

Memorandum

Florida Department of Environmental Protection

TO: Trina Vielhauer, Chief
Bureau of Air Regulation

THROUGH: Al Linero, Manager *AL*
New Source Review Section

FROM: Jeff Koerner, New Source Review Section *JK*

DATE: November 7, 2003

SUBJECT: Draft Air Construction Permit No. 0410004-007-AC
Florida Gas Transmission Company
Existing Compressor Station No. 24, Gilchrist County
Engine No. 2401, Replacement

Attached for your review are the following items:

- Intent to Issue Permit and Public Notice Package;
- Technical Evaluation and Preliminary Determination;
- Draft Permit; and
- PE Certification

The draft permit authorizes the replacement of existing Engine 2401 (a 15,000 bhp gas turbine) with a similar, but smaller unit rated at 13,000 bhp (ISO). Emissions of particulate matter (PM) and sulfur dioxide (SO₂) will be minimized by the firing of natural gas as the exclusive fuel, which contains little or no ash, sulfur, or other contaminants. The new gas turbine incorporates a lean, premix combustion design with automatic control to minimize emissions of nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC). Overall, potential emissions from the replacement gas turbine will be reduced by approximately 10% due to the smaller capacity. The existing facility remains a minor source of air pollution with respect to both the PSD and Title V regulatory programs.

The Technical Evaluation and Preliminary Determination provides a detailed description of the project, rule applicability, and emissions standards. The PE certification briefly summarizes the project. The proposed project is part of Florida Gas Transmission Company's overall Phase VI project intended to increase the natural gas supply capacity to service domestic, commercial, and industrial customers in Florida. The Bureau of Air Regulation agreed to process all Phase VI projects for Florida Gas Transmission Company to provide statewide consistency during construction.

Day #74 is January 12, 2004. I recommend your approval of the attached Draft Permit for this project.

Attachments

P.E. CERTIFICATION STATEMENT

PERMITTEE

Florida Gas Transmission Company
P.O. Box 1188
Houston, TX 77251

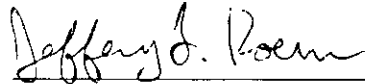
Draft Air Permit No. 0410004-007-AC
Compressor Station 24, Gilchrist County
Engine No. 2401, Replacement

PROJECT DESCRIPTION

The existing facility operates as a Compressor Station 24 in Gilchrist County for Florida Gas Transmission Company's natural gas pipeline. The proposed project will replace existing Engine 2401 (a 15,000 bhp gas turbine) with a similar, but smaller unit rated at 13,000 bhp (ISO). Emissions of particulate matter (PM) and sulfur dioxide (SO₂) will be minimized by the firing of natural gas as the exclusive fuel, which contains little or no ash, sulfur, or other contaminants. The new gas turbine incorporates a lean, premix combustion design with automatic control to minimize emissions of nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC). The new gas turbine will emit the following potential emissions: 54 tons of CO per year; 44 tons of NO_x per year; 14 tons of SO₂ per year; 3 tons of PM per year; and 2 tons VOC per year. This represents a reduction in potential pollutant emissions of approximately 10% from the previous unit. The existing facility remains a minor source of air pollution with respect to the Prevention of Significant Deterioration (PSD) preconstruction review permit program and the Title V air operating permit program.

The gas turbine is subject to the New Source Performance Standards of Subpart GG in 40 CFR 60, adopted by reference in Rule 62-204.800, F.A.C. This federal regulation establishes emissions standards, monitoring, testing, and reporting requirements for NO_x and SO₂ emissions. Based on the manufacturer's estimated performance, the gas turbine will readily comply with the NSPS requirements. The applicant has also requested a lower standard for NO_x emissions to ensure that the project and facility remain minor with respect to the PSD preconstruction review program and the Title V air operating permit program. The draft permit establishes emissions standards for CO, NO_x, and opacity and restricts allowable fuels to pipeline natural gas. The draft permit also requires annual testing to demonstrate compliance.

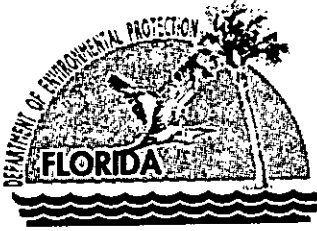
I HEREBY CERTIFY that the air pollution control engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including, but not limited to, the electrical, mechanical, structural, hydrological, geological, and meteorological features).



Jeffery F. Koerner, P.E.
Registration Number: 49441

11-7-03

(Date)



Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

November 17, 2003

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Rick Craig, V.P. of Southeastern Operations
Florida Gas Transmission Company
P.O. Box 1188
Houston, TX 77251

Re: Draft Air Permit No. 0410004-007-AC
Existing Compressor Station 24
Engine No. 2401, Replacement
Gilchrist County, Florida

Dear Mr. Craig:

Enclosed is one copy of the Draft Permit to replace existing Engine 2401 (a 15,000 bhp gas turbine) with a smaller unit rated at 13,000 bhp (ISO). The new equipment will be installed at existing Compressor Station 24, which is located near Trenton at the intersection of U.S. Highway 129 and SW 50th Street in Gilchrist County, Florida. The Department's "Technical Evaluation and Preliminary Determination", "Intent to Issue Permit", and the "Public Notice of Intent to Issue Permit" are also included.

The "Public Notice of Intent to Issue Permit" must be published one time only, as soon as possible, in the legal advertisement section of a newspaper of general circulation in the area affected, pursuant to the requirements Chapter 50, Florida Statutes. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within seven days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A. A. Linero, Administrator of the New Source Review Section, at the above letterhead address. If you have any other questions, please contact Jeff Koerner at 850/921-9536.

Sincerely,

Trina Vielhauer, Chief
Bureau of Air Regulation

Enclosures

"More Protection, Less Process"

Printed on recycled paper.

In the Matter of an
Application for Air Permit by:

Florida Gas Transmission Company
P.O. Box 1188
Houston, TX 77251

Authorized Representative:

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

Existing Compressor Station 24
Draft Air Permit No. 0410004-007-AC
Engine No. 2401, Replacement
Gilchrist County, Florida

INTENT TO ISSUE AIR CONSTRUCTION PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit (copy of Draft Permit attached) for the proposed project as detailed in the application and the enclosed Technical Evaluation and Preliminary Determination, for the reasons stated below. The applicant, Florida Gas Transmission Company, applied on October 31, 2003 to the Department for a permit to replace existing Engine 2401 (a 15,000 bhp gas turbine) with a smaller unit rated at 13,000 bhp (ISO). The new equipment will be installed at existing Compressor Station 24, which is located near Trenton at the intersection of U.S. Highway 129 and SW 50th Street in Gilchrist County, Florida.

The Department has permitting jurisdiction under the provisions of Chapter 403, F.S., and Chapters 62-4, 62-210, and 62-212, F.A.C. The above actions are not exempt from permitting procedures. The Department has determined that an air construction permit is required to perform proposed work. The Department intends to issue this air construction permit based on the belief that the applicant has provided reasonable assurances to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-110.106(7)(a)1, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Permit (Public Notice). The notice shall be published one time only in the legal advertisement section of a newspaper of general circulation in the area affected. Rule 62-110.106(7)(b), F.A.C., requires that the applicant cause the notice to be published as soon as possible after notification by the Department of its intended action. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-0114, Fax: 850/ 922-6979). You must provide proof of publication within seven days of publication, pursuant to Rule 62-110.106(5), F.A.C. No permitting action for which published notice is required shall be granted until proof of publication of notice is made by furnishing a uniform affidavit in substantially the form prescribed in Section 50.051, F.S. to the office of the Department issuing the permit. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rules 62-110.106(9) and (11), F.A.C.

The Department will issue the final permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of fourteen (14) days from the date of publication of Public Notice. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S. must be filed

within fourteen (14) days of publication of the public notice or within fourteen (14) days of receipt of this notice of intent, whichever occurs first. Under Section 120.60(3), F.S. however, any person who asked the Department for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542, F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Mediation is not available in this proceeding. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2), F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.



Trina Vielhauer, Chief
Bureau of Air Regulation

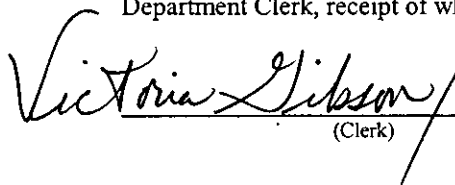
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Intent to Issue Air Permit package (including the Public Notice, Technical Evaluation and Preliminary Determination, and the Draft Permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 11/18/03 to the persons listed:

Mr. Rick Craig, FGTC*
Mr. Jacob Krautsch, FGTC
Mr. David Holmes Parham, FGTC
Mr. V. Duane Pierce, AQMcS
Mr. Chris Kirts, NED

Clerk Stamp

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

 / November 18, 2003
(Clerk) (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Draft Air Permit No. 0410004-007-AC

Florida Gas Transmission Company
Existing Compressor Station 24, Gilchrist County
Compressor Engine 2401, Replacement

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to the Florida Gas Transmission Company to replace existing Engine 2401 with a similar, but smaller unit. The new equipment will be installed at existing Compressor Station 24, which is located near Trenton at the intersection of U.S. Highway 129 and SW 50th Street in Gilchrist County, Florida. The applicant's authorized representative is Mr. Rick Craig, Vice President of Southeastern Operations. The applicant's mailing address is Florida Gas Transmission Company, P.O. Box 1188, Houston, TX 77251.

The existing facility operates as a Compressor Station 24 in Gilchrist County for Florida Gas Transmission Company's natural gas pipeline. The proposed project will replace existing Engine 2401 (a 15,000 bhp gas turbine) with a similar, but smaller unit rated at 13,000 bhp (ISO). Emissions of particulate matter (PM) and sulfur dioxide (SO₂) will be minimized by the firing of natural gas as the exclusive fuel, which contains little or no ash, sulfur, or other contaminants. The new gas turbine incorporates a lean, premix combustion design with automatic control to minimize emissions of nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC). The new gas turbine will emit the following potential emissions: 54 tons of CO per year; 44 tons of NO_x per year; 14 tons of SO₂ per year; 3 tons of PM per year; and 2 tons VOC per year. This represents a reduction in potential pollutant emissions of approximately 10% from the previous unit. The existing facility remains a minor source of air pollution with respect to the Prevention of Significant Deterioration (PSD) preconstruction review permit program and the Title V air operating permit program.

The gas turbine is subject to the New Source Performance Standards of Subpart GG in 40 CFR 60, adopted by reference in Rule 62-204.800, F.A.C. This federal regulation establishes emissions standards, monitoring, testing, and reporting requirements for NO_x and SO₂ emissions. Based on the manufacturer's estimated performance, the gas turbine will readily comply with the NSPS requirements. The applicant has also requested a lower standard for NO_x emissions to ensure that the project and facility remain minor with respect to the PSD preconstruction review program and the Title V air operating permit program. The draft permit establishes emissions standards for CO, NO_x, and opacity and requires annual testing to demonstrate compliance.

The Department will issue the Final Permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions. The Department will accept written comments concerning the proposed permit issuance action for a period of fourteen (14) days from the date of publication of this Public Notice of Intent to Issue Air Construction Permit. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57, F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S. must be filed within fourteen (14) days of publication of the public notice or within fourteen (14) days of receipt of this notice of intent, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Department for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Florida Department of Environmental Protection
Bureau of Air Regulation, New Source Review Section
(111 S. Magnolia Drive, Suite 4)
2600 Blair Stone Road, MS #5505
Tallahassee, Florida, 32399-2400
Telephone: 850/488-0114

Florida Department of Environmental Protection
Northeast District Office
Air Resources Section
7825 Baymeadows Way, Suite 200B
Jacksonville, FL 32256-7590
Telephone: 904/807-3300

The complete project file includes the application, Technical Evaluation and Preliminary Determination, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Department's reviewing engineer for this project for additional information at the address and phone numbers listed above.

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

**TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION**

PROJECT

Draft Air Construction Permit No. 041004-007-AC

Existing Compressor Station 24

ARMS Facility ID No. 0410004

Replacement of Engine 2401

(Emissions Units 001 - 003)

COUNTY

Gilchrist County, Florida

APPLICANT

Florida Gas Transmission Company

P.O. Box 1188

Houston, TX 77251

**PERMITTING
AUTHORITY**

Florida Department of Environmental Protection

Division of Air Resources Management

Bureau of Air Regulation

New Source Review Section



November 7, 2003

{Filename: 0410004-007-AC - TEPD}

1. GENERAL PROJECT INFORMATION

Facility Description and Location

Florida Gas Transmission Company operates existing Compressor Station 24, which is located near Trenton at the intersection of U.S. Highway 129 and SW 50th Street in Gilchrist County, Florida. The station currently consists of a 15,000 bhp gas turbine (Engine 2401), a 7222 bhp gas turbine (Engine 2402), and miscellaneous support activities. The existing site is in an area that is in attainment with the ambient air quality standards for carbon monoxide, nitrogen oxides, sulfur dioxide, and ozone. It is unclassifiable with regard to particulate matter and lead.

Standard Industrial Classification Code (SIC)

SIC No. 4922 – Natural Gas Transmission

Regulatory Categories

Title III: The facility is not a major source of hazardous air pollutants (HAP).

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

Title V: The facility is not a Title V major source of air pollution pursuant to Chapter 62-213, F.A.C.

PSD: The facility is not a PSD major source of air pollution pursuant to Rule 62-212.400, F.A.C.

NSPS: New gas turbines are subject to the New Source Performance Standards of Subpart GG in 40 CFR 60.

Processing Schedule

The Department received a complete application on October 31, 2003.

Project Description

A recent pipeline flow study shows that Station 24 will need less horsepower than previously projected. The Federal Energy Regulatory Commission (FERC), which regulates construction and operation of the natural gas pipeline, does not allow extra capacity on the system. Florida Gas Transmission Company proposes to replace the existing 15,000 bhp Solar Mars 100-T15000S gas turbine with a smaller 13,000 bhp Solar Model No. Mars 90-T13000S gas turbine. The replacement unit is also equipped with dry low-NOx emission (DLE) combustors. The proposed project is part of Florida Gas Transmission Company's overall Phase VI project intended to increase the natural gas supply capacity and reliability to service domestic, commercial, and industrial customers in Florida. The Bureau of Air Regulation agreed to process all Phase VI projects for Florida Gas Transmission Company to provide statewide consistency during construction.

2. APPLICABLE REGULATIONS

State Regulations

This project is subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The Florida Statutes authorize the Department of Environmental Protection to establish rules and regulations regarding air quality as part of the Florida Administrative Code (F.A.C.). This project is subject to the applicable rules and regulations defined in the following Chapters of the Florida Administrative Code.

<u>Chapter</u>	<u>Description</u>
62-4	Permitting Requirements
62-204	Federal Regulations Adopted by Reference
62-210	Required Permits, Public Notice, Reports, Circumvention, Excess Emissions, and Forms
62-212	Preconstruction Review
62-213	Operation Permits for Major Sources of Air Pollution
62-296	Emission Limiting Standards
62-297	Test Methods and Procedures

Federal Regulations

This project is also subject to the applicable federal provisions regarding air quality as established by the EPA in the following sections of the Code of Federal Regulations (CFR).

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

<u>Title 40, CFR</u>	<u>Description</u>
Part 60	Subpart A - General Provisions for NSPS Sources NSPS Subpart GG - Stationary Gas Turbines Applicable Appendices

3. EMISSIONS STANDARDS

Process Description

The following sections are excerpts on gas turbines from Section 3.1 of EPA's AP-42 emission factor document:

"The primary pollutants from gas turbine engines are nitrogen oxides (NOx), carbon monoxide (CO), and to a lesser extent, volatile organic compounds (VOC). Particulate matter (PM) is also a primary pollutant for gas turbines using liquid fuels. Nitrogen oxide formation is strongly dependent on the high temperatures developed in the combustor. Carbon monoxide, VOC, hazardous air pollutants (HAP), and PM are primarily the result of incomplete combustion. Trace to low amounts of HAP and sulfur dioxide (SO2) are emitted from gas turbines. Ash and metallic additives in the fuel may also contribute to PM in the exhaust. Oxides of sulfur (SOx) will only appear in a significant quantity if heavy oils are fired in the turbine. Emissions of sulfur compounds, mainly SO2, are directly related to the sulfur content of the fuel."

"Since thermal NOx is a function of both temperature (exponentially) and time (linearly), the basis of dry controls are to either lower the combustor temperature using lean mixtures of air and/or fuel staging, or decrease the residence time of the combustor. A combination of methods may be used to reduce NOx emissions such as lean combustion and staged combustion (two stage lean/lean combustion or two-stage rich/lean combustion)."

"Two stage rich/lean combustors are essentially air-staged, premixed combustors in which the primary zone is operated fuel rich and the secondary zone is operated fuel lean. The rich mixture produces lower temperatures (compared to stoichiometric) and higher concentrations of CO and H2, because of incomplete combustion. The rich mixture also decreases the amount of oxygen available for NOx generation. Before entering the secondary zone, the exhaust of the primary zone is quenched (to extinguish the flame) by large amounts of air and a lean mixture is created. The lean mixture is pre-ignited and the combustion completed in the secondary zone. NOx formation in the second stage is minimized through combustion in a fuel lean, lower temperature environment. Staged combustion is identified through a variety of names, including Dry-Low NOx (DLN), Dry-Low Emissions (DLE), or SoLoNOx."

The gas turbine proposed for the project will fire natural gas as the exclusive fuel, which contains little or no ash, sulfur, or other contaminants. This will minimize emissions of particulate matter and sulfur dioxide. The design of the proposed unit includes lean premix combustion technology with automated control to reduce emissions of nitrogen oxides. Emissions of carbon monoxide and volatile organic compounds will also be minimized by this technology, which results in the efficient combustion of natural gas at uniformly high temperatures.

NSPS Subpart GG Standards

The gas turbine is subject to the New Source Performance Standards of Subpart GG in 40 CFR 60, adopted by reference in Rule 62-204.800, F.A.C. This regulation establishes standards for emissions of NOx and SO2 as well as testing and monitoring requirements. In general, the emissions standards are:

- NOx emissions \leq 150 ppmvd corrected for heat rate and fuel nitrogen (equivalent to 187 ppmvd @ 15% O2), and
- SO2 emissions are limited by firing only fuels containing \leq 0.8% sulfur by weight (equivalent to 150 ppmvd).

The manufacturer's guaranteed NOx emission rate is 25 ppmvd @ 15% O2, which readily complies with the NSPS NOx standard. The Federal Energy Regulatory Commission (FERC) currently limits the maximum sulfur content of natural gas to 10 grains of sulfur per 100 scf, which is less than 0.03% sulfur by weight (assuming a density for natural gas of 0.0455 lb/scf). The actual sulfur content of pipeline natural gas is typically less than 1 grain per 100 scf. The exclusive firing of natural gas readily complies with the NSPS standard for SO2 emissions.

Draft Emissions Standards

The smaller gas turbine will reduce emissions by approximately 10% of the previous potential emissions. The draft permit establishes emissions standards for several pollutants that reflect efficient operation of the proposed equipment and ensure that the project remains minor with respect to the PSD preconstruction review permit program and the Title V operating

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

permit program. The Department establishes the following emissions standards based on the application for Engine 2401 and previous air construction Permit No. 0410004-006-AC for Engine 2402.

Table 3A. EU-001: Compressor Engines 2401 and 2402, Gas Turbines

Pollutant	Standards Engines 2401 and 2402	Equivalent Maximum Emissions ^f				Rule Basis ^g
		Engine 2401		Engine 2402		
		lb/hour	TPY	lb/hour	TPY	
CO ^a	50.0 ppmvd @ 15% O ₂	12.3	54	7.0	31	Rule 62-4.070(3), F.A.C.
NOx ^b	25.0 ppmvd @ 15% O ₂	10.1	44	5.7	25	Rule 62-4.070(3), F.A.C. 40 CFR 60.332
SO ₂ ^c	10 grains of sulfur/100 scf	3.1	14	1.7	8	Rule 62-4.070(3), F.A.C. 40 CFR 60.333
Opacity ^d	10% opacity, 6-minute average	Not Applicable				Rule 62-4.070(3), F.A.C.
PM ^e	Lean premix combustion design	0.7	3	0.4	2	Rule 62-4.070(3), F.A.C.
VOC ^e	Lean premix combustion design	0.4	2	1.5	7	Rule 62-4.070(3), F.A.C.

- a. The CO standards are based on the average of three test runs as determined by EPA Method 10.
- b. The NOx standards are based on the average of three test runs as determined EPA Method 20.
- c. The fuel sulfur specification is based on the maximum limit specified by Federal Energy Regulatory Commission (FERC) and effectively limits the potential SO₂ emissions. Expected fuel sulfur levels are less than 1 grain per 100 scf of natural gas from the pipeline.
- d. The opacity standard is based on a 6-minute average, as determined by EPA Method 9.
- e. PM and VOC emissions are minimized by the equipment specification of “lean premix combustion design” for each gas turbine. The equivalent maximum emissions are provided for informational purposes only. PM emissions are based on an AP-42 emission factor of 0.0066 lb/MMBtu (Table 3.1-2a). VOC emissions are based on available vendor data and exclude emissions of methane and ethane, which are assumed to be 90% of the factor for total unburned hydrocarbons. No testing or other compliance demonstration is required for emissions of PM or VOC.
- f. Equivalent maximum emissions for each gas turbine are based on: permitted capacity, a turbine inlet air temperature of 59° 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 59° F or greater, measured 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 tabled mass emission rates provided by the manufacturer based on compressor inlet temperatures.
- g. The emissions standards of this permit ensure that the facility remains a minor source of air pollution with respect to both the PSD preconstruction review permit program and the Title V operating permit program.

4. COMPLIANCE DEMONSTRATIONS

Initial Tests

The gas turbine shall be tested to demonstrate initial compliance with the emission standards for CO, NOx, and visible emissions. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial startup of the gas turbine. 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. Each of the three low-load NOx performance tests shall consist of three, 20-minute test runs. The peak load NOx performance test shall consist of three, 1-

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

hour test runs. The CO performance tests shall be conducted concurrently with the NOx performance tests at peak load. SO2 emissions shall be calculated based on fuel flow and vendor analysis of fuel sulfur content. [Rule 62-297.310(7)(a)1, F.A.C.; 40 CFR 60.8 and 60.335]

Annual Tests

During each federal fiscal year (October 1 - September 30), the gas turbine shall be tested to demonstrate compliance with the emission standards for CO, NOx, and visible emissions. CO and NOx emissions shall be tested concurrently at permitted capacity. SO2 emissions shall be calculated based on fuel flow and vendor analysis of fuel sulfur content. [Rule 62-297.310(7)(a), F.A.C.]

Custom Fuel Monitoring

The applicant has requested a custom fuel-monitoring schedule for fuel sulfur that meets the general requirements of EPA's most recent guidance regarding compliance with the NSPS Subpart GG provisions. The frequency of monitoring shall begin at twice per week and may eventually be reduced to twice per year based on satisfactory results.

5. REPLACEMENT COMPONENTS

The applicant requests authorization to replace modular components of the gas turbines compressor engines with "like-kind" equipment, including the entire gas generator and power turbine. The replacement components will be of the same make and model with an equivalent (or better) design emission profile. The repair and maintenance of combustors and turbine blades is complex and further complicated when performed in the field. Therefore, gas turbine manufacturers provide a modular design for light-industrial, aero-derivative gas turbines such as these to facilitate repairs and maintenance. The component requiring maintenance is disconnected and sent to a regional repair facility. A replacement component from a pool of like-kind equipment is installed to minimize downtime of the compressor engine. The applicant will re-test the unit after replacement of the gas generator component.

Station 24 is a minor source of air pollution. Therefore, replacements of like-kind components that do not increase emissions are not subject to PSD preconstruction review. With reference to the NSPS Subpart GG requirements, the gas turbines are already subject to this regulation, so "reconstruction" and "modification" are not issues with regard to the NSPS. In addition, there will be no increase in maximum hourly emissions because replacements will be with like-kind equipment having the same design emission standards. Without an increase in emissions, such replacements could not constitute a modification as defined by the NSPS. This is consistent with EPA's original intent for gas turbines as described in the background document for the final NSPS Subpart GG regulations (No. EPA-450/2-77-017a). The Department approves the request and the draft permit establishes a condition allowing the replacement of like-kind components with appropriate requirements for notification, certification, testing, and reporting.

6. OTHER EMISSIONS UNITS

Engine 2402 is a 7222 bhp (ISO) Cooper-Rolls Model No. 501-KC7-DLE gas turbine that was recently constructed under Permit No. 0410004-006-AC. Station 24 also includes miscellaneous support activities such as a 443 bhp emergency generator, an oily water tank, a diesel oil tank, a pipeline condensate storage tank, and miscellaneous fugitive leaks from pipeline equipment such as pumps, valves, flanges, connectors, etc. The Department will consolidate all previous regulatory requirements in Permit No. 0410004-006-AC for these other emissions units under the proposed draft permit. The air construction permit for this project will supersede all previous air construction permits for the corresponding emissions units.

7. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the specific conditions of the draft permit. Jeff Koerner is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at the Department's Bureau of Air Regulation at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

PERMITTEE:

Florida Gas Transmission Company
P.O. Box 1188
Houston, TX 77251

Authorized Representative:

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

Air Permit No. 0410004-007-AC
Facility ID No. 0410004
Compressor Station 24
Replacement of Engine 2401
Gilchrist County, Florida
Permit Expires: November 30, 2004

PROJECT AND LOCATION

This permit authorizes the replacement of existing Engine 2401 with a smaller 13,000 bhp (ISO) gas turbine. The air construction permit also consolidates all previous regulatory requirements for the remaining emissions units under a single air construction permit. The new equipment will be installed at existing Compressor Station 24, which is located near Trenton at the intersection of U.S. Highway 129 and SW 50th Street in Gilchrist County, Florida. The UTM coordinates are Zone 17, 321.3 km East, and 3282.8 km North.

STATEMENT OF BASIS

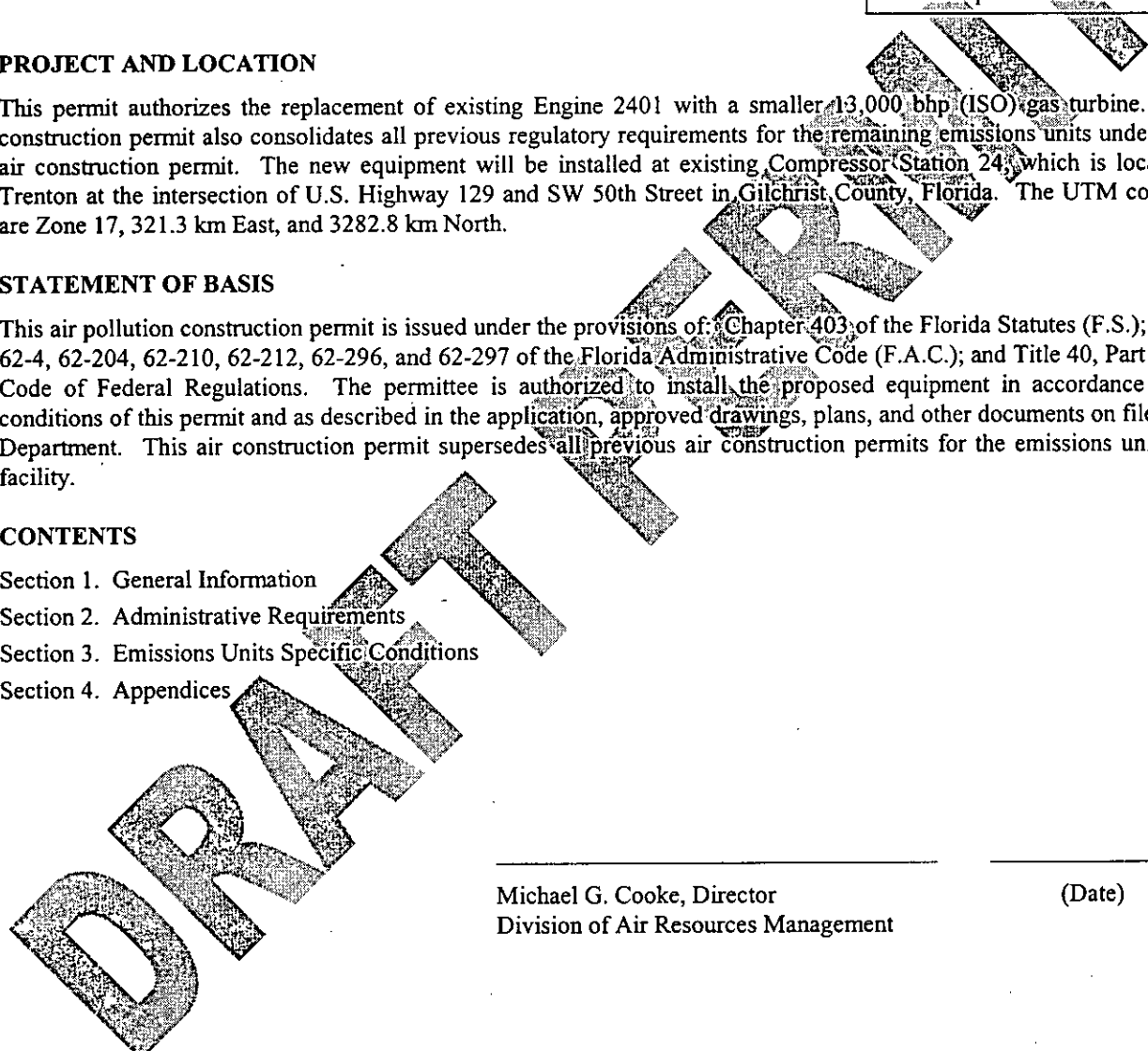
This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.); Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.); and Title 40, Part 60 of the Code of Federal Regulations. The permittee is authorized to install the proposed equipment in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department. This air construction permit supersedes all previous air construction permits for the emissions units at this facility.

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

Michael G. Cooke, Director
Division of Air Resources Management

(Date)



SECTION 1. GENERAL INFORMATION

FACILITY AND PROJECT 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), and miscellaneous support activities. The permittee proposes to replace Engine 2401 with a smaller 13,000 bhp gas turbine. Upon completing the replacement, the station will consist of the following emissions units.

ID No.	Emission Unit Description
001	Engine 2401: Solar Model Mars 90-T13000S gas turbine rated at 13,000 bhp (ISO)
002	Miscellaneous support activities
003	Engine 2402: Cooper-Rolls Model No. 501-KC7-DLE gas turbine rated at 7222 bhp (ISO)

The project is part of FGTC's overall Phase VI project intended to increase the natural gas supply capacity and reliability to service domestic, commercial, and industrial customers in Florida. The permit consolidates the regulatory requirements for the emissions units at this facility.

REGULATORY CLASSIFICATION

Title III: The facility is not a major source of hazardous air pollutants (HAP).

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

Title V: The facility is not a Title V major source of air pollution pursuant to Chapter 62-213, F.A.C.

PSD: The facility is not a PSD major source of air pollution pursuant to Rule 62-212.400, F.A.C.

NSPS: New gas turbines are subject to the New Source Performance Standards of Subpart GG in 40 CFR 60.

RELEVANT DOCUMENTS

The documents listed below are not a part of this permit; however, they are specifically related to this permitting action and are on file with the Department.

- Permit No. 0410004-001-AC: Initial authorization to construct the new station (Engine 2401).
- Permit No. 0410004-002-AO: Initial air operation permit (Engine 2401).
- Permit No. 0410004-003-AC: Modification to increase heat input rate for Engine 2401.
- Permit No. 0410004-004-AC: Modification to increase heat input rate for Engine 2401.
- Permit No. 0410004-005-AO: Revision of the air operation permit (Engine 2401).
- Permit No. 0410004-006-AC: Authorization to construct of Engine 2402.
- Project No. 041004-007-AC: Application to replace Engine 2401 (consolidates all emissions units).

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to operate an emissions unit shall be submitted to the Department's Air Resource Section of the Northeast District Office at 7825 Baymeadows Way, Suite 200B, Jacksonville, Florida 32256-7590 and phone number 904/807-3300.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Department's Air Resource Section of the Northeast District Office at 7825 Baymeadows Way, Suite 200B, Jacksonville, Florida 32256-7590 and phone number 904/807-3300.
3. Appendices: The following Appendices are attached as part of this permit.
 - Appendix A. Citation Format
 - Appendix B. Common State Regulatory Requirements
 - Appendix C. NSPS Subpart GG Requirements for Gas Turbines
 - Appendix D. Custom Fuel Monitoring Schedule
 - Appendix E. Summary of Potential Emissions
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the 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.; Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C.; and Title 40, Part 60 of the Code of Federal Regulations, adopted by reference in Rule 62-204.800, F.A.C. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
6. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
7. Air Operation Permit: This permit authorizes construction of the emissions unit and initial operation to determine compliance with Department rules. An air operation permit is required for regular operation of the permitted emissions unit. At least sixty (60) days prior to the expiration of this air construction permit, the permittee shall submit an application for an air operation permit with the required compliance test report. [Rules 62-210.300, F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

Compressor Station 24

This section of the permit addresses the following emissions units.

EU ID	Emissions Unit Description
001	<p><u>Compressor Engine 2401</u> consists of a Solar Model No. Mars 90-T13000S gas turbine.</p> <p><i>Fuel:</i> The gas turbine fires pipeline natural gas (SCC No. 2-02-002-01) at a maximum firing rate of approximately 108,100 cubic feet per hour based on a heating value (HHV) for natural gas of 1040 Btu/scf.</p> <p><i>Capacity:</i> At a maximum heat input rate of 113 MMBtu per hour, the gas turbine produces approximately 13,000 bhp (ISO). The gas turbine is intended to operate at or near capacity.</p> <p><i>Controls:</i> The efficient lean premix combustor design minimizes emissions of CO, NOx, and VOC. The exclusive combustion of natural gas minimizes emissions of PM and SO2.</p> <p><i>Stack Parameters:</i> When operating at capacity, exhaust gases exit a rectangular stack (7.5 feet by 8-feet) that is 58 feet tall with a flow rate of approximately 179,100 acfm and a temperature of approximately 873° F.</p>
002	<p><u>Miscellaneous support equipment</u> at this station includes of a 443 bhp gas-fired emergency generator ("GEN03"), an oily water tank, a diesel oil tank, a pipeline condensate storage tank, and miscellaneous fugitive emissions from pipeline equipment such as pumps, valves, flanges, connectors, etc. <i>{Permitting Note: The emergency generator is expected to operate much less than 500 hours per year.}</i></p>
003	<p><u>Compressor Engine 2402</u> consists of a Cooper-Rolls Royce Model No. 501-KC7-DLE gas turbine.</p> <p><i>Fuel:</i> The gas turbine fires pipeline natural gas (SCC No. 2-02-002-01) at a maximum firing rate of approximately 60,700 cubic feet per hour based on a heating value (HHV) of 1040 Btu per scf of gas.</p> <p><i>Capacity:</i> At a maximum of 63 MMBtu per hour of heat input, the gas turbine produces approximately 7222 bhp (ISO). The gas turbine is intended to operate at or near capacity.</p> <p><i>Controls:</i> The efficient lean premix combustor design minimizes emissions of CO, NOx, and VOC. The exclusive combustion of natural gas minimizes emissions of PM and SO2.</p> <p><i>Stack Parameters:</i> When operating at capacity, exhaust gases exit a rectangular stack (7.33 feet by 5.50 feet) that is 61 feet tall with a flow rate of approximately 98,000 acfm and a temperature of approximately 960° F.</p>

APPLICABLE STANDARDS AND REGULATIONS

- NSPS Requirements: Each gas turbine shall comply with the New Source Performance Standards (NSPS) of Subpart GG in 40 CFR 60. The applicable NSPS requirements are provided in Appendix C of this permit. An approved Custom Fuel Monitoring Schedule is specified in Appendix D of this permit. The Department believes that the conditions in this section are at least as stringent as, or more stringent than, the NSPS requirements of Subpart GG. [Rule 62-210.800, F.A.C.; 40 CFR 60, Subpart GG]
- Other Permits: This permit supersedes all previous air construction permits for the emissions units identified at this facility. [Rule 62-4.070(3), F.A.C.]

EQUIPMENT:

- Compressor Engine 2401: The permittee is authorized to replace existing Engine 2401 with a 13,000 bhp (ISO) Solar Model No. Mars 90-T13000S gas turbine with lean premix combustor design. Ancillary equipment includes the automated gas turbine control system, an inlet air filtration system, and a rectangular stack. The permittee shall tune, operate and maintain the gas turbine's lean premix combustion system to reduce emissions of nitrogen oxides to achieve the permitted standards. The existing 15,000 bhp Solar Mars 100-T15000S gas turbine shall be permanently removed from this site. [Applicant Request; Design]
- Compressor Engine 2402: The permittee is authorized to install one 7222 bhp (ISO) gas turbine compressor engine consisting of a Cooper-Rolls Royce Model No. 501-KC7-DLE. Ancillary equipment includes the automated gas turbine control system, an inlet air filtration system, and a rectangular stack. The permittee shall tune, operate and maintain the gas turbine's lean premix combustion system to reduce emissions of nitrogen oxides to achieve the permitted standards. [Applicant Request; Design]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

Compressor Station 24

PERFORMANCE RESTRICTIONS

5. Permitted Capacities

- a. *Engine 2401*: The maximum heat input rate to the gas turbine is 113 MMBtu per hour while producing approximately 13,000 bhp (ISO) based on a turbine inlet air temperature of 59° F, 100% load, and a heating value (HHV) of 1040 Btu/scf of natural gas.
- b. *Engine 2402*: The maximum heat input rate to the gas turbine is 63 MMBtu per hour while producing approximately 7222 bhp (ISO) based on a turbine inlet air temperature of 59° F, 100% load, and a heating value (HHV) of 1040 Btu per scf of natural gas.

Heat input rates will vary depending upon gas turbine characteristics, load, and ambient conditions. The permittee shall provide manufacturer's performance curves (or equations) that correct for site conditions to the Permitting and Compliance Authorities within 45 days of completing the initial testing. Performance data shall be adjusted for the appropriate site conditions in accordance with the performance curves and/or equations on file with the Department. [Rule 62-210.200(PTE), F.A.C.] *{Permitting Note: The maximum heat input rates are based on the manufacturer's equipment specifications for each gas turbine. They are included to identify the capacity of each emissions unit for purposes of confirming that tests are conducted within 90% to 100% of the emission unit's rated capacity (or to limit future operation to 105% of the test load, if applicable), to establish appropriate emissions limits, and to aid in determining future rule applicability.}*

- 6. **Authorized Fuel**: Each gas turbine shall fire only natural gas with a maximum of 10 grains of sulfur per 100 standard cubic feet of natural gas. [Applicant Request; Rule 62-210.200(PTE), F.A.C.]
- 7. **Restricted Operation**: The hours of operation for each gas 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) and 62-210.200(PTE), F.A.C.]

EMISSIONS STANDARDS

- 8. **Emissions Standards**: Each gas turbine shall not exceed the following standards for carbon monoxide (CO), nitrogen oxides (NOx), opacity, particulate matter (PM), sulfur dioxide (SO₂), and volatile organic compounds (VOC).

Pollutant	Standards Engines 2401 and 2402	Equivalent Maximum Emissions ^f				Rule Basis ^g
		Engine 2401		Engine 2402		
		lb/hour	TPY	lb/hour	TPY	
CO ^a	50.0 ppmvd @ 15% O ₂	12.3	54	7.0	31	Rule 62-4.070(3), F.A.C.
NOx ^b	25.0 ppmvd @ 15% O ₂	10.1	44	5.7	25	Rule 62-4.070(3), F.A.C. 40 CFR 60.332
SO ₂ ^c	10 grains of sulfur/100 scf	3.1	14	1.7	8	Rule 62-4.070(3), F.A.C. 40 CFR 60.333
Opacity ^d	10% opacity, 6-minute average	Not Applicable				Rule 62-4.070(3), F.A.C.
PM ^e	Lean premix combustion design	0.7	3	0.4	2	Rule 62-4.070(3), F.A.C.
VOC ^e	Lean premix combustion design	0.4	2	1.5	7	Rule 62-4.070(3), F.A.C.

- a. The CO standards are based on the average of three test runs as determined by EPA Method 10.
- b. The NOx standards are based on the average of three test runs as determined EPA Method 20.
- c. The fuel sulfur specification is based on the maximum limit specified by Federal Energy Regulatory Commission (FERC) and effectively limits the potential SO₂ emissions. Expected fuel sulfur levels are less than 1 grain per 100 scf of natural gas from the pipeline.
- d. The opacity standard is based on a 6-minute average, as determined by EPA Method 9.

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

Compressor Station 24

- e. PM and VOC emissions are minimized by the equipment specification of "lean premix combustion design" for each gas turbine. The equivalent maximum emissions are provided for informational purposes only. PM emissions are based on an AP-42 emission factor of 0.0066 lb/MMBtu (Table 3.1-2a). VOC emissions are based on available vendor data and exclude emissions of methane and ethane, which are assumed to be 90% of the factor for total unburned hydrocarbons. No testing or other compliance demonstration is required for emissions of PM or VOC.
- f. Equivalent maximum emissions for each gas turbine are based on: permitted capacity, a turbine inlet air temperature of 59° 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 59° F or greater, measured 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 tabled mass emission rates provided by the manufacturer based on turbine inlet temperatures.
- g. The emissions standards of this permit ensure that the facility remains a minor source of air pollution with respect to both the PSD preconstruction review permit program and the Title V operating permit program.

Appendix E of this permit summarizes the potential emissions estimates for Station 24.

EMISSIONS PERFORMANCE TESTING

- 9. **Test Methods:** Required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources <i>{Permitting Note: The method shall be based on a continuous sampling train.}</i>
19	Determination of SO2 Removal Efficiency and Emission Rates for PM, SO2, and NOx <i>{Permitting Note: Optional F-factor method may be used to determine flow rate and gas analysis to calculate mass emissions in lieu of Methods 1-4.}</i>
20	Determination of NOx, SO2, and Diluent Emissions from Gas Turbines

The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used for compliance testing without prior written approval from the Department. Tests shall also be conducted in accordance with the requirements specified in Appendix B of this permit. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]

- 10. **Initial Tests:** Each gas turbine shall be tested to demonstrate initial compliance with the emission standards for CO, NOx, and visible emissions. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial startup of the gas turbine. 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. Each of the three low-load NOx performance tests shall consist of three, 20-minute test runs. The peak load NOx performance test shall consist of three, 1-hour test runs. The CO performance tests shall be conducted concurrently with the NOx performance tests at peak load. SO2 emissions shall be calculated based on fuel flow and vendor analysis of fuel sulfur content. *{Permitting Note: The permittee may have previously satisfied the requirement for the initial testing of Engine 2402.}* [Rule 62-297.310(7)(a)1, F.A.C.; 40 CFR 60.8 and 60.335]
- 11. **Annual Tests:** During each federal fiscal year (October 1 - September 30), each gas turbine shall be tested to demonstrate compliance with the emission standards for CO, NOx, and visible emissions. CO and NOx emissions shall

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

Compressor Station 24

be tested concurrently at permitted capacity. SO₂ emissions shall be calculated based on fuel flow and vendor analysis of fuel sulfur content. [Rule 62-297.310(7)(a), F.A.C.]

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

RECORDS AND REPORTS

13. **Test Reports:** The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix B of this permit. For each required NO_x test, emissions shall be corrected to equivalent terms and compared to the NSPS Subpart GG standard identified in Appendix C of this permit. For each test run, the report shall also indicate the natural gas firing rate (cubic feet per hour), heat input rate (MMBtu per hour), the power output (bhp), percent of base load, and the turbine inlet temperature. [Rule 62-297.310(8), F.A.C.; 40 CFR 60.334]
14. **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 each gas turbine. Operational information shall be summarized and reported with the required Annual Operating Report. [Rule 62-4.070(3), F.A.C.]
15. **Component Replacements:** Each gas turbine system generally consists of the following general components: gas generator, accessory drive system, air inlet and filtration system, fuel delivery system, cooling system, lubrication system, power turbine, power shaft, control system, starting system, and exhaust system with stack. These light-industrial aero-derivative gas turbines are designed with modular components to facilitate quick repairs. Common "wear items" include stator blades, turbine nozzles, turbine buckets, fuel nozzles, combustion chambers, seals, and shaft packings. The modular design extends to complete replacement of the gas generator and power turbine. Replacements are authorized provided the following requirements are met
- Components shall be replaced with functionally equivalent "like-kind" equipment. Replacement components may consist of upgraded equipment, but shall not increase the maximum heat input rate to or emissions from the gas turbine. Replacement components shall be designed to achieve and shall achieve the emissions standards specified in this permit or better.
 - The permittee shall keep the Compliance Authority informed of any scheduled gas generator replacements. Within ten days of first fire on a replacement gas generator, the permittee shall provide the following: date of first fire; certification from the vendor that the replacement gas generator is a functionally equivalent "like-kind" component designed to achieve the emissions standards specified in this permit; specifications including vendor, model number, serial number, maximum heat input rate (MMBtu/hour), power output (bhp), and maximum emission rates; and a preliminary schedule for conducting performance testing. A copy of the vendor certification shall be kept on site with the air permit. Replacement gas generators are subject to the standards of this permit. Within 60 days of replacing a gas generator, the permittee shall conduct emissions stack tests to demonstrate compliance with the emission standards for CO, NO_x, and visible emissions. The permittee shall comply with the requirements for notification, test methods, test procedures, and reporting specified in this permit.
 - To up-rate a gas turbine or increase the maximum heat input rate, the permittee shall apply for prior approval through the air construction permit process.
 - After investigation and for good cause (such as complaints, increased visible emissions or questionable maintenance of control equipment), the Department may require special compliance tests pursuant to Rule 62-297.310(7)(b), F.A.C.

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

SECTION 4. APPENDICES

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- Appendix A. Citation Format
- Appendix B. Common State Regulatory Requirements
- Appendix C. NSPS Subpart GG Requirements for Gas Turbines
- Appendix D. Custom Fuel Monitoring Schedule
- Appendix E. Summary of Potential Emissions

SECTION 4. APPENDIX A

Citation Format

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

REFERENCES TO PREVIOUS PERMITTING ACTIONS

Old Permit Numbers

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

Where: "AC" identifies the permit as an Air Construction Permit

"AO" identifies the permit as an Air Operation Permit

"123456" identifies the specific permit project number

New Permit Numbers

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

Where: "099" represents the specific county ID number in which the project is located

"2222" represents the specific facility ID number

"001" identifies the specific permit project

"AC" identifies the permit as an air construction permit

"AF" identifies the permit as a minor federally enforceable state operation permit

"AO" identifies the permit as a minor source air operation permit

"AV" identifies the permit as a Title V Major Source Air Operation Permit

PSD Permit Numbers

Example: Permit No. PSD-FL-317

Where: "PSD" means issued pursuant to the Prevention of Significant Deterioration of Air Quality

"FL" means that the permit was issued by the State of Florida

"317" identifies the specific permit project

RULE CITATION FORMATS

Florida Administrative Code (F.A.C.)

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

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

Code of Federal Regulations (CFR)

Example: [40 CFR 60.7]

Means: Title 40, Part 60, Section 7

SECTION 4. APPENDIX B

Common State Regulatory Requirements

{Permitting Note: Unless otherwise specified by permit, the following conditions apply to all emissions units and activities at this facility.}

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 these conditions. [Rule 62-4.160(1), F.A.C.]
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. [Rule 62-4.160(2), F.A.C.]
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit. [Rule 62-4.160(3), F.A.C.]
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title. [Rule 62-4.160(4), F.A.C.]
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department. [Rule 62-4.160(5), F.A.C.]
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules. [Rule 62-4.160(6), F.A.C.]
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
 - a. Have access to and copy and records that must be kept under the conditions of the permit;
 - b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated. [Rule 62-4.160(7), F.A.C.]

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

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit. [Rule 62-4.160(8), F.A.C.]

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

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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. [Rule 62-4.160(9), F.A.C.]

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. [Rule 62-4.160(10), F.A.C.]
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. [Rule 62-4.160(11), F.A.C.]
12. This permit or a copy thereof shall be kept at the work site of the permitted activity. [Rule 62-4.160(12), F.A.C.]
13. This permit also constitutes:
 - a. Determination of Best Available Control Technology (not applicable);
 - b. Determination of Prevention of Significant Deterioration (not applicable); and
 - c. Compliance with New Source Performance Standards (applicable).

[Rule 62-4.160(13), F.A.C.]

14. The permittee shall comply with the following:
 - a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - c. Records of monitoring information shall include:
 - 1) The date, exact place, and time of sampling or measurements;
 - 2) The person responsible for performing the sampling or measurements;
 - 3) The dates analyses were performed;
 - 4) The person responsible for performing the analyses;
 - 5) The analytical techniques or methods used; and
 - 6) The results of such analyses.

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

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. [Rule 62-4.160(15), F.A.C.]

EMISSIONS AND CONTROLS

16. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]

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Common State Regulatory Requirements

17. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
18. 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.]
19. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]
20. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permittee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]
21. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]
22. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. [Rule 62-296.320(2), F.A.C.]
23. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20 percent opacity. [Rule 62-296.320(4)(b)1, F.A.C.]
24. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

TESTING REQUIREMENTS

25. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]
26. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2), F.A.C.]
27. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]
28. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C.

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- a. *Required Sampling Time.* Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes. The minimum observation period for a visible emissions compliance test shall be thirty (30) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur.
- b. *Minimum Sample Volume.* Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.
- c. *Calibration of Sampling Equipment.* Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.

[Rule 62-297.310(4), F.A.C.]

29. Determination of Process Variables

- a. *Required Equipment.* The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
- b. *Accuracy of Equipment.* Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

[Rule 62-297.310(5), F.A.C.]

30. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C.
31. Test Notification: The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator. [Rule 62-297.310(7)(a)9, F.A.C.]
32. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]
33. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:
 - a. The type, location, and designation of the emissions unit tested.
 - b. The facility at which the emissions unit is located.
 - c. The owner or operator of the emissions unit.
 - d. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
 - e. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
 - f. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating

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Common State Regulatory Requirements

parameters during each test run.

- g. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
- h. The date, starting time and duration of each sampling run.
- i. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
- j. The number of points sampled and configuration and location of the sampling plane.
- k. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
- l. The type, manufacturer and configuration of the sampling equipment used.
- m. Data related to the required calibration of the test equipment.
- n. Data on the identification, processing and weights of all filters used.
- o. Data on the types and amounts of any chemical solutions used.
- p. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
- q. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
- r. All measured and calculated data required to be determined by each applicable test procedure for each run.
- s. The detailed calculations for one run that relate the collected data to the calculated emission rate.
- t. The applicable emission standard, and the resulting maximum allowable emission rate for the emissions unit, plus the test result in the same form and unit of measure.
- u. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

RECORDS AND REPORTS

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

SECTION 4. 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
001	Engine 2401: Solar Model Mars 90-T13000S gas turbine rated at 13,000 bhp (ISO)
003	Engine 2402: Cooper-Rolls Model No. 501-KC7-DLE gas turbine rated at 7222 bhp (ISO)

NSPS General Provisions

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

40 CFR 60, Subpart GG

Standards of Performance for Stationary Gas Turbines

{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.}

40 CFR 60.330 - Applicability and Designation of Affected Facility

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

40 CFR 60.331 - Definitions

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

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

40 CFR 60.332 - Standard for Nitrogen Oxides

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

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

where:

STD = allowable NOx emissions (percent by volume at 15 percent oxygen and on a dry basis).

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

SECTION 4. APPENDIX C

NSPS Subpart GG Requirements for Gas Turbines

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

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

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

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

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

{Permitting Note: The "Y" value provided by the manufacturer is approximately 11.57 for natural gas. The equivalent emission standard is 187 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.

40 CFR 60.333 - Standard for Sulfur Dioxide

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

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

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

40 CFR 60.334 - Monitoring of Operations

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

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

Department Requirement: The requirement to monitor the nitrogen content of pipeline quality natural gas fired is waived because natural gas is the exclusive fuel and contains negligible amounts of nitrogen. For purposes of complying with the sulfur content monitoring requirements of this rule, the permittee shall comply with the Custom Fuel Monitoring Schedule in Appendix D of this permit.

{Permitting Note: This is consistent with guidance from EPA Region 4 on custom fuel monitoring.}

(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

SECTION 4. APPENDIX C

NSPS Subpart GG Requirements for Gas Turbines

emissions, and the graphs or figures developed under Section 60.335(a).

{Permitting Note: The excess NOx emissions reporting requirements do not apply. The gas turbine uses dry low-NOx combustion technology and not wet injection to control NOx emissions. Also, NOx emissions due to fuel bound nitrogen are considered negligible because natural gas is the exclusive fuel and contains little nitrogen.}

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

Department Requirement: In accordance with the Custom Fuel Monitoring Schedule specified in Appendix D of this permit, any period between two consecutive fuel sulfur analyses shall be reported as excess emissions if the results of the second analysis indicates failure to comply with the fuel sulfur limit of the permit.

40 CFR 60.335 - Test Methods and Procedures

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

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

$$NO_x = (NO_{x0}) (P_r/P_o)^{0.5} e^{19(H_o - 0.00633)} (288^\circ K/T_a)^{1.53}$$

where:

- NO_x = emission rate of NO_x at 15 percent O₂ and ISO standard ambient conditions, volume percent.
- NO_{x0} = observed NO_x concentration, ppm by volume.
- P_r = reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure, mm Hg.
- P_o = observed combustor inlet absolute pressure at test, mm Hg.
- H_o = observed humidity of ambient air, g H₂O/g air.
- e = transcendental constant, 2.718.
- T_a = ambient temperature, °K.

Department Requirement: 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.}

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NSPS Subpart GG Requirements for Gas Turbines

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

Department Requirement: The span value shall be no greater than 75 ppm of nitrogen oxides due to the low NO_x 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.

Department Requirement: The Custom Fuel Monitoring Schedule in Appendix D specifies the requirements for sampling and analyzing the pipeline natural gas.

- (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.

Department Requirement: The Custom Fuel Monitoring Schedule in Appendix D specifies the requirements for sampling and analyzing the pipeline natural gas.

SECTION 4. APPENDIX D
Custom Fuel Monitoring Schedule

Custom Fuel Monitoring Schedule: The Department approves the following Custom Fuel Monitoring Schedule in lieu of the NSPS fuel monitoring requirements in 40 CFR 60.334 of Subpart GG for the gas turbine affected by this project.

1. Because natural gas is the exclusive fuel for the gas turbine and contains negligible amounts of nitrogen, no monitoring of the fuel nitrogen content is required.
2. Fuel sulfur monitoring shall be performed in accordance with the following requirements:
 - a. The natural gas shall be sampled and analyzed for the sulfur content as determined by ASTM methods D4084-82, D3246-81 or more recent versions.
 - b. After first fire in the gas turbine, fuel sulfur monitoring shall be conducted at least twice each month. If this monitoring indicates little variability and compliance with the fuel sulfur limit of this permit for a period of six months, monitoring shall be reduced to once each calendar quarter. If this monitoring indicates little variability and compliance with the fuel sulfur limit of this permit for six calendar quarters, monitoring shall be reduced to twice each year (once each during the first and third calendar quarters).
 - c. The permittee shall provide written notification to the Compliance Authority prior to reducing the frequency of monitoring in accordance with the above custom schedule. The notification shall include the results of the previous fuel sulfur analyses, the current frequency of monitoring, and the future frequency of monitoring.
3. This custom fuel-monitoring plan shall be reevaluated if there is a change in the fuel supply, a substantial change in the fuel quality, or any required monitoring indicates failure to comply with the fuel sulfur limit of this permit. For such cases, fuel sulfur monitoring shall resume on a weekly basis while the Department reevaluates the monitoring schedule.

[Rule 62-4.070(3); 40 CFR 60.334]

SECTION 4. APPENDIX D
Summary of Potential Emissions

For informational purposes only, the following table summarizes the potential emissions from Station 24.

EU No.	Description	Hourly Emissions, lb/hour						Annual Emissions, ton/year					
		CO	NOx	PM	SO2	VOC	HAPs	CO	NOx	PM	SO2	VOC	HAPs
001	Engine 2401, 13,000 bhp Gas Turbine	12.3	10.1	0.7	3.1	0.4	0.12	53.9	44.2	3.3	13.5	1.5	0.5
002	Miscellaneous Support Activities	---	---	---	---	---	---	0.6	2.2	0.2	0.2	0.6	0.6
	GEN03, 443 bhp Emergency Generator	2.4	8.8	0.7	0.8	0.02	Neg.	0.6	2.2	0.2	0.2	Neg.	Neg.
	Fugitive VOC Leaks	---	---	---	---	---	---	---	---	---	---	0.6	0.6
	Oily Water Tank	---	---	---	---	---	Neg.	---	---	---	---	Neg.	Neg.
	Diesel Tank	---	---	---	---	---	Neg.	---	---	---	---	Neg.	Neg.
	Condensate Tank	---	---	---	---	---	Neg.	---	---	---	---	Neg.	Neg.
003	Engine 2402, 7222 bhp gas turbine	7.0	5.7	0.4	1.7	1.5	0.3	30.5	25.0	1.8	7.6	6.5	0.3
Total for Station 24								85.0	71.4	5.3	21.3	8.6	1.4

Notes:

1. All VOC emissions from fugitive leaks were assumed to be HAPs.
2. Hourly emissions are based on manufacturer's equipment specifications.
3. Annual emissions are based on information in the application and permit conditions.

