



Jeb Bush  
Governor

# Department of Environmental Protection

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

David B. Struhs  
Secretary

December 6, 2002

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Richard Craig, V.P. of Southeast Operations  
Florida Gas Transmission Company  
1400 Smith Street  
Houston, TX 77002

Re: Draft Air Permit No. 1230034-011-AC  
Florida Gas Transmission Company, Station No. 15  
Up-Rating of Engine No. 1507 and Revising PM Standards for Engine No. 1506

Dear Mr. Craig:

Enclosed is one copy of the draft permit that authorizes the up-rating of existing gas turbine Compressor Engine No. 1507 from 13,000 bhp to 15,000 bhp and revises the particulate matter requirements for Compressor Engine No. 1506. The equipment is installed at existing Compressor Station No. 15, which is located near Perry in Taylor 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 of 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

TLV/AAL/jfk

Enclosures

"More Protection, Less Process"

Printed on recycled paper.

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY				
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	<table border="1"> <tr> <td>A. Received by (Please Print Clearly)</td> <td>B. Date of Delivery</td> </tr> <tr> <td><i>H. Wyatt</i></td> <td><i>1-2-03</i></td> </tr> </table>	A. Received by (Please Print Clearly)	B. Date of Delivery	<i>H. Wyatt</i>	<i>1-2-03</i>
A. Received by (Please Print Clearly)	B. Date of Delivery				
<i>H. Wyatt</i>	<i>1-2-03</i>				
<p>1. Article Addressed to:</p> <p>Mr. Richard Craig V.P. of Southeast Operations Florida Gas Transmission Company 1400 Smith Street Houston, TX 77002</p>	<p>C. Signature</p> <p><input checked="" type="checkbox"/> <i>H. Wyatt</i>      <input type="checkbox"/> Agent  <input type="checkbox"/> Addressee</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes  If YES, enter delivery address below: <input type="checkbox"/> No</p>				
<p>2. <u>7001 0320 0001 3692 7454</u></p>	<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail      <input type="checkbox"/> Express Mail  <input type="checkbox"/> Registered      <input type="checkbox"/> Return Receipt for Merchandise  <input type="checkbox"/> Insured Mail      <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee)      <input type="checkbox"/> Yes</p>				
<p>PS Form 3811, July 1999      Domestic Return Receipt      102595-00-M-0952</p>					

<b>U.S. Postal Service</b> <b>CERTIFIED MAIL RECEIPT</b> <i>(Domestic Mail Only; No Insurance Coverage Provided)</i>											
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<table border="1"> <tr> <td>Sent To</td> <td>Richard Craig</td> </tr> <tr> <td>Street, Apt. No. or PO Box No.</td> <td>1400 Smith Street</td> </tr> <tr> <td>City, State, ZIP+4</td> <td>Houston, TX 77002</td> </tr> </table>		Sent To	Richard Craig	Street, Apt. No. or PO Box No.	1400 Smith Street	City, State, ZIP+4	Houston, TX 77002				
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City, State, ZIP+4	Houston, TX 77002										
<p>PS Form 3800, January 2001      See Reverse for Instructions</p>											

**INTENT TO ISSUE AIR CONSTRUCTION PERMIT**

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In the Matter of an  
Application for Air Permit by:

Florida Gas Transmission Company  
1400 Smith Street  
Houston, TX 77002

Taylor Compressor Station No. 15  
Air Permit No. 1230034-011-AC  
Compressor Engine Nos. 1506/1507

*Authorized Representative:*

Mr. Richard Craig, V.P. of Southeast Operations

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 November 6, 2002 to the Department for a permit that authorizes the up-rating of existing gas turbine Compressor Engine No. 1507 from 13,000 bhp to 15,000 bhp. The applicant later requested a revision of the particulate matter requirements for Compressor Engine No. 1506. The project is located near Perry in Taylor County, Florida.

The Department has permitting jurisdiction under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (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 Construction Permit. 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. 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 of Intent to Issue Air 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.

## INTENT TO ISSUE AIR CONSTRUCTION PERMIT

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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

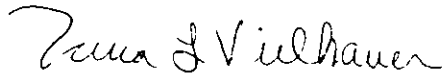
**INTENT TO ISSUE AIR CONSTRUCTION PERMIT**

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

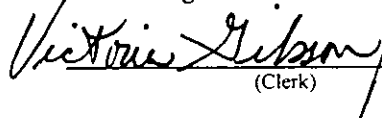
**CERTIFICATE OF SERVICE**

The undersigned duly designated deputy agency clerk hereby certifies that this Intent to Issue Air Construction Permit package (including the Public Notice of Intent to Issue Air Construction Permit, 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 12/10/02 to the persons listed:

Mr. Richard Craig, FGTC\*  
Mr. Jim Thompson, FGTC  
Mr. Jim Burrow, FGTC  
Mr. Kevin McGlynn, McGlynn Consulting Co.  
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.

 / December 10, 2002  
(Clerk) (Date)

# **PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT**

## **STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Draft Air Permit No. 1230034-011-AC

Florida Gas Transmission Company  
Existing Taylor Compressor Station No. 15  
Phase VI Project, Units 1506/1507

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to Florida Gas Transmission Company that authorizes the up-rating of existing gas turbine Compressor Engine No. 1507 from 13,000 bhp to 15,000 bhp and revises the particulate matter requirements for Compressor Engine No. 1506. The equipment is installed at existing Compressor Station No. 15, which is located near Perry in Taylor County, Florida. The applicant's authorized representative is Mr. Richard Craig, Vice President of Southeastern Operations. The applicant's mailing address is Florida Gas Transmission Company, 1400 Smith Street, Houston, TX 77251.

Existing Compressor Engine No. 1507 consists of a Solar Mars 100 T-15000S gas turbine de-rated to 13,000 bhp. Fired exclusively with natural gas, the up-rated unit has the potential to emit the following pollutants: 59 tons of carbon monoxide per year; 49 tons of nitrogen oxides per year; 4 tons of particulate matter per year; 15 tons of sulfur dioxide per year; and 2 ton of volatile organic compounds per year. However, recent previous projects included the addition of a 7200 bhp gas turbine compressor engine (Unit 1508) as well as the shutdown of an existing 13,000 bhp gas turbine. A review of the recent actions shows that the combined projects remain minor with respect to the Rule 62-212.400, F.A.C., which regulates the Prevention of Significant Deterioration (PSD). The project also includes a revision of the particulate matter emission rates for Compressor Engine No. 1506 based on new published emission factors.

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 period shall constitute a waiver of that person's right to request an administrative

**NOTICE TO BE PUBLISHED IN THE NEWSPAPER**

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  
(111 S. Magnolia Drive, Suite 4)  
2600 Blair Stone Road, MS #5505  
Tallahassee, Florida, 32399-2400  
Telephone: 850/488-0114  
Fax: 850/922-6979

Florida Department of Environmental Protection  
Northeast District Office  
Air Resources Section  
7825 Baymeadows Way, Suite 200B  
Jacksonville, Florida 32256-7590  
Telephone: 904/807-3300  
Fax: 904/448-4363

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 Bureau of Air Regulation's review 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. 1230034-011-AC  
Emissions Unit No. 002 - Revision of PM Standards for Compressor Engine No. 1506  
Emissions Unit No. 006 - Up-Rating Existing Compressor Engine No. 1507

**COUNTY**

Taylor County

**APPLICANT**

Florida Gas Transmission Company  
ARMS Facility ID No. 1230034  
Existing Taylor Compressor Station No. 15

**PERMITTING  
AUTHORITY**

Florida Department of Environmental Protection  
Division of Air Resources Management  
Bureau of Air Regulation  
New Source Review Section



December 4, 2002

*{Filename: FGT 15VI TEPD.doc}*



# TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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## 1. GENERAL PROJECT INFORMATION

### Applicant Name and Address

Florida Gas Transmission Company  
1400 Smith Street  
Houston, TX 77002

### Authorized Representative:

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

### Processing Schedule

11/06/02: Received application to modify existing Engine No. 1507 (EU-006); complete.

11/21/02: Received request to revise particulate emission rates for Engine 1506 (EU-002); complete.

### Facility Description and Location

Florida Gas Transmission Company operates existing Compressor Station No. 15, which is located on Pisgah Road approximately 1 mile east of U.S. Highway 19 near Perry in Taylor County, Florida. This is an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to the Florida and National Ambient Air Quality Standards (NAAQS).

### Standard Industrial Classification Code (SIC)

SIC No. 4922 – Natural Gas Transmission

### Regulatory Categories

**Title III:** The facility is a major source of hazardous air pollutants (HAP).

**Title IV:** The facility does not operate units subject to the acid rain provisions of the Clean Air Act.

**Title V:** The facility is a Title V major source of air pollution (Chapter 62-213, Florida Administrative Code (F.A.C.)).

**PSD:** The facility is a PSD-major source of air pollution (Rule 62-212.400, F.A.C.).

**NSPS:** The facility operates units subject to the New Source Performance Standards (40 CFR 60).

### Project Description

Florida Gas Transmission Company proposes to up-rate existing gas turbine Compressor Engine No. 1507 from 13,000 bhp to 15,000 bhp. The up-rating will increase the station's compressor capacity, which is part of the Phase VI projects intended to improve the reliability and availability of natural gas pipeline. The up-rating will result in a slightly higher maximum heat input rate as well as emissions rates. As discussed later in this report, this change will be reviewed in conjunction with a recent replacement of this compressor engine to determine PSD applicability for the combination of projects.

In addition, the applicant requests a revision of the particulate matter emission standards for Emissions Unit 006 (Compressor Engine No. 1506), which was established in Air Permit No. PSD-FL-160. This will be discussed as a separate issue at the end of this report. The Bureau of Air Regulation processed this application because Florida Gas Transmission Company requested that all Phase VI projects be reviewed in Tallahassee for purposes of consistency.

## 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 F.A.C. This project is subject to the applicable rules and regulations defined in the following Chapters of the F.A.C.

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

<u>Chapter</u>	<u>Description</u>
62-4	Permitting Requirements
62-204	Ambient Air Quality Requirements, PSD Increments, and Federal Regulations Adopted by Reference
62-210	Required Permits, Public Notice, Reports, Stack Height Policy, Circumvention, Excess Emissions, Forms
62-212	Preconstruction Review, PSD Requirements, and BACT Determinations
62-213	Operation Permits for Major Sources of Air Pollution
62-296	Emission Limiting Standards
62-297	Test Methods and Procedures, Continuous Monitoring Specifications, and Alternate Sampling 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).

<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

### General PSD Applicability

The Department regulates major air pollution sources in accordance with Florida's Prevention of Significant Deterioration (PSD) program, as approved by the EPA in Florida's State Implementation Plan and defined in Rule 62-212.400, F.A.C. A PSD review is required in areas that are currently in attainment with the National Ambient Air Quality Standard (NAAQS) or areas designated as unclassifiable for a given pollutant. A new facility is considered "major" with respect to PSD if it emits or has the potential to emit:

- 250 tons per year or more of any regulated air pollutant, or
- 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the 28 PSD Major Facility Categories (Table 62-212.400-1, F.A.C.), or
- 5 tons per year of lead.

For new projects at PSD-major sources, each regulated pollutant is reviewed for PSD applicability based on emission thresholds known as the Significant Emission Rates listed in Table 62-212.400-2, F.A.C. Pollutant emissions from the project exceeding these rates are considered "significant" and the applicant must employ the Best Available Control Technology (BACT) to minimize emissions of each such pollutant and evaluate the air quality impacts. Although a facility may be "major" with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several "significant" regulated pollutants.

The proposed project is located in Taylor County, Florida, an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to a National Ambient Air Quality Standard (NAAQS). The facility is an existing PSD-major source and the project must be reviewed for PSD applicability. The following section provides a detailed PSD review for the proposed project.

### **3. PROJECT REVIEW**

#### Brief Discussion of Emissions

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

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

*"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 (SO<sub>2</sub>) 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 SO<sub>2</sub>, 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 H<sub>2</sub>, 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 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 be minimized by the efficient combustion of natural gas, which is almost completely combusted at the high operating temperatures in the gas turbine.

### Permitting History

The existing facility operates as a compressor station in Taylor County for Florida Gas Transmission Company's natural gas pipeline. It currently consists of five 2000 bhp reciprocating internal combustion engines, one 4000 bhp reciprocating internal combustion engine, a 13,000 gas turbine compressor engine, a 7200 bhp gas turbine compressor engine, and miscellaneous support equipment. All units fire pipeline natural gas. The following summarizes the permitting history for this station.

- In 1962, three 2000 bhp reciprocating engines were installed (Engines Nos. 1501, 1502, and 1503).
- In 1966, a 2000 bhp reciprocating engine was installed (Engine No. 1504).
- In 1968, a 2000 bhp reciprocating engine was installed (Engine No. 1505).

*{Note: The installation of the above units preceded Florida's air construction permit program requirements. These units are collectively identified in the ARMS database as Emissions Unit No. 001.}*

- In 1991, a 4000 bhp reciprocating engine was installed (Engine No. 1506) subject to Air Permit No. PSD-FL-160. *{Note: This unit is identified in the ARMS database as Emission Unit No. 002.}*
- In 1994, a 12,600 bhp gas turbine was installed (Engine No. 1507), subject Air Permit No. PSD-FL-202. *{Note: This unit is identified in the ARMS database as Emissions Unit No. 003.}*
- In 2001, Permit No. 1230034-007-AC was issued authorizing the installation of a 7200 bhp gas turbine (Engine No. 1508) and the up-rating of existing Compressor Engine No. 1507 from 12,600 bhp to 13,180

**TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION**

bhp. Emissions from the project did not trigger PSD. *{Note: The ARMS database identified the new 7200 bhp gas turbine as Emissions Unit No. 004 and miscellaneous support equipment as Emissions Unit No. 005.}*

- In 2002, Permit No. 1230034-009-AC was issued authorizing the replacement of existing gas turbine Engine No. 1507 (Solar Mars 90T-13000) with a Solar Mars 100T-15000S de-rated to 13,000 bhp (Solar Mars 100 T-13000S). The project included a netting analysis showing that the project remained below the PSD significant emission rates and avoided PSD preconstruction review. The new engine is still identified by Florida Gas Transmissions Company as Engine No. 1507. *{Note: In the ARMS database, Emissions Unit 003 was marked "inactive" as a shutdown unit and Emissions Unit No. 006 was added as the new Engine No. 1507.}*

For the current project, the applicant requests up-rating the new Compressor Engine 1507 from 13,000 bhp to full capacity at 15,000 bhp (Solar Mars 100 T-15000S). This will result in a slightly higher heat input rate and increased emissions. Due to the timing of the requests, the recent changes will be considered "phased projects". Therefore, the Department will review the current request in conjunction with the projects in 2001 and 2002 to determine PSD applicability.

Applicant's PSD Applicability Review

The applicant provided the following summary related to PSD applicability.

**Table 3A. PSD Applicability Summary - Applicant**

Pollutant	Net Change in Potential Emissions (Tons Per Year)	Significant Emissions Rate (Tons Per Year)	PSD Review Required?
CO	5.9	100	No
NOx	4.9	40	No
PM/PM10	0.5	25/15	No
SO2	1.2	40	No
VOC	-0.1	40	No

The applicant's analysis compares the differences in potential emissions for all emissions units before and after the project. The Department disagrees with this approach. For projects not involving steam electrical generating units, the PSD applicability review requires a comparison of future potential emissions to past actual emissions of the units that constitute the "project". The applicant also provided the following summary.

**Table 3B. Recent Potential to Emit Changes at Station No. 15 - Applicant**

Project	Potential Emission Rate Changes	
	NOx, TPY	CO, TPY
Phase IV	0.0	0.0
Phase V	26.4	34.8
Phase VI	4.9	5.9
Total Changes	31.3	40.7

Again, comparing potential increases from previous projects is not appropriate for determining PSD applicability.

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

### Department's PSD Applicability Review

The Department's review considers the following:

- The "affected units" for the project are the retired Compressor Engine No. 1507 (Solar Model No. Mars 90T-13000), the new Compressor Engine No. 1507 (Solar Model No. Mars 100T-15000), and the new Compressor Engine No. 1508 (Cooper-Roll Model 501-KC7 DLE).
- The retired Compressor Engine No. 1507 is shut down and has no future potential emissions. Past actual emissions from the retired Compressor Engine No. 1507 are based on the average hours of operation during 2000 and 2001, which is 8361 per year (ARMS database). CO and NO<sub>x</sub> emissions are based on the 2-year test averages for these years (ARMS database). PM emissions were based on the emission factor of 0.0066 lb/MMBtu from AP-42 Table 3.1-2a. SO<sub>2</sub> emissions (3.61 lb/hour) and VOC emissions (0.67 lb/hour) are based on the maximum hourly emission rates specified in the Title V permit.
- New Compressor Engine No. 1507 has not been constructed and has no past actual emissions. Although constructed, new Compressor Engine No. 1508 has not yet established "normal" operations and therefore, has no past actual emissions. Future potential emissions from new Compressor Engine Nos. 1507 and 1508 are based on full operation, which is 8760 hours per year. CO, NO<sub>x</sub>, PM, SO<sub>2</sub>, and VOC emissions are based on the maximum hourly emission rates reported in the application (Compressor Engine No. 1507) and Permit No. 1230034-007-AC (Compressor Engine No. 1508).

The above considerations evaluate the full emissions impacts from the recent combined projects to increase station compressor capacity. The following table summarizes the annual emissions and PSD applicability for this project.

**Table 3C. Department's PSD Applicability Summary**

Pollutant	Annual Emissions, Tons Per Year			Significant Emissions Rate (Tons Per Year)	PSD?
	Past Actual	Future Potential	Net Increase		
CO	17.6	89.8	72	100	No
NO <sub>x</sub>	36.0	73.6	38	40	No
PM/PM <sub>10</sub>	3.8	5.3	1	25/15	No
SO <sub>2</sub>	15.1	22.3	7	40	No
VOC	2.9	2.6	≈0	40	No

As shown in the above table, the net emissions increases from the series of recent projects will not exceed the PSD significant emissions rates. Therefore, the project is not subject to PSD preconstruction review. In addition, the applicant estimates that total emissions of hazardous air pollutants (HAP) from Unit 1507 will be less than 1 ton per year. This is much less than the HAP thresholds that would trigger a case-by-case MACT determination.

### NSPS Subpart GG Requirements

The Unit 1507 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 NO<sub>x</sub> and SO<sub>2</sub> as well as testing and monitoring requirements. In general, the emissions standards are:

- NO<sub>x</sub> emissions ≤ 190 ppmvd; and
- SO<sub>2</sub> emissions are limited by firing only fuels containing 0.8 percent sulfur by weight or less.

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Based on the manufacturer's estimated performance, the gas turbine will readily comply with the NSPS requirements. The draft permit includes lower emissions standards for several pollutants that will ensure that the project remains minor with respect to PSD applicability.

### Draft Emissions Standards

The draft permit requires the permanent shutdown of Emissions Unit 003 (retired Compressor Engine No. 1507) and establishes the new Solar Mars 100 T-15000S as Emissions Unit 006 (new Compressor Engine No. 1507). Installation of Compressor Engine No. 1508 continues to be authorized by Permit No. 1230034-009-AC. Based on the vendor information and applicant's request, the Department specifies the following emissions standards.

**Table 3D. Draft Emissions Standards for Compressor Engine 1507**

Pollutant	Standards	Equivalent Maximum Emissions <sup>f</sup>		Rule Basis <sup>g</sup>
		lb/hour	TPY	
CO <sup>a</sup>	50.0 ppmvd @ 15% O <sub>2</sub>	13.5	59.30	Avoid Rule 62-212.400, F.A.C.
NO <sub>x</sub> <sup>b</sup>	25.0 ppmvd @ 15% O <sub>2</sub>	11.1	48.70	Avoid Rule 62-212.400, F.A.C. 40 CFR 60.332
SO <sub>2</sub> <sup>c</sup>	10.0 grains of sulfur per 100 SCF of gas	3.4	14.89	Avoid Rule 62-212.400, F.A.C. 40 CFR 60.333
Opacity <sup>d</sup>	10% opacity, 6-minute average	Not Applicable		Rule 62-4.070(3), F.A.C.
PM <sup>e</sup>	Efficient combustion of natural gas	0.8	3.50	Rule 62-4.070(3), F.A.C.
VOC <sup>e</sup>	Efficient combustion of natural gas	0.4	1.75	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 NO<sub>x</sub> 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 SO<sub>2</sub> 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. For both PM and VOC, the efficient combustion of clean fuels is indicated by compliance with the opacity and CO standards. Equivalent maximum PM emissions are based on a factor of 0.0066 lb/MMBtu heat input from AP-42 Table 3.1-2a. Equivalent maximum VOC emissions are based on a total hydrocarbon factor of 25.0 ppmvd @ 15% oxygen from the vendor and the conservative assumption that 10% the hydrocarbons are regulated (non-methane) VOC. No testing is required.
- f. Equivalent maximum emissions are based on the maximum expected emissions, permitted capacity, a compressor inlet air temperature of 59° F, and 8760 hours of operation per year.
- g. Compliance with the emissions standards of this permit ensure that the project remains a minor source of air pollution with respect to PSD.

### Compliance Methods

The gas turbine shall be tested initially and annually for emissions of CO, NO<sub>x</sub>, and visible emissions. Testing for CO and NO<sub>x</sub> shall be conducted concurrently. SO<sub>2</sub> emissions shall be calculated and reported based on an analysis of the natural gas fuel sulfur content. The draft permit includes a custom fuel-monitoring schedule for fuel sulfur that meets the general requirements of EPA's most recent guidance regarding

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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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.

*Note: Permit No. 1230034-007-AC issued in 2001 continues to regulate the initial construction of the 7200 bhp Compressor Engine No. 1508 (EU-004).*

### 4. REVISION OF PARTICULATE MATTER STANDARD FOR UNIT 1506

The applicant also requests a revision of the particulate matter standards for Emissions Unit 006 (FGTC Unit 1506), which was established in Air Permit No. PSD-FL-160 issued on May 8, 1991. A review of this permit shows that the original project was subject to PSD preconstruction review only for NO<sub>x</sub> emissions. However, Condition No. 1 limits particulate matter emissions (PM/PM<sub>10</sub>) to 0.13 lb/hour and 0.6 tons/year. These limits were based on a general AP-42 emission factor in Section 1.4 for *external* natural gas combustion of 5 lb/MMscf of gas, which is equivalent to about 0.005 lb/MMBtu heat input. On September 19, 1993, Permit No. PSD-FL-160 was amended to reduce the emissions factor to 4.23 lb/MMscf and increase the heat input rate from 27.2 to 32.18 MMBtu per hour. Hourly and annual particulate matter emissions remained the same.

Although these factors may have been the best available estimate at that time, AP-42 now includes Section 3.2, which was specifically developed for natural gas-fired reciprocating *internal* combustion engines. According to the most recent version of AP-42, the total PM emission factor (filterable plus condensable) for a 2-cycle, lean burn engine is 0.04831 lb/MMBtu heat input (Table 3.2-1). Even though the new factor is about ten times higher than the previous factor, the potential particulate matter emissions for the original project remain well below the PSD significant emission rates of 25/15 tons per year for PM/PM<sub>10</sub> (7.4 tons per year based on the maximum heat input rate of 34.85 MMBtu/hour identified in the current Title V operation permit).

The PSD permit does not require any initial tests or periodic tests to confirm the emission rates. Apparently, compliance was determined solely by the AP-42 emission factor. It is noted that a change in the accepted emission factor does not represent an increase in actual emissions, but rather recognizes that past emissions may have been higher than expected and reported. The Department approves the request and will replace the particulate matter emissions standards with the following text, "Particulate matter emissions are minimized by good combustion design with the firing of natural gas as the exclusive fuel."

### 5. 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.

# DRAFT PERMIT

## PERMITTEE:

Florida Gas Transmission Company  
1400 Smith Street  
Houston, TX 77002

### *Authorized Representative:*

Mr. Richard Craig, V.P. of Southeast Operations

Taylor Compressor Station No. 15 Air Permit No. 1230034-011-AC Facility ID No. 1230034 SIC No. 4922 Permit Expires: December 31, 2003
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## PROJECT AND LOCATION

This permit authorizes the up-rating of existing gas turbine Compressor Engine No. 1507 from 13,000 bhp to 15,000 bhp and revises the particulate matter requirements for Compressor Engine No. 1506. The equipment is installed at existing Compressor Station No. 15, which is located on Pisgah Road approximately 1 mile east of U.S. Highway 19 near Perry in Taylor County, Florida. The UTM coordinates are Zone 17, 249.02 km East, and 3339.60 km North.

## STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.) 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.

## CONTENTS

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

(Draft)

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Howard L. Rhodes, Director  
Division of Air Resources Management

(Date)



## SECTION 1. GENERAL INFORMATION (Draft)

### FACILITY AND PROJECT DESCRIPTION

The existing facility operates as a compressor station in Taylor County for Florida Gas Transmission Company's natural gas pipeline. It consists of five 2000 bhp reciprocating internal combustion engines, one 4000 bhp reciprocating internal combustion engine, a 15,000 gas turbine compressor engine, a 7200 bhp gas turbine compressor engine, and miscellaneous support equipment. This project affects only the following emissions units.

ID	Emission Unit Description
002	<b>Compressor Engine No. 1506</b> – Existing 4000 bhp gas-fired reciprocating internal combustion engine (Cooper Bessemer Model No. 8W-330-C2) operating as a compressor engine.
003	<b>INACTIVE</b> - Formerly identified as Compressor Engine 1507, this Solar Model No. Mars 90 T-13000S gas turbine has been removed.
006	<b>Compressor Engine No. 1507</b> - New 15,000 bhp gas turbine (Solar Model No. Mars 100 T-13000S) installed as a compressor engine subject to the conditions of this permit.

### REGULATORY CLASSIFICATION

Title III: The facility is a major source of hazardous air pollutants (HAP).

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

Title V: The facility is a Title V major source of air pollution (Chapter 213, F.A.C.).

PSD: The facility is a PSD-major source of air pollution (Rule 62-212.400, F.A.C.).

NSPS: The facility operates units subject to the New Source Performance Standards (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.

- Request to revise particulate emission rates for Engine 1506 (EU-002) received on 11/21/02;
- Permit application received on 11/06/02;
- Permit No. 1230034-009-AC previously issued on 07/03/02; and
- Permit No. 1230034-007-AC previously issued on 10/26/01.

## SECTION 2. ADMINISTRATIVE REQUIREMENTS (Draft)

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1. Permitting Authority: All documents related to PSD preconstruction review shall be submitted to the Department's Bureau of Air Regulation at 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400. All other applications for permits to construct, modify, or operate emissions units shall be submitted to the Department's 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 Northeast District Office at the above address.
3. Appendices: The following Appendices are attached as part of this permit: Appendix CF (Citation Format); Appendix FM (Custom Fuel Monitoring Plan for NSPS Gas Turbines); Appendix GC (General Conditions); Appendix GG (NSPS Subpart GG Requirements for Gas Turbines); and Appendix SC (Standard Conditions).
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.); and Title 40, Part 60 of the Code of Federal Regulations (CFR), adopted by reference in Rule 62-204.800, F.A.C. The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code. 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. Source Obligation: This project is subject to Rule 62-212.400(2)(g), F.A.C., which states, "If a previously permitted facility or modification becomes a facility or modification which would be subject to the preconstruction review requirements of this rule if it were a proposed new facility or modification solely by virtue of a relaxation in any federally enforceable limitation on the capacity of the facility or modification to emit a pollutant (such as a restriction on hours of operation), which limitation was established after August 7, 1980, then at the time of such relaxation the preconstruction review requirements of this rule shall apply to the facility or modification as though construction had not yet commenced on it." This includes, but is not limited to, increases in the heat input rates or pollutant emission rates. [Rule 62-212.400(2)(g), F.A.C.]
8. Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may require by law. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

**SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (Draft)**

**A. EU 002 - 4000 bhp Reciprocating Compressor Engine No. 1507**

This section of the permit addresses the following existing emissions unit.

**Emissions Unit No. 005 - Compressor Engine No. 1506**

The existing compressor engine is a 4000 bhp reciprocating internal combustion engine fired exclusively with pipeline natural gas.

**APPLICABLE REQUIREMENT**

1. Previous Permits: This permit supplements all previously issued air construction and operation permits for this emissions unit. Except for the change noted below, the unit remains subject to the conditions of all other valid air construction and operations permits. [Rule 62-4.070, F.A.C.]
2. Particulate Matter: For Compressor Engine No. 1506 (EU 002), particulate matter emissions are minimized by good combustion design with the firing of natural gas as the exclusive fuel. This requirement supersedes the particulate matter standards (TSP and PM<sub>10</sub>) in Condition No. 1 of Air Permit No. PSD-FL-160, as amended. *{Permitting Note: This change does not result in any increases in actual emissions of particulate matter. All other standards of Air Permit No. PSD-FL-160 remain unaffected.}*

## SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (Draft)

### B. EU 006 - 15,000 bhp Gas Turbine Compressor Engine No. 1507

This section of the permit addresses the following emissions unit.

#### Emissions Unit No. 006 - Compressor Engine No. 1507

*Description:* The new gas turbine is a Solar Mars 100 T-15000S that will be used as a compressor engine for the natural gas pipeline.

*Fuel:* The gas turbine fires only natural gas (SCC No 2-02-002-01). The maximum natural gas firing rate is approximately 118,200 cubic feet per hour based on a heating value of 1040 BTU per SCF of gas.

*Capacity:* At 123 MMBtu per hour of heat input, the gas turbine produces approximately 15,000 bhp (ISO). The gas turbine typically operates near capacity.

*Controls:* Lean premix combustion technology reduces NOx emissions. The efficient combustion of natural gas at high temperatures minimizes emissions of CO, PM/PM<sub>10</sub>, SO<sub>2</sub>, and VOC.

*Stack Parameters:* When operating at capacity, exhaust gases exit a rectangular stack (7.55 feet by 7.55 feet) that is 60 feet tall with a flow rate of approximately 191,800 acfm at 910° F.

#### APPLICABLE STANDARDS AND REGULATIONS

1. NSPS Requirements: The 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 GG of this permit. The Department determines that the conditions in this section are at least as stringent, or more stringent than, the NSPS requirements of Subpart GG. [Rule 62-4.070(3), F.A.C.; 40 CFR 60, Subpart GG]

#### EQUIPMENT

2. Emissions Unit 003: The existing Solar Mars 90 T-13000S gas turbine shall be permanently shutdown and removed from the site. The shutdown unit will be replaced by Emissions Unit 006, which will be identified as Compressor Engine No. 1507. [Applicant Request; Rule 62-212.400(PSD), F.A.C.]
3. New Compressor Engine No. 1507: The permittee is authorized to install a new Solar Mars 100 T-15000S gas turbine that is rated at 15,000 bhp (ISO). The permittee shall tune, operate and maintain the gas turbine's lean premix combustion system to reduce emissions of nitrogen oxides below the permitted limits. Ancillary equipment includes the automated gas turbine control system, an inlet air filtration system, and an exhaust stack. [Applicant Request]

#### PERFORMANCE RESTRICTIONS

4. Permitted Capacities: The maximum heat input rate to the gas turbine shall not exceed 123 MMBtu per hour while producing approximately 15,000 bhp based on a compressor inlet air temperature of 59° F, 100% load, and a higher heating value (HHV) of 1040 BTU per SCF for natural gas. Heat input rates will vary depending upon gas turbine characteristics, load, and ambient conditions. For the gas turbine, 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.]
5. Authorized Fuel: The 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.]
6. Restricted Operation: The hours of operation for the gas turbine are not limited (8760 hours per year). Except for startup and shutdown, operation below 50% base load is prohibited. [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

**SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (Draft)**

**B. EU 006 - 15,000 bhp Gas Turbine Compressor Engine No. 1507**

**EMISSIONS STANDARDS**

7. Emissions Standards: Emissions from the gas turbine shall not exceed the following limits for carbon monoxide (CO), nitrogen oxides (NOx), opacity, particulate matter (PM), sulfur dioxide (SO<sub>2</sub>), and volatile organic compounds (VOC).

Pollutant	Standards	Equivalent Maximum Emissions <sup>f</sup>		Rule Basis <sup>g</sup>
		lb/hour	TPY	
CO <sup>a</sup>	50.0 ppmvd @ 15% O <sub>2</sub>	13.5	59.30	Avoid Rule 62-212.400, F.A.C.
NOx <sup>b</sup>	25.0 ppmvd @ 15% O <sub>2</sub>	11.1	48.70	Avoid Rule 62-212.400, F.A.C. 40 CFR 60.332
SO <sub>2</sub> <sup>c</sup>	10.0 grains of sulfur per 100 SCF of gas	3.4	14.89	Avoid Rule 62-212.400, F.A.C. 40 CFR 60.333
Opacity <sup>d</sup>	10% opacity, 6-minute average	Not Applicable		Rule 62-4.070(3), F.A.C.
PM <sup>e</sup>	Efficient combustion of natural gas	0.8	3.50	Rule 62-4.070(3), F.A.C.
VOC <sup>e</sup>	Efficient combustion of natural gas	0.4	1.70	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 SO<sub>2</sub> 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. For both PM and VOC, the efficient combustion of clean fuels is indicated by compliance with the opacity and CO standards. Equivalent maximum PM emissions are based on a factor of 0.0066 lb/MMBtu heat input from AP-42 Table 3.1-2a. Equivalent maximum VOC emissions are based on a total hydrocarbon factor of 25.0 ppmvd @ 15% oxygen from the vendor and the conservative assumption that 10% the hydrocarbons are regulated (non-methane) VOC. No testing is required.
- f. Equivalent maximum emissions are based on the maximum expected emissions, permitted capacity, a compressor inlet air temperature of 59° F, and 8760 hours of operation per year. For comparison purposes, the permittee shall provide a reference table with the initial compliance test report of mass emission rates versus the compressor inlet temperatures. Each test report shall include measured mass emission rates for CO, NOx and SO<sub>2</sub>. Mass emission rates for SO<sub>2</sub> 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. Compliance with the emissions standards of this permit ensure that the project remains a minor source of air pollution with respect to PSD.

**SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (Draft)**

**B. EU 006 - 15,000 bhp Gas Turbine Compressor Engine No. 1507**

**EMISSIONS PERFORMANCE TESTING**

8. **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 <i>{Permitting Note: These methods shall be used as necessary to support other required methods.}</i>
9	Determination of Opacity
10	Determination of Carbon Monoxide Emissions <i>{Permitting Note: This method shall be based on a continuous sampling train.}</i>
19	Determination of Sulfur Dioxide and Nitrogen Oxides Emission Rates <i>{Permitting Note: This method shall be used as necessary to support other required methods.}</i>
20	Determination of Nitrogen Oxides, Sulfur Dioxide and Diluent Emissions from Gas Turbines

Tests shall also be conducted in accordance with the requirements specified Appendix SC of this permit. The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]

9. **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 operation 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 and reported 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]
10. **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 and reported based on fuel flow and vendor analysis of fuel sulfur content. In addition to the test results, each report shall include a general description of the maintenance activities and operation of this facility since the last test. [Rule 62-297.310(7)(a)4, F.A.C.]
11. **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**

12. **Test Reports:** The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix SC of this permit. In addition, NOx emissions shall be corrected to ISO ambient atmospheric conditions and compared to the NSPS Subpart GG standard identified in Appendix GG of this permit for each required test. 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 peak load, and the inlet compressor temperature. [Rule 62-297.310(8), F.A.C.; 40 CFR 60.334]

**SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (Draft)**

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**B. EU 006 - 15,000 bhp Gas Turbine Compressor Engine No. 1507**

13. Custom Fuel Monitoring Schedule: In lieu of the NSPS fuel monitoring requirements of 40 CFR 60.334 of Subpart GG, the Department approves the custom fuel-monitoring schedule specified in Appendix FM of this permit. [Rule 62-4.070(3), 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 the gas turbine. Within the 10 days of a request by the Department or the Compliance Authority, the permittee shall be able to summarize the following information: heat input (MMBtu per hour); power output (bhp); and hours of gas turbine operation. This information shall also be used for submittal of the required Annual Operating Report. [Rule 62-4.070(3), F.A.C.]

## SECTION 4. APPENDICES

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### Contents

- Appendix CF. Citation Format
- Appendix FM. Custom Fuel Monitoring Plan for NSPS Gas Turbines
- Appendix GC. General Conditions
- Appendix GG. NSPS Subpart GG Requirements for Gas Turbines
- Appendix SC. Standard Conditions



## SECTION 4. APPENDIX CF

### 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 FM

### Custom Fuel Monitoring Plan for NSPS Gas Turbines

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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 turbines 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 GC

### General Conditions

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

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.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey 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.
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.
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.
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.
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.

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.

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

## SECTION 4. APPENDIX GC

### General Conditions

Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
13. This permit also constitutes:
  - a. Determination of Best Available Control Technology (NA);
  - b. Determination of Prevention of Significant Deterioration (NA); and
  - c. Compliance with New Source Performance Standards (X).
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.
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.

SECTION 4. APPENDIX GG

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.

ID	Emission Unit Description
006	Compressor Engine No. 1507 consists of a new 15,000 bhp gas turbine compressor engine.

NSPS GENERAL PROVISIONS

In addition to the specific conditions of the permit and NSPS Subpart GG, the emissions unit is 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

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 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.

Section 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.

Section 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.

Section 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 GG**

**NSPS Subpart GG Requirements for Gas Turbines**

F = NO<sub>x</sub> 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 (NO <sub>x</sub> 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 when firing natural gas as provided by the manufacturer is approximately "11.4". The equivalent emission standard is 190 ppmvd at 15% oxygen. The emissions standards in Section 3 of 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.

Section 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.

Section 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 specified in the Section 3 of the 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 emissions, and the graphs or figures developed under Section 60.335(a).

## SECTION 4. APPENDIX GG

### NSPS Subpart GG Requirements for Gas Turbines

*{Permitting Note: The excess NOx emissions reporting requirements do not apply. The gas turbine uses "dry" lean premix combustors 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 negligible 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, any period between two consecutive fuel sulfur analyses shall be reported as excess emissions if the result of the second analysis indicates failure to comply with the fuel sulfur limit of the permit.

#### Section 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 (NO<sub>x</sub>) shall be computed for each run using the following equation:

$$\text{NO}_x = (\text{NO}_{x0}) (\text{Pr}/\text{Po})^{0.5} e^{19(\text{Ho} - 0.00633)} (288^\circ\text{K}/\text{Ta})^{1.53}$$

where:

NO<sub>x</sub> = emission rate of NO<sub>x</sub> at 15 percent O<sub>2</sub> and ISO standard ambient conditions, volume percent.

NO<sub>x0</sub> = observed NO<sub>x</sub> concentration, ppm by volume.

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

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

Ho = observed humidity of ambient air, g H<sub>2</sub>O/g air.

e = transcendental constant, 2.718.

Ta = ambient temperature, °K.

**Department Requirement:** NO<sub>x</sub> emissions shall be corrected to ISO ambient atmospheric conditions for each required emissions performance test and compared to the NO<sub>x</sub> 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 NO<sub>x</sub> performance tests shall be conducted at approximately four evenly spaced points between the minimum normal operating load and 100% of peak load.

*{Permitting Note: The dry low-NOx controls are only effective above a minimum load, which will be identified during initial testing.}*

- (3) Method 20 shall be used to determine the nitrogen oxides, sulfur dioxide, and oxygen concentrations. The span values shall be 300 ppm of nitrogen oxide and 21 percent oxygen. The NO<sub>x</sub> 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<sub>x</sub> emission levels of the gas turbine.

## SECTION 4. APPENDIX GG

### NSPS Subpart GG Requirements for Gas Turbines

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- (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 natural gas shall be sampled and analyzed for the sulfur content as determined by ASTM methods D4084-82, D3246-81 or more recent versions.

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

*{Permitting Note: The fuel analysis requirements of the permit meet or exceed the requirements of this rule and will ensure compliance.}*



## SECTION 4. APPENDIX SC

### Standard Conditions

*(Permitting Note: Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at this facility.)*

#### EMISSIONS AND CONTROLS

1. **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.]
2. **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.]
3. **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.]
4. **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.]
5. **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.]
6. **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.]
7. **Objectionable Odor Prohibited:** No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and 62-210.200(203), F.A.C.]
8. **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.]
9. **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

10. **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.]

## SECTION 4. APPENDIX SC

### Standard Conditions

11. 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.]
12. 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.]
13. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C.
  - 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.]
14. 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.]
15. 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.
16. 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.]
17. 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.]
18. 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

## SECTION 4. APPENDIX SC

### Standard Conditions

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:

1. The type, location, and designation of the emissions unit tested.
2. The facility at which the emissions unit is located.
3. The owner or operator of the emissions unit.
4. 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.
5. 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.
6. 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 parameters during each test run.
7. 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.
8. The date, starting time and duration of each sampling run.
9. 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.
10. The number of points sampled and configuration and location of the sampling plane.
11. 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.
12. The type, manufacturer and configuration of the sampling equipment used.
13. Data related to the required calibration of the test equipment.
14. Data on the identification, processing and weights of all filters used.
15. Data on the types and amounts of any chemical solutions used.
16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18. All measured and calculated data required to be determined by each applicable test procedure for each run.
19. The detailed calculations for one run that relate the collected data to the calculated emission rate.
20. 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.
21. 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 62-210.310(8), F.A.C.]

#### RECORDS AND REPORTS

19. 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.]
20. 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.]

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

P.E. CERTIFICATION STATEMENT

PERMITTEE

Florida Gas Transmission Company  
1400 Smith Street  
Houston, TX 77002

Draft Air Permit No. 1230034-011-AC Existing Taylor Compressor Station No. 15 Phase VI Project, Engine Nos. 1506/1507
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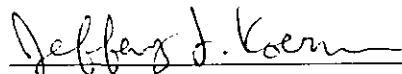
PROJECT DESCRIPTION

Florida Gas Transmission Company operates existing Compressor Station No. 15 near Perry in Taylor County, Florida. This is an area that is currently designated as attainment (or unclassifiable) for each pollutant subject to an Ambient Air Quality Standard. The existing station is considered both a PSD and Title V major source of air pollution. Therefore, new projects require a PSD applicability review. The Bureau of Air Regulation processed this application because Florida Gas Transmission requested that all Phase VI projects be reviewed in Tallahassee for purposes of consistency.

The applicant proposes to up-rate existing Compressor Engine No. 1507 from 13,000 bhp to 15,000 bhp. This unit consists of a Solar Mars 100 T-15000S gas turbine de-rated to 13,000 bhp. Fired exclusively with natural gas, the up-rated unit has the potential to emit the following pollutants: 59 tons of carbon monoxide per year; 49 tons of nitrogen oxides per year; 4 tons of particulate matter per year; 15 tons of sulfur dioxide per year; and 2 ton of volatile organic compounds per year. However, Compressor Engine No. 1507 was just recently permitted in 2001/2002 as a replacement for a Solar Mars 90 T-13000S gas turbine. That project also included a new 7200 bhp gas turbine and required a PSD netting analysis. Therefore, the PSD netting analysis was revisited at the higher rating. The review shows that the combination of recent projects does not trigger a PSD review in accordance with Rule 62-212.400, F.A.C. Based on the available information, the project is not major for hazardous air pollutants.

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. Based on the manufacturer's estimated performance and the emissions standards established in the draft permit, the gas turbine will readily comply with the NSPS requirements. The draft permit includes emissions standards and monitoring requirements to ensure that the project remains minor with respect to PSD. In addition, the project includes a revision of the particulate matter emission rates for Compressor Engine No. 1506 based on better available information.

*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

12-4-02

(Date)

# Memorandum

# Florida Department of Environmental Protection

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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: December 4, 2002

SUBJECT: Draft Air Construction Permit No. 1230034-011-AC  
Taylor Compressor Station No. 15  
Up-rating of Engine No. 1507 and Revision of PM Standards for Engine No. 1506

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 up-rating of existing gas turbine Compressor Engine No. 1507 from 13,000 bhp to 15,000 bhp and revises the particulate matter requirements for Compressor Engine No. 1506. The equipment is installed at existing Compressor Station No. 15, which is located near Perry in Taylor County, Florida. The Technical Evaluation and Preliminary Determination provides a detailed description of the project, rule applicability, and emissions standards. The P.E. certification briefly summarizes the proposed project. Day #74 is January 18, 2003. I recommend your approval of the attached Draft Permit for this project.

TTV/AAL/jfk

Attachments