Florida Gas Transmission Company
Compressor Station 24
Facility ID No. 0410004
Gilchrist County

Initial Title V Air Operation Permit

Permit No. 0410004-017-AV

Permitting & Compliance Authority:

State of Florida
Department of Environmental Protection
Air Resource Management, Northeast District
7825 Baymeadows Way, Suite 200B
Jacksonville, Florida 32256-7590
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Table of Contents

Section **Page Number**

I. Facility Information.
A. Facility Description. 2
B. Summary of Emissions Units. 2
C. Applicable Regulations. 2

II. Facility-wide Conditions. 3

III. Emissions Units and Conditions.
A. EU001 Gas Turbine No. 2401. 5
EU003 Gas Turbine No. 2402
EU004 Gas Turbine No. 2403
B. Emergency Generators..... 11

IV. Appendices. 20
Appendix A, Glossary.
Appendix I, List of Insignificant Emissions Units and/or Activities.
Appendix NSPS, Subpart A – General Provisions.
Appendix NSPS, Subpart GG.
Appendix NSPS, Subpart KKKK.
Appendix RR, Facility-wide Reporting Requirements.
Appendix TR, Facility-wide Testing Requirements.
Appendix TV, Title V General Conditions.
Appendix U, List of Unregulated Emissions Units and/or Activities.

Referenced Attachments. ..... At End
Figure 1, Summary Report-Gaseous and Opacity Excess Emission and Monitoring System Performance (40 CFR 60, July, 1996).
Table H, Permit History.
Table 1, Summary of Air Pollutant Standards and Terms.
Table 2, Compliance Requirements.

DRAFT/PROPOSED PERMIT

PERMITTEE:
Florida Gas Transmission Company
2405 Lucien Way, Suite 200
Maitland, Florida 32751-7047

Permit No. 0410004-017-AV
Compressor Station 24
Facility Id No. 0410004

Initial Title V Air Operation Permit

The purpose of this permit is for the initial Title V air operation permit for the above referenced facility and to incorporate Construction Permit Nos. 0410004-016-AC and 0410004-018-AC. The existing Compressor Station 24 is located in Gilchrist County near Trenton at 5030 North U.S. Highway 129 in Trenton, Florida. UTM Coordinates are: Zone 17, 321.3 km East, and 3282.8km North.

The Title V air operation permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, 62-213. The above named permittee is hereby authorized to operate the facility in accordance with the terms and conditions of this permit.

Effective Date: DATE, 20xx
Renewal Application Due Date: Exp. DATE -225, 20xx
Expiration Date: Eff. DATE + 5 years, 20xx

(Draft/Proposed)

_____

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

CLK:lm

Subsection A. Facility Description.

Florida Gas Transmission Company (FGTC) operates existing Compressor Station 24 in Gilchrist County for their natural gas pipeline. The station currently consists of a 15,000 bhp gas turbine (Engine 2401), a 7222 bhp gas turbine (Engine 2402), a 20,500 hp gas turbine (Engine2403), Two Emergency Generators GEN04 and GEN05, and miscellaneous support activities.

Subsection B. Summary of Emissions Units.

EU No.	Brief Description
Regulated Emissions Units	
001	Engine 2401: Solar Model Mars 100-T15000S gas turbine rated at 15,000 bhp
003	Engine 2402: Cooper-Rolls Model No. 501-KC7-DLE gas turbine rated at 7,200 bhp (ISO)
004	Engine 2403: Solar Model Titan 130-20502SA gas turbine rated at 20,500 hp
005	GEN04 and GEN05: Two Emergency Generators (454-hp natural gas-fired, spark ignition (SI), four stroke rich burn (4SRB) Reciprocating internal combustion engines (RICE)
Unregulated Emissions Units and Activities	
002	Miscellaneous support activities

Subsection C. Applicable Regulations.

Based on the initial Title V air operation permit application received June 2, 2011, this facility is not a major source of hazardous air pollutants (HAP). Because this facility operates stationary reciprocating internal combustion engines, it is subject to regulation under 40 CFR 63, Subpart ZZZZ, - National Emissions Standards For Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines. *Stationary RICE subject to Regulations under 40 CFR Part 60.* An affected source that meets any of the criteria in paragraphs 40 CFR 60.6590(c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.

The existing facility is not PSD major source of air pollutants in accordance with Rule 62-212.400, F.A.C. A summary of applicable regulations is shown in the following table.

Regulation	EU No(s).
40 CFR 60, Subpart A, NSPS General Provisions	EU001, 003 & EU004
40 CFR 60, Subpart GG	EU003
40 CFR 60, Subpart KKKK	EU001 & EU004
40 CFR 60, Subpart JJJJ	EU005
State Rule Citations (Rule 62-296; 62-297.310(7); Rule 62-212.400(12), F.A.C.)	EU001, 003 & EU004

The following conditions apply facility-wide to all emission units and activities:

FW1. Appendices. The permittee shall comply with all documents identified in Section IV, Appendices, listed in the Table of Contents. Each document is an enforceable part of this permit unless otherwise indicated. [Rule 62-213.440, F.A.C.]

Emissions and Controls

FW2. Not federally Enforceable. Objectionable Odor Prohibited. No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rule 62-296.320(2) and 62-210.200(Definitions), F.A.C.]

FW3. General Volatile Organic Compounds (VOC) Emissions or Organic Solvents (OS) Emissions. The permittee shall allow no person to store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed-necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]

{Permitting Note: Nothing is deemed necessary and ordered at this time.}

FW4. General Visible Emissions. No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20% opacity. EPA Method 9 is the method of compliance pursuant to Chapter 62-297, F.A.C. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]

FW5. Unconfined Particulate Matter. No person shall cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any activity, including vehicular movement; transportation of materials; construction; alteration; demolition or wrecking; or industrially related activities such as loading, unloading, storing or handling; without taking reasonable precautions to prevent such emissions. Reasonable precautions to prevent emissions of unconfined particulate matter at this facility include:

a. Vehicular traffic on paved and unpaved roads.
b. Wind-blown dust from yard areas.
c. Periodic abrasive blasting

The following techniques may be used to control unconfined PM emissions on an as-needed basis:

a. Paving and maintenance of roads, parking areas, and yards.
b. Chemical (dust suppressants) or water application to:

- Unpaved roads
- Unpaved yard areas

c. Landscaping or planting of vegetation
d. Confining abrasive blasting where possible.
e. Other techniques, as necessary.

[Rule 62-296.320(4)(c), F.A.C.; and, proposed by applicant in Title V air operation permit application received June 2, 2011.]

Annual Reports and Fees

See Appendix RR, Facility-wide Reporting Requirements for additional details.

FW6. Annual Operating Report. The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by April 1st of each year. [Rule 62-210.370(3), F.A.C.]

FW7. Annual Emissions Fee Form and Fee. The annual Title V emissions fees are due (postmarked) by March 1st of each year. The completed form and calculated fee shall be submitted to: Major Air Pollution Source Annual Emissions Fee, P.O. Box 3070, Tallahassee, Florida 32315-3070. The forms are available for download by accessing the Title V Annual Emissions Fee On-line Information Center at the following Internet web site: http://www.dep.state.fl.us/air/emission/tvfee.htm. [Rule 62-213.205, F.A.C.]

FW8. Annual Statement of Compliance. The permittee shall submit an annual statement of compliance to the compliance authority at the address shown on the cover of this permit within 60 days after the end of each calendar year during which the Title V permit was effective. [Rules 62-213.440(3)(a)2. & 3. and (3)(b), F.A.C.]

FW9. Prevention of Accidental Releases (Section 112(r) of CAA). If and when the facility becomes subject to 112(r), the permittee shall:

a. Submit its Risk Management Plan (RMP) to the Chemical Emergency Preparedness and Prevention Office (CEPPO) RMP Reporting Center. Any Risk Management Plans, original submittals, revisions or updates to submittals, should be sent to: RMP Reporting Center, Post Office Box 10162, Fairfax, VA 22038, Telephone: (703) 227-7650.

b. Submit to the permitting authority Title V certification forms or a compliance schedule in accordance with Rule 62-213.440(2), F.A.C.

[40 CFR 68]

Subsection A

The specific conditions in this section apply to the following emissions unit(s):

EU No.	Brief Description
001	Engine 2401: Solar Model Mars 100-T15000S gas turbine rated at 15,000 bhp Gas Turbine No. 2401. 132.3 MMBtu per hour. *Fuel*: The combustion turbine will fire approximately 127,300 cubic feet per hour of pipeline natural gas (SCC No 2-02-002-01) at maximum permitted capacity. *Capacity*: At 132.3 per hour of heat input, the combustion turbine produces approximately 15,000 bhp. After initial startup, the unit is intended to operate at or near capacity. *Controls*: Natural gas contains little or no ash, sulfur, or other contaminants, which minimizes emissions of particulate matter and sulfur dioxide. The efficient combustion of natural gas at high temperatures results in lower emissions of carbon monoxide and volatile organic compounds. Lean premix combustion technology will minimize the formation of nitrogen oxides. *Stack Parameters*: When operating at capacity, exhaust gases will exit a 58 feet tall stack that is 8.7 feet in diameter with a flow rate of approximately 193,613 acfm at 903° F.
003	Engine 2402: Cooper-Rolls Model No. 501-KC7-DLE gas turbine rated at 7,200 bhp (ISO) Gas Turbine No. 2402. 68 MMBtu per hour. *Fuel*: The combustion turbine will fire approximately 65,400 cubic feet per hour of pipeline natural gas (SCC No 2-02-002-01) at maximum permitted capacity. *Capacity*: At 68 MMBtu per hour of heat input, the combustion turbine produces approximately 7,200 bhp. After initial startup, the unit is intended to operate at or near capacity. *Controls*: Natural gas contains little or no ash, sulfur, or other contaminants, which minimizes emissions of particulate matter and sulfur dioxide. The efficient combustion of natural gas at high temperatures results in lower emissions of carbon monoxide and volatile organic compounds. Lean premix combustion technology will minimize the formation of nitrogen oxides. *Stack Parameters*: When operating at capacity, exhaust gases will exit a 63 feet tall stack that is 6 feet in diameter with a flow rate of approximately 90,285 acfm at 920° F.
004	Engine 2403: Solar Model Titan 130-20502SA gas turbine rated at 20,500 hp Gas Turbine No. 2403. 174.5 MMBtu per hour. *Fuel*: The combustion turbine will fire approximately 167,800 cubic feet per hour of pipeline natural gas (SCC No 2-02-002-01) at maximum permitted capacity. *Capacity*: At 174.5 MMBtu per hour of heat input, the combustion turbine produces approximately 20,500 bhp. After initial startup, the unit is intended to operate at or near capacity. *Controls*: Natural gas contains little or no ash, sulfur, or other contaminants, which minimizes emissions of particulate matter and sulfur dioxide. The efficient combustion of natural gas at high temperatures results in lower emissions of carbon monoxide and volatile organic compounds. Lean premix combustion technology will minimize the formation of nitrogen oxides. *Stack Parameters*: When operating at capacity, exhaust gases will exit a 55 feet tall stack that is 7.5 feet x 8 feet in diameter with a flow rate of approximately 232,782 acfm at 944° F.

{Permitting Note REGULATIONS: EU001 & 004 are subject to 40 CFR 60, Subpart KKKK -Standards of Performance for Stationary Combustion Turbines and 40 CFR 60, Subpart A– General Provisions. Emissions Units 003 & 004 shall comply with the New Source Performance Standards (NSPS) of Subpart GG in 40 CFR 60. }

Essential Potential to Emit (PTE) Parameters

A.1. **Permitted Capacity**. The maximum allowable heat input rate is as follows:

EU No.	MMBtu/hr Heat Input (or other regulated capacity)	Fuel Type
001	132.3 HHV **NOTE (1)**	Natural Gas
003	68 HHV **NOTE (2)**	
004	174.5 HHV **NOTE (3)**	

NOTE (1) Maximum Heat Input Rate is based on gas turbine output power of 15,000 hp, heat rate of 8,403 Btu/hp-hr, HHV at ISO conditions (i.e., 59^0 F, 50% relative humidity, and one atmosphere pressure), natural gas heat content of (1040 BTU/scf) HHV, and a 5% margin for measurement variability. Heat input rate will vary with gas turbine characteristics, load and ambient conditions.

NOTE (2) Maximum Heat Input Rate is based on gas turbine output power of 7,200 bhp, heat rate of 8,995 Btu/hp-hr, HHV at ISO conditions (i.e., 59^0 F, 50% relative humidity, and one atmosphere pressure), natural gas heat content of (1040 BTU/scf) HHV, and a 5% margin for measurement variability. Heat input rate will vary with gas turbine characteristics, load and ambient conditions.

NOTE (3) Maximum Heat Input Rate is based on gas turbine output power of 20,500 bhp, heat rate of 8,105 Btu/hp-hr, HHV at ISO conditions (i.e., 59^0 F, 50% relative humidity, and one atmosphere pressure), natural gas heat content of (1040 BTU/scf) HHV, and a 5% margin for measurement variability. Heat input rate will vary with gas turbine characteristics, load and ambient conditions.

[Rules 62-4.160(2), 62-204.800, 62-210.200(PTE), F.A.C.; and, Permit No(s). 0410004-018-AC]

A.2. **Authorized Fuel**. The combustion turbine shall fire only natural gas with a maximum sulfur content of 10 grains per 100 standard cubic feet of natural gas.

[Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.; and NSPS Subpart KKKK in 40 CFR 60]

A.3.a. **Hours on Operation EU001).** The hours of operation of the combustion turbine are not restricted (8760 hours per year).

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

A.3.b. **Restricted Operation (EU004)**. The hours of operation of the combustion turbine are not restricted (8760 hours per year). Except for startup and shutdown, operation below 50% base load is prohibited.

[Rules 62-4.070(3), 62-210.200(PTE), F.A.C., and Air Construction Permit No. 0410004-016-AC]

Emission Limitations and Standards

{Permitting Note: The attached Table 1, Summary of Air Pollutant Standards, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}

Unless otherwise specified, the averaging time(s) for **Specific ConditionA.4.** is based on the specified averaging time of the applicable test method.

A.4. The permitted maximum allowable emission rate for each pollutant is as follows:

Pollutant	Standards	Equivalent Maximum Emissions [6]						Rule Basis
		Engine 2401		Engine 2402		Engine 2403		
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	
CO [1]	50.0 ppmvd @ 15% O_2 25.0 ppmvd @ 15% O_2 Not Applicable	16.0	70.2	7.0	30.5	9.5	41.7	Rule 62-4.070(3), F.A.C. Rule 62-212.400(12), F.A.C
NO_x [2]	25.0 ppmvd @ 15% O_2 15.0 ppmvd @ 15% O_2	13.2 ---	57.7 ---			--- 9.4	--- 41.1	Rule 62-4.070(3), F.A.C. 40 CFR 60.332
	15.0 ppmvd @ 15% O_2 25.0 ppmvd @ 15% O_2	---	---	5.7	25.0			Rule 62-212.400(12), F.A.C 40 CFR 60.4320 40 CFR 60.332
SO2 [3] EU001	≤110 nanograms per Joule (ng/J) (0.90 pounds per megawatt-hour (lb/MWh)) gross output, or ≤ 26 ng SO2/J (0.060 lb SO2/MMBtu) heat input.							Rule 62-4.070(3), F.A.C. 40 CFR 60.4330(a)(1) and (2)
SO2 [3] EU004	10 grains of sulfur/100 scf		15.9	1.9	8.2	4.8	21.0	Rule 62-4.070(3), F.A.C.
	0.060 lb SO_2/MMBtu					---	---	CFR 60.4330
Opacity [5] EU001, 003 & EU004	10% opacity, 6-minute average	Not Applicable						Rule 62-4.070(3), F.A.C.
PM/PM_{10} [4]	Lean premix combustion design		3.8	0.45	2.0		5.0	Rule 62-4.070(3), F.A.C.
VOC [4]	Lean premix combustion design		2.0	1.5	6.5		2.4	Rule 62-4.070(3), F.A.C.

[1] The CO standards are based on the average of three test runs as determined by EPA Method 10.
[2] The NO_x standards are based on the average of three test runs as determined by EPA Method 7E.
[3] EU001, 003 and EU004: Maximum SO_2 standards are based on the maximum level specified by Federal Energy Regulatory Commission (FERC), which is 10 grains of sulfur per 100 standard cubic feet of natural gas. Actual fuel sulfur levels are expected to be less than 1 grain per 100 SCF of natural gas.

Specific Condition No. A.4 continued:

[4] For both PM and VOC, the efficient combustion of clean fuels is indicated by compliance with opacity and CO standards. Equivalent maximum PM emissions were based on data in Table 3.1-2a in AP-42. Regulated VOC emissions were conservatively assumed to be 10% of the manufacturer's estimated emissions for total hydrocarbons. No testing required.

[5] The opacity standard is based on a 6-minute block average, as determined by EPA Method 9. The opacity standard serves as a surrogate standard to show efficient combustion.
{Permitting Note: This standard is established as reasonable assurance of good combustion practices to minimize emissions.}

[6] Equivalent maximum emissions for each gas turbine are based on: permitted capacity, a turbine inlet air temperature of 45° F, full operation (8760 hours per year), and the permit standards (CO, NOx, and SO2) or the maximum expected emissions (PM and VOC). For comparison purposes, the permittee shall provide a reference table with the initial compliance test report of mass emission rates versus the turbine inlet temperatures. Each test report shall include measured mass emission rates for CO, NOx and SO2. Mass emission rates for SO2 shall be calculated based on actual fuel sulfur content and fuel flow rate. For tests conducted at 45° F or greater, measured mass emission rates shall be compared to the equivalent maximum emissions above. For tests conducted below 45° F, measured mass emission rates shall be compared to the tabled mass emission rates provided by the manufacturer based on turbine inlet temperatures.

[Rule 62-212.400(12) F.A.C. and Air Construction Permit No. 0410004-018-AC]

TESTING REQUIREMENTS

A.5. <u>Annual Compliance Tests</u>. During each federal fiscal year (October 1 - September 30), the combustion turbines s shall be tested to demonstrate compliance with the emission standards for CO, NO_X, and visible emissions. If the turbine's NOx emissions exceed 75% of the applicable NSPS NO_X standard on the previous performance test, the subsequent compliance test shall be conducted no more than 14 calendar months following the previous performance test. CO and NO_X emissions shall be tested concurrently at permitted capacity. Actual SO_2 emissions shall be reported based on the current typical fuel sulfur content and actual natural gas firing rate for each test run.

[Rules 62-4.070(3) and 62-297.310(7)(a)4, F.A.C.; 40 CFR 60.4400 and Air Construction Permit No. 410004-016-AC]

A.6. <u>Test Methods</u>. Required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content (These methods shall be conducted as necessary to support the other test methods.)
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources (This method shall be based on a continuous sampling train.)

A.6. continued:

19	Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxides Emission Rates (Optional F-factor method may be used to determine flow rate and gas analysis to calculate mass emissions in lieu of Methods 1-4.)
20	Determination of Nitrogen Oxides, Sulfur Dioxide and Diluent Emissions from Combustion Turbines

The above methods are described in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rules 62-204.800 and 62-297.100, F.A.C.; and Appendix A of 40 CFR 60]

A.7. <u>Operational Data (EU004)</u>. Using the automated combustion turbine control system, the permittee shall monitor and record heat input (MMBtu), power output (bhp) and hours of operation for the combustion turbine. Operational information shall be summarized and reported with the required Annual Operating Report.

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

A.8. <u>Component Replacements</u>. For the replacement of combustion 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 combustion 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 combustion turbine compressor engine remains subject to the standards of all valid air permits. [Rule 62-210.200(169), F.A.C.]

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

A.8. continued:

If the proposed test schedule must be changed due to valid issues with equipment shakedown or test team schedules, the Compliance Authority may accept a shorter notice. 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.

A.9. **Excess Emissions Allowed**: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration..
[Rule 62-210.700(1), F.A.C]

A.10. **Excess Emissions Prohibited**: Excess emission caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited.
[Rule 62-210.700(4), F.A.C]

A.11. **Excess Emissions Notification**: In case of excess emissions resulting from malfunctions, the permitee shall notify the Department 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

A.12. **Common Testing Requirements**. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit.

[Rule 62-297.310, F.A.C.]

Subsection B.

The specific conditions in this section apply to the following emissions unit(s):

EU No.	Brief Description
005	GEN04 and GEN05: Two Emergency Generators (454-hp natural gas-fired, spark ignition (SI), four stroke rich burn (4SRB) Reciprocating internal combustion engines (RICE)

{Permitting Note REGULATIONS: EU005 is subject to 40 CFR 60, Subpart JJJJ—Standards of Performance for Stationary Spark Ignition Internal Combustion Engines, 40 CFR 60 NSPS Subparts A (General Provisions) and 40 CFR 63, Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines . *Stationary RICE subject to Regulations under 40 CFR Part 60.* An affected source that meets any of the criteria in paragraphs 40 CFR 60.6590(c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.

ESSENTIAL POTENTIAL TO EMIT (PTE) PARAMETERS

B.1. <u>Equipment</u>. Two Generac Model No. SG300 emergency generators that are each powered by a 454 bhp reciprocating internal combustion engine that fires pipeline natural gas. The engines are 4-stroke, rich burn, spark-ignition engines. The engines coupled with the generators will utilize a non-selective catalytic reduction or 3-way catalyst as its primary control technology.

[Air Construction Permit No. 0410004-016-AC]

B.2. <u>Restricted Operation</u>. 500 hours per year.

[Title V Permit Application received June 2, 2011]

B.3. The provisions of this subpart are applicable to manufacturers and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (5) of 40 CFR 60.4230. Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured: (iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 KW (25 HP).

[60.4230(a)(4)(iv)]

B.4. Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) manufactured on or after the applicable date in §60.4230(a)(4) that are rich burn engines that use LPG must comply with the emission standards in §60.4231(c) for their stationary SI ICE.

B.4. continued:

§60.4231(c)

Stationary SI internal combustion engine must certify their stationary SI ICE with a-manufactured on or after the applicable date in §60.4230(a)(4) for emergency stationary ICE with a maximum engine power greater than or equal to 130 HP, to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1048.
[40 CFR 60.4233(c) and 40 CFR 60.4231(c)]

B.5. Owners and operators of stationary SI ICE must operate and maintain stationary SI ICE that achieve the emission standards as required in §60.4233 over the entire life of the engine.
[40 CFR 60.4234]

B.6. Starting on January 1, 2011, if the emergency stationary SI internal combustion engine that is greater than or equal to 130 HP and less than 500 HP that was built on or after January 1, 2011, does not meet the standards applicable to non-emergency engines, the owner or operator must install a non-resettable hour meter.
[40 CFR 60. 4237(b)]

B.7. If you are an owner or operator of a stationary SI internal combustion engine that is manufactured after July 1, 2008, and must comply with the emission standards specified in §60.4233(a) through (c), you must comply by purchasing an engine certified to the emission standards in §60.4231(a) through (c), as applicable, for the same engine class and maximum engine power. In addition, you must meet one of the requirements specified in (a)(1) and (2) of this section.

(1) If you operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, you must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required if you are an owner or operator. You must also meet the requirements as specified in 40 CFR part 1068, subparts A through D, as they apply to you. If you adjust engine settings according to and consistent with the manufacturer's instructions, your stationary SI internal combustion engine will not be considered out of compliance.

(i) If you are an owner or operator of a modified or reconstructed stationary SI internal combustion engine and must comply with the emission standards specified in §60.4233(f), you must demonstrate compliance according to one of the methods specified in paragraphs (i)(1) or (2) of this section.

(1) Purchasing, or otherwise owning or operating, an engine certified to the emission standards in §60.4233(f), as applicable.

B.7. continued:

(2) Conducting a performance test to demonstrate initial compliance with the emission standards according to the requirements specified in §60.4244. The test must be conducted within 60 days after the engine commences operation after the modification or reconstruction.
[40 CFR 60. 4243(a)]

NOTIFICATION, REPORTING, AND RECORDKEEPING REQUIREMENTS

B.8. Owners or operators of stationary SI ICE must meet the following notification, reporting and recordkeeping requirements.
(a) Owners and operators of all stationary SI ICE must keep records of the information in paragraphs (a)(1) through (4) of this section.
(1) All notifications submitted to comply with this subpart and all documentation supporting any notification.
(2) Maintenance conducted on the engine.
(3) If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable.
(4) If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards.
[40 CFR 60. 4245(a)(1)-(4)]

B.9. Table 3 to Subpart JJJJ of Part 60—Applicability of General Provisions to Subpart JJJJ

[As stated in §60.4246, you must comply with the following applicable General Provisions]

General provisions citation	Subject of citation	Applies to subpart	Explanation
§60.1	General applicability of the General Provisions	Yes	
§60.2	Definitions	Yes	Additional terms defined in §60.4248.

B.9. continued:

§60.3	Units and abbreviations	Yes	
§60.4	Address	Yes	
§60.5	Determination of construction or modification	Yes	
§60.6	Review of plans	Yes	
§60.7	Notification and Recordkeeping	Yes	Except that §60.7 only applies as specified in §60.4245.
§60.8	Performance tests	Yes	Except that §60.8 only applies to owners and operators who are subject to performance testing in subpart JJJJ.
§60.9	Availability of information	Yes	
§60.10	State Authority	Yes	
§60.11	Compliance with standards and maintenance requirements	Yes	Requirements are specified in subpart JJJJ.
§60.12	Circumvention	Yes	
§60.13	Monitoring requirements	No	
§60.14	Modification	Yes	
§60.15	Reconstruction	Yes	
§60.16	Priority list	Yes	
§60.17	Incorporations by reference	Yes	
§60.18	General control device requirements	No	
§60.19	General notification and reporting requirements	Yes	

[40 CFR 60. 4246]

B.10. *Certified emissions life* means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for certified emissions life for stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) are given in 40 CFR 90.105, 40 CFR 1054.107, and 40 CFR 1060.101, as appropriate. The values for certified emissions life for stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) certified to 40 CFR part 1048 are given in 40 CFR 1048.101(g). The certified emissions life for stationary SI ICE with a maximum engine power greater than 75 KW (100 HP) certified under the voluntary manufacturer certification program of this subpart is 5,000 hours or 7 years, whichever comes first.

B.10. continued:

Certified stationary internal combustion engine means an engine that belongs to an engine family that has a certificate of conformity that complies with the emission standards and requirements in this part, or of 40 CFR part 90, 40 CFR part 1048, or 40 CFR part 1054, as appropriate.

Combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-components comprising any simple cycle combustion turbine, any regenerative/recuperative cycle combustion turbine, the combustion turbine portion of any cogeneration cycle combustion system, or the combustion turbine portion of any combined cycle steam/electric generating system.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is number 2 distillate oil.

Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and carbon dioxide (CO2).

Emergency stationary internal combustion engine means any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc. Stationary SI ICE used for peak shaving are not considered emergency stationary ICE. Stationary ICE used to supply power to an electric grid or that supply power as part of a financial arrangement with another entity are not considered to be emergency engines.

Engine manufacturer means the manufacturer of the engine. See the definition of "manufacturer" in this section.

Four-stroke engine means any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution.

Gasoline means any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.

B.10. continued:

Landfill gas means a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO_2.

Lean burn engine means any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine.

Liquefied petroleum gas means any liquefied hydrocarbon gas obtained as a by-product in petroleum refining of natural gas production.

Manufacturer has the meaning given in section 216(1) of the Clean Air Act. In general, this term includes any person who manufactures a stationary engine for sale in the United States or otherwise introduces a new stationary engine into commerce in the United States. This includes importers who import stationary engines for resale.

Maximum engine power means maximum engine power as defined in 40 CFR 1048.801.

Model year means either: The calendar year in which the engine was originally produced, or the annual new model production period of the engine manufacturer if it is different than the calendar year. This must include January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year, and it must end by December 31 of the named calendar year. For an engine that is converted to a stationary engine after being placed into service as a nonroad or other non-stationary engine, model year means the calendar year or new model production period in which the engine was originally produced.

Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. Natural gas may be field or pipeline quality.

Other internal combustion engine means any internal combustion engine, except combustion turbines, which is not a reciprocating internal combustion engine or rotary internal combustion engine.

Pipeline-quality 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, and which is provided by a supplier through a pipeline. Pipeline-quality natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1,100 British thermal units per standard cubic foot.

B.10. continued:

Rich burn engine means any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but modified prior to June 12, 2006, with passive emission control technology for NO_X (such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent.

Rotary internal combustion engine means any internal combustion engine which uses rotary motion to convert heat energy into mechanical work.

Spark ignition means relating to either: a gasoline-fueled engine; or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary internal combustion engine means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle or a vehicle used solely for competition. Stationary ICE include reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.

Stationary internal combustion engine test cell/stand means an engine test cell/stand, as defined in subpart PPPPP of this part, that test stationary ICE.

Stoichiometric means the theoretical air-to-fuel ratio required for complete combustion.

Subpart means 40 CFR part 60, subpart JJJJ.

Two-stroke engine means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

Volatile organic compounds means volatile organic compounds as defined in 40 CFR 51.100(s).

B.10. continued:

Voluntary certification program means an optional engine certification program that manufacturers of stationary SI internal combustion engines with a maximum engine power greater than 19 KW (25 HP) that do not use gasoline and are not rich burn engines that use LPG can choose to participate in to certify their engines to the emission standards in §60.4231(d) or (e), as applicable.

[73 FR 3591, Jan. 18, 2008, as amended by 73 FR 59177, Oct. 8, 2008]

[40 CFR 60. 4248]

Table 1 to Subpart JJJJ of Part 60_NOX, CO, and VOC Emission Standards for Stationary Non-Emergency SI Engines
>=100 HP (Except Gasoline and Rich Burn LPG), Stationary SI Landfill/Digester Gas Engines, and Stationary Emergency Engines >25 HP

Engine type and fuel	Maximum engine power	Manufacture date	Emission standards a					
			g/HP-hr			ppmvd at 15% O2		
			NOX	CO	VOC d	NOX	CO	VOC d
Non-Emergency SI Natural Gas \b\ and Non-Emergency SI Lean Burn LPG \b\.	100[le]HP<500.....	7/1/2008	2.0	4.0	1.0	160	540	86
		1/1/2011	1.0	2.0	0.7	82	270	60
Non-Emergency SI Lean Burn Natural Gas and LPG.	500[le]HP<1,350....	1/1/2008	2.0	4.0	1.0	160	540	86
		7/1/2010	1.0	2.0	0.7	82	270	60
Non-Emergency SI Natural Gas and Non-Emergency SI Lean Burn LPG (except lean burn 500[le]HP<1,350).	HP>=500.....	7/1/2007	2.0	4.0	1.0	160	540	86
	HP>=500.....	7/1/2010	1.0	2.0	0.7	82	270	60
Landfill/Digester Gas (except lean burn 500[le]HP<1,350).	HP<500.....	7/1/2008	3.0	5.0	1.0	220	610	80
		1/1/2011	2.0	5.0	1.0	150	610	80
	HP>=500.....	7/1/2007	3.0	5.0	1.0	220	610	80
		7/1/2010	2.0	5.0	1.0	150	610	80
Landfill/Digester Gas Lean Burn.	500[le]HP<1,350....	1/1/2008	3.0	5.0	1.0	220	610	80
		7/1/2010	2.0	5.0	1.0	150	610	80
Emergency.....	25<HP<130.....	1/1/2009	\c\ 10	387	N/A	N/A	N/A	N/A
	HP>=130.....	.....	2.0	4.0	1.0	160	540	86

Table 1 to Subpart JJJJ of Part 60 continued:

\a\ Owners and operators of stationary non-certified SI engines may choose to comply with the emission standards in units of either g/HP-hr or ppmvd at 15 percent O2.
\b\ Owners and operators of new or reconstructed non-emergency lean burn SI stationary engines with a site rating of greater than or equal to 250 brake HP located at a major source that are meeting the requirements of 40 CFR part 63, subpart ZZZZ, Table 2a do not have to comply with the CO emission standards of Table 1 of this subpart.
\c\ The emission standards applicable to emergency engines between 25 HP and 130 HP are in terms of NOX + HC.
\d\ For purposes of this subpart, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.

SECTION IV. APPENDICES.

The Following Appendices Are Enforceable Parts of This Permit:

Appendix A, Glossary.
Appendix I, List of Insignificant Emissions Units and/or Activities.
Appendix NSPS, Subpart A – General Provisions.
Appendix NSPS, Subpart GG.
Appendix NSPS, Subpart KKKK.
Appendix RR, Facility-wide Reporting Requirements.
Appendix TR, Facility-wide Testing Requirements.
Appendix TV, Title V General Conditions.
Appendix U, List of Unregulated Emissions Units and/or Activities.

REFERENCED ATTACHMENTS.

The Following Attachments Are Included for Applicant Convenience:

Figure 1, Summary Report-Gaseous and Opacity Excess Emission and Monitoring System Performance (40 CFR 60, July, 1996).
Table H, Permit History.
Table 1, Summary of Air Pollutant Standards and Terms.
Table 2, Compliance Requirements.