven days of first fire on a replacement gas generator, the permittee shall submit the following information to the Compliance Authority: date of first fire and certification from the vendor that the replacement gas generator is a functionally equivalent “like-kind” component. The vendor certification shall also identify the make, model number, maximum heat input rate (MMbtu/hour), power output (bhp) at ISO conditions, and that the permitted emission rates are achievable with the replacement component. This notification may be made by letter, fax or email. A copy of the information shall be kept on site at the compressor station. Within 60 days of restarting the unit after a gas generator replacement, the permittee shall conduct stack tests to demonstrate compliance with the applicable emission standards. The permittee shall notify the Compliance Authority in writing at least 15 days prior to conducting these tests. The permittee shall comply with all permit requirements for test notification, test methods, test procedures, and reporting.

[Rules 62-4.130, 62-4.160(2),(6), and (15) and 62-297.310(7)(b), F.A.C.]

- c) After investigation and for good cause, the Department may require special compliance tests pursuant to Rule 62-297.310(7)(b), F.A.C.

[Rule 62-297.310(7)(b), F.A.C.]