


Florida Department of  
Environmental Protection

Memorandum

TO: Trina Vielhauer, Chief, Bureau of Air Regulation

THROUGH: Al Linero, Administrator - New Source Review Section

FROM: Greg DeAngelo 

DATE: July 25, 2003

SUBJECT: Progress Energy Florida – Hines Energy Complex  
Project No. 1050234-007-AC  
PSD Permit No. 296A  
Modification to Power Block 2, a 530 MW “2-on-1” Combined Cycle Gas Turbine

Attached for your review are the following items:

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

Simply put, Progress Energy Florida (formerly Florida Power) requests that the Power Block 2 permit adopt the format and language used in the recently issued draft Power Block 3 permit. With the exception of two major changes, revising the permit’s format and language does not alter its intent or stringency. The clarification and consistency gained by adopting common permit language for Power Blocks 2 and 3 benefit the permittee and the Department – without negatively impacting environmental protection.

The two substantive differences between the current and revised permit consist of the following:

- Removal of initial and annual stack tests for PM. *(Clean fuels are fired in the combustion turbine, and continuous monitoring of CO ensures proper operation and complete combustion. Testing is redundant.)*
- Removal of prohibition against operating at less than 60 percent of full load. *(Pollutants of concern are NO<sub>x</sub> and CO. These pollutants are continuously monitored, and the emissions limits are equally applicable whether above or below 60 percent load. The permit condition is unnecessary to assure compliance with the emissions limits.)*

The P.E. certification briefly summarizes the proposed project, and the Technical Evaluation provides additional details. The project is subject to power plant siting. I recommend your approval of the attached Draft Permit Modification for this project.

AAL/gpd

Attachments

## P.E. CERTIFICATION STATEMENT

### PERMITTEE

Progress Energy Florida  
P.O. Box 14042, MAC BB1A  
St. Petersburg, FL 33733-4042

Progress Energy Florida – Hines Energy Complex Project No. 1050234-007-AC Air Permit No. PSD-FL-296A
------------------------------------------------------------------------------------------------------------

### PROJECT DESCRIPTION

The applicant proposes to modify the Prevention of Significant Deterioration (PSD) permit for Power Block 2 at the Hines Energy Complex (final permit no. 1050234-004-AC, PSD-FL-296). Simply put, the applicant requests that the Power Block 2 permit adopt the format and language used in the recently issued draft Power Block 3 permit. With the exception of two major changes, revising the permit's format and language does not alter its intent or stringency.

The first major change is the removal of the requirement to conduct initial and annual particulate matter (PM) stack tests. The permit maintains the Best Available Control Technology (BACT) determination for PM control – combustion of clean fuels (natural gas and distillate fuel oil) and limits on use of fuel oil. The visible emissions standard and the carbon monoxide (CO) continuous emissions monitor (CEM) system continue to provide indication of proper operation and complete combustion. Therefore, so long as the VE standard is not violated and the CO CEM system does not indicate any problems, PM emissions will be at a minimum. Confirmation of the expected low levels of PM through annual stack testing is redundant.

The other significant change is the removal of the prohibition against operation at less than 60 percent of maximum capacity on a heat input basis. The intent of this prohibition is to minimize emissions. Emissions of nitrogen oxides (NO<sub>x</sub>) and CO from the combustion turbine, however, are continuously measured through the CEM systems. The NO<sub>x</sub> and CO emissions limits are equally applicable whether the turbines are operating above or below 60 percent of their maximum heat input capacity. Because the actual emission levels are being measured, it is unnecessary to require monitoring heat input rates. To assure that the CEM systems can adequately measure the emissions that occur during startup and shutdown (and other low load periods), dual-range monitoring systems will be specified with upper spans that are sufficiently high.

A complete discussion of the original BACT determination is included in the Department's "Technical Evaluation and BACT Determination" that was issued on January 18, 2001 along with the Notice of Intent to Issue the original PSD permit. The requested modifications to the PSD permit did not alter the original permit's underlying BACT requirements nor the expected levels of air pollutant emissions from Power Block 2.

*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, meteorological, and geological features).*

^ DRAFT

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Gregory P. DeAngelo, P.E.

Registration Number: 58591

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(Date)



Jeb Bush  
Governor

# Department of Environmental Protection

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

David B. Struhs  
Secretary

July 23, 2003

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Roger Zirkle, Plant Manager – Hines Energy Complex  
Progress Energy Florida, Inc.  
P.O. Box 14042, MAC BB1A  
St. Petersburg, FL 33733-4042

Re: Project No. 1050234-007-AC (Air Permit No. PSD-FL-296A)  
Progress Energy Florida – Hines Energy Complex  
Modified PSD Permit for 530 Megawatt Combined Cycle Power Block 2

Dear Mr. Zirkle:

Progress Energy Florida submitted an application to modify the Prevention of Significant Deterioration (PSD) air permit originally issued by the Florida Department of Environmental Protection (“the Department”) to construct Power Block 2, a 530 megawatt “2-on-1” combined cycle gas turbine unit at the existing Hines Energy Complex. The Department has reviewed the application and additional information submitted and has prepared the enclosed intent to issue package for the revised permit. The enclosures include the following: the “Intent to Issue PSD Permit Modification,” the “Public Notice of Intent to Issue PSD Permit Modification,” the “Technical Evaluation and Preliminary Determination,” and the draft permit (as revised by the modification).

The Public Notice must be published one time only as soon as possible in a newspaper of general circulation in the area affected, pursuant to 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 (7) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

Please submit any other written comments you wish to have considered concerning the Department's proposed action to Al Linero, Administrator of the New Source Review Section, at the above letterhead address. If you have any questions, please call Mr. Greg DeAngelo at (850)921-9506.

Sincerely,

Trina Vielhauer, Chief  
Bureau of Air Regulation

TLV/AAL/gpd

Enclosures

“More Protection, Less Process”

Printed on recycled paper.

In the Matter of an  
Application for Permit Modification by:

Progress Energy Florida, Inc.  
P.O. Box 14042, MAC BB1A  
St. Petersburg, FL 33733-4042

*Authorized Representative:*

Roger Zirkle, Plant Manager – Hines Energy Complex

Project No. 1050234-007-AC  
Draft Air Permit No. PSD-FL-296A  
Progress Energy Florida –  
Hines Energy Complex  
Combined Cycle Power Block 2

### **INTENT TO ISSUE PSD PERMIT MODIFICATION**

The Florida Department of Environmental Protection (Department) gives notice of its intent to issue a modification to a permit issued pursuant to the rules for the Prevention of Significant Deterioration of Air Quality (PSD), copy of DRAFT modified permit attached, for the construction project as detailed in the application specified above and the attached Technical Evaluation and Preliminary Determination for the reasons stated below.

The applicant, Progress Energy Florida, applied on June 10, 2003, to the Department for a modification to the PSD permit for the 530 megawatt combined cycle gas turbine project (Power Block 2) at the existing Progress Energy Florida – Hines Energy Complex, located approximately 7 miles south-southwest of Bartow and 5 miles west-northwest of Fort Meade, Polk County, Florida. The Department previously issued the final PSD permit for Power Block 2 on June 7, 2001, and Power Block 2 is projected to commence commercial operation at the end of July / beginning of August 2003.

The Department has permitting jurisdiction under the provisions of Florida Statutes (F.S.) Chapter 403, and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department maintains that a PSD permit modification is required.

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

The Department will issue the final permit modification 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 modification issuance action for a period of 30 (thirty) days from the date of publication of the enclosed Public Notice. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit modification and require, if applicable, another Public Notice.

The Department will issue the permit modification 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 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 days of publication of the public notice or within fourteen 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 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. Mediation is not available in this proceeding.

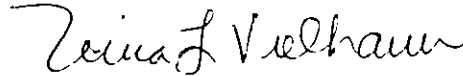
In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542, F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal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

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

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

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

Executed in Tallahassee, Florida.



Trina Vielhauer, Chief  
Bureau of Air Regulation

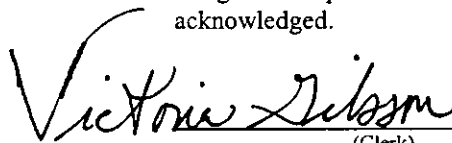
**CERTIFICATE OF SERVICE**

The undersigned duly designated deputy agency clerk hereby certifies that this Intent to Issue PSD Permit Modification (including the Public Notice, Technical Evaluation and Preliminary Determination, and the DRAFT permit modification) was sent by certified mail (\*) and copies were mailed by U.S. Mail before the close of business on 7/25/03 to the persons listed:

- Mr. Roger Zirkle, Florida Power \*
- Mr. John J. Hunter, Florida Power \*
- Mr. Ken Kosky, Golder Associates Inc.
- Mr. Jerry Kissel, SWD
- Mr. Gregg Worley, EPA Region 4
- Mr. John Bunyak, NPS

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.

  
(Clerk) July 25, 2003  
(Date)

## PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT MODIFICATION

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Draft Permit No. PSD-FL-296A

Progress Energy Florida – Hines Energy Complex, Combined Cycle Power Block 2  
Polk County

The Department of Environmental Protection (Department) gives notice of its intent to issue a modification to a permit issued to Progress Energy Florida under the requirements for the Prevention of Significant Deterioration (PSD) of Air Quality. The existing permit is one of several authorizations needed to construct a nominal 530 megawatt (MW) combined cycle gas project at the Progress Energy Florida – Hines Energy Complex, which is located approximately 7 miles south-southwest of Bartow and 5 miles west-northwest of Fort Meade, Polk County, Florida. In accordance with Rule 62-212.400, Florida Administrative Code (F.A.C.), Best Available Control Technology (BACT) determinations were required for emissions of carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM/PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>), sulfuric acid mist (SAM), and volatile organic compounds (VOC). The modifications to the permit change neither the BACT determinations nor the anticipated or potential emissions from the project. The applicant's authorized representative is Mr. Roger Zirkle, Plant Manager, Progress Energy Florida – Hines Energy Complex. The applicant's address is Progress Energy Florida – Hines Energy Complex, P.O. Box 140442 – MAC BB1A, St. Petersburg, FL 33733-4042.

The applicant proposes to update the PSD permit for Power Block 2 to make it consistent with the format and language of the recently issued draft Power Block 3 permit. The requested modifications to the PSD permit do not alter the original permit's underlying BACT requirements nor the expected levels of air pollutant emissions from Power Block 2. With the exception of two significant changes, revising the permit's format and language does not alter its intent or stringency.

The first significant change is the removal of the requirement to conduct initial and annual PM stack tests. The permit maintains the BACT determination for PM control – combustion of clean fuels (natural gas and distillate fuel oil) and limits on use of fuel oil. The visible emissions standard and the CO continuous emissions monitor (CEM) system continue to provide indication of proper operation and complete combustion. Confirmation of the low levels of PM emissions through annual testing is therefore redundant to the continuous monitoring.

The other significant change is the removal of the prohibition against operation at less than 60 percent of maximum capacity on a heat input basis. The intent of this prohibition is to minimize emissions. Emissions of NOx and CO from the combustion turbine, however, are continuously measured through the CEM systems. The NOx and CO emissions limits are equally applicable whether the turbines are operating above or below 60 percent of their maximum heat input capacity. Because the actual emission levels are being measured, it is unnecessary to require monitoring heat input rates. To assure that the CEM systems can adequately measure the emissions that occur during startup and shutdown (and other low load periods), dual-range monitoring systems will be specified with upper spans that are sufficiently high.

Based on the required analyses, the Department has reasonable assurance that the proposed project will not cause or significantly contribute to a violation of any ambient air quality standard or PSD increment. The Department will issue the FINAL Permit Modification, in accordance with the conditions of the DRAFT Permit Modification, 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 30 (thirty) days from the date of publication of this Public Notice of Intent to Issue PSD Permit Modification. Written comments or requests for public meetings 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 comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit modification and require, if applicable, another Public Notice.

The Department will issue the permit modification with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 of the Florida Statutes (F.S.) before the

Notice for Newspaper

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 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 days of publication of the public notice or within fourteen 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 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.

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:

Department of Environmental Protection  
Bureau of Air Regulation  
111 S. Magnolia Drive, Suite 4  
(Mailing Address: 2600 Blair Stone Road, MS #5505)  
Tallahassee, Florida 32399-2400  
Telephone: (850)488-0114  
Fax: (850)922-6979

Department of Environmental Protection  
Southwest District Office  
3804 Coconut Palm Drive  
Tampa, Florida 33619-8318  
Telephone: (813)744-6100  
Fax: (813)744-6084

The complete project file includes the application, technical evaluations, Draft Permit Modification, and the information submitted by the authorized representative, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator of the New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call (850)488-0114 for additional information. The draft permit modification, technical evaluation, and preliminary determination can be accessed at :  
[www.dep.state.fl.us/air/permitting/construct.htm](http://www.dep.state.fl.us/air/permitting/construct.htm).

Notice for Newspaper



**TECHNICAL EVALUATION  
&  
PRELIMINARY DETERMINATION**

**PROJECT**

Progress Energy Florida – Hines Energy Complex  
Power Block 2 Combined Cycle Project  
Project No. 1050234-007-AC  
Draft Permit No. PSD-FL-296A

**COUNTY**

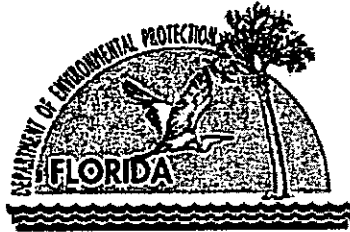
Polk County

**APPLICANT**

Progress Energy Florida, Inc.  
P.O. Box 14042, MAC BB1A  
St. Petersburg, FL 33733-4042

**PERMITTING AUTHORITY**

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



July 25, 2003

*Filename: 296A TE.doc*

**TABLE OF CONTENTS**

This document describes the applicant’s requested Prevention of Significant Deterioration (PSD) permit modification (i.e., revising the Power Block 2 permit to match the format of the recently issued draft Power Block 3 permit). This technical evaluation identifies the significant, minor, and insignificant changes that result from adopting the requested format, and it makes a preliminary determination to issue the modified PSD permit. It is organized by the following sections.

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# TECHNICAL EVALUATION & PRELIMINARY DETERMINATION

## 1. APPLICATION INFORMATION

Applicant Name and Address:  
Progress Energy Florida, Inc.  
P.O. Box 14042, MAC BB1A  
St. Petersburg, FL 33733-4042

Facility Address:  
Progress Energy Florida – Hines Energy Complex  
One Power Plaza (263 13th Ave S)  
St. Petersburg, FL 33701

Authorized Representative:

Roger Zirkle, Plant Manager – Hines Energy Complex

Processing Schedule:

Original PSD permit (final permit no. 1050234-004-AC, PSD-FL-296)

- July 24, 2000 Received permit application and fee
- August 23, 2000 Department's request for additional information
- November 27, 2000 Received response to request for additional information
- November 27, 2000 Application complete
- January 18, 2001 Distributed Notice of Intent to Issue and supporting documents
- January 24, 2001 Notice of Intent to Issue published in the *Lakeland Ledger*
- June 7, 2001 Final PSD permit issued

Request for modification (draft permit no. 1050234-007-AC, PSD-FL-296A)

- June 10, 2003 Received permit modification request
- June 23, 2003 Department's request for additional information re: the modification request
- July 17, 2003 Received response to request for additional information
- July 17, 2003 Application for modification complete
- July 25, 2003 Distributed Notice of Intent to Issue and supporting documents for modification

Facility Description and Location:

The existing Hines Energy Complex is located in the southwest portion of Polk County, Florida, approximately 7 miles south-southwest of Bartow and 5 miles west-northwest of Fort Meade. The facility currently consists of one operating electrical generating unit (Power Block 1) and another electrical generating unit currently under construction but nearing completion (Power Block 2). Power Block 1 is a 500 megawatt (MW) combined cycle power generation unit that began operation in 1999. It consists of 2 combustion turbines, 2 heat recovery steam generators (HRSGs), and 1 steam turbine. Power Block 2, when complete, will include 2 combustion turbines, 2 HRSGs, and 1 steam turbine in a 530 MW power generation unit. Progress Energy Florida (formerly Florida Power) is expected to commence commercial operation of Power Block 2 by the end of July or the beginning of August 2003.

In addition, the Department has issued a draft PSD permit for Power Block 3, a new "2-on-1" combined cycle unit with an electrical generating capacity of approximately 530 MW that will consist of two 170 MW gas turbine-electrical generator sets, two unfired HRSG sets, and a single 190 MW steam turbine-electrical generator. The plant will have a total generating capacity of approximately 1,560 MW following completion of Power Block 3.

*{Note: Throughout this document, the electrical generating capacities represent nominal values for the given operating conditions.}*

## 2. SUMMARY OF PROPOSED MODIFICATION

The applicant proposes to modify the PSD permit for Power Block 2 at the Hines Energy Complex (final permit no. 1050234-004-AC, PSD-FL-296). Simply put, the applicant requests that the Power Block 2 permit adopt the format of the recently issued draft Power Block 3 permit. With the exception of the issues discussed below under "Section 3. Significant Changes," the revised language does not change the intent or stringency of the current

permit. The clarification and consistency gained by adopting common permit language for Power Blocks 2 and 3 benefit the applicant and the Department – without negative impacts on environmental protection.

### 3. SIGNIFICANT CHANGES

#### Particulate Matter Compliance Determination.

Emissions of particulate matter (PM) result from incomplete combustion of natural gas and distillate oil as well as contaminants in these fuels. PM emissions increase with incomplete fuel combustion as well as with higher concentrations of ash, sulfur, and trace elements in a given fuel. However, natural gas is a clean fuel containing little ash, sulfur, or other contaminants. Similarly, distillate oil contains little of these contaminants.

The current permit for Power Block 2 specifies PM emissions rate limits when firing natural gas (7.4 lb/hour) or distillate fuel oil (64.8 lb/hour). The permit specifies averaging times for compliance monitoring, and it requires initial and annual stack tests using U.S Environmental Protection Agency (EPA) Method 5. The permit also restricts the use of distillate fuel oil to the equivalent of only 720 hours per year per gas turbine – 19,703,000 gallons aggregated among the 2 gas turbines, assuming 141.2 million British thermal units (MMBtu) per 1000 gallons and a firing rate of 1,932 MMBtu/hr. Given the limits on emissions and restrictions on distillate fuel oil use, the existing permit essentially limits potential emissions of PM to 106 tons per year.

The specification to fire only clean fuels (natural gas and very low sulfur distillate oil) is itself the PM control method. Actual test data indicate that PM emissions may actually be less than 10 tons per year from a single turbine. Requiring an initial and annual compliance test is difficult and time consuming because the low levels of PM necessitate extended sampling times and larger sampling volumes to collect enough PM for accurate weighing.

Annual compliance testing for PM is also redundant to the continuous monitoring otherwise required by the permit. The visible emissions standard and the carbon monoxide (CO) continuous emissions monitor (CEM) system provide indication of proper operation and complete combustion – i.e., conditions that will minimize PM. So long as the VE standard is not violated and the CO CEM system does not indicate any problems, PM emissions will be at a minimum. The Department can always require an EPA Method 5 stack test upon discovery of any indications of problems (such as VE violations or excessive CO emissions).

The modified permit for Power Block 2 will therefore incorporate the approach taken in the Power Block 3 draft permit. The lb/hour emission limits and EPA Method 5 stack test (PM) requirements will be removed. Instead, reliance upon the VE standard and the CO CEM system will provide assurance that PM emissions are being minimized. Increases in actual or potential PM emissions are not expected.

#### Limits on Operation at Less than 60 Percent Load.

Test data showing the emissions characteristics of the Siemens Westinghouse 501 FD combustion turbine at low loads are not available. Performance curves (emissions versus load) from other turbine manufacturers suggest elevated emissions at low load. Because of the uncertain but elevated emission levels at these low load conditions, the existing Power Block 2 permit prohibits operation at less than 60 percent load (except when cycling through a startup or shutdown of the turbine).

Operators at the plant struggle with this condition because, as is noted in the current permit, “maximum heat input rate will vary depending upon ambient conditions and the combustion turbine characteristics that are described by the manufacturer’s curves...” If maximum heat input is a moving target, then so is 60 percent of maximum.

The intent of the prohibition against running at less than 60 percent load is to minimize emissions. Emissions of nitrogen oxides (NO<sub>x</sub>) and CO from the combustion turbine, however, are continuously measured through the CEM systems. The NO<sub>x</sub> and CO emissions limits are equally applicable whether the turbines are operating above or below 60 percent of their maximum heat input capacity. Because the actual emission levels are being measured, it is unnecessary to require monitoring of heat input rates. To assure that the CEM systems can adequately measure the emissions that occur during startup and shutdown (and other low load periods), dual-range monitoring systems will be specified with upper spans that are sufficiently high.

#### **4. MINOR CHANGES**

Several minor changes will be introduced through the adoption of the Power Block 3 language and format. These changes represent the Department's evolving approach towards the goal of "more protection, less process." The minor changes listed below reflect less burdensome approaches to achieving the same environmental goals as the original permit requirements.

- Annual ammonia stack tests are currently required while firing gas and distillate fuel oil. The modified permit will only require annual testing on gas.
- Modified permit does not contain the requirement to conduct a special compliance test upon catalyst or combustor change out.
- Modified permit also does not require a special volatile organic compound (VOC) stack test prior to operating permit renewal.
- The ammonia slip limit of 5 parts per million by volume, dry (ppmvd) remains in place. If the limit is exceeded, the system must be corrected before slip reaches 7 ppmvd.
- Dual span monitors are required for both the NO<sub>x</sub> and the CO CEM systems. The current permit only requires dual span monitoring for NO<sub>x</sub>. The upper spans are not set to a particular numerical value; the modified permit will require the upper span to be sufficient to obtain reliable data during startup and shutdown periods.

#### **5. INSIGNIFICANT CHANGES**

Adopting the Power Block 3 language introduces another group of modifications consisting mostly of updates to the format and language; they do not result in substantive changes. For example, the current permit includes regulatory language detailing what information must be included in the Annual Operating Report. The modified permit will just contain the requirement to submit the Annual Operating Report along with a reference to the regulatory language wherein the report contents are detailed.

As another example, the general conditions are moved from within the body of the permit to Appendix GC, General Conditions. This change improves readability but does not alter the underlying requirements.

#### **6. PRELIMINARY DETERMINATION**

The Department makes a preliminary determination that after modification, the proposed permit will continue to assure compliance with all applicable state and Federal air pollution regulations. This determination is based on a technical review of the original PSD application and permit, the application for modification and additional reasonable assurances provided by the applicant, and the conditions specified in the modified draft permit. Greg DeAngelo is the project engineer responsible for reviewing the application, recommending this determination, and drafting the permit modification. Additional details of this analysis (including a detailed accounting of the location of the original permit conditions under the new format) may be obtained by contacting the project engineer at (850)921-9506 or the Department's Bureau of Air Regulation at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

# DRAFT PERMIT

## PERMITTEE:

Progress Energy Florida  
P.O. Box 14042, MAC BB1A  
St. Petersburg, FL 33733-4042

### Authorized Representative:

Roger Zirkle, Plant Manager – Hines Energy Complex

Hines Energy Complex, Power Block 2  
Project No. 1050234-007-AC  
Air Permit No. PSD-FL-296A  
SIC No. 4911

Expires: June 1, 2004

## PROJECT AND LOCATION

This permit authorizes the construction of Power Block 2, a “2-on-1” combined cycle unit with an electrical generating capacity of approximately 530 megawatts (MW), at the existing Hines Energy Complex. The project will consist of two 170 MW gas turbine-electrical generator sets, two unfired heat recovery steam generator (HRSG) sets, and a single 190 MW steam turbine-electrical generator. The existing Hines Energy Complex is located in the southwest portion of Polk County, Florida, approximately 7 miles south-southwest of Bartow and 5 miles west-northwest of Fort Meade. *{Permitting Note: Throughout this permit, the electrical generating capacities represent nominal values.}*

UTM Zone 17; 414.4 km East; 3073.9 km North (Latitude: 27° 47' 19", Longitude: 81° 52' 10")

## STATEMENT OF BASIS

This 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.). Pursuant to Chapter 62-17, F.A.C. and Chapter 403 Part II, F.S.; the project is also subject to Electrical Power Plant Siting. The project was processed in accordance with Florida's program for the Prevention of Significant Deterioration (PSD) of Air Quality. 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 I. General Information
- Section II. Administrative Requirements
- Section III. Emissions Units Specific Conditions
- Section IV. Appendices

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Michael Cooke, Director  
Division of Air Resources Management

(Date)

**SECTION I. GENERAL INFORMATION (DRAFT)**

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**FACILITY DESCRIPTION**

The existing Hines Energy Complex currently consists of one operating electrical generating unit, Power Block 1. Power Block 1 is a 500 MW combined cycle power generation unit that began operation in 1999. It consists of 2 combustion turbines, 2 HRSGs, and 1 steam turbine. After completion of Power Block 2, the plant will have a total generating capacity of 1030 MW.

**NEW AND MODIFIED EMISSIONS UNITS**

This permit authorizes construction and installation of the following new emissions units.

ID	Emission Unit Description
014	Power Block 2, CT 2A (170 MW gas turbine with unfired HRSG)
015	Power Block 2, CT 2B (170 MW gas turbine with unfired HRSG)

*{Permitting Note: The Hines Energy Complex, Power Block 2 (Power Block 2, or "the project") consists of 2 gas turbine-electrical generator sets (Units CT 2A and CT 2B), 2 unfired HRSGs, and a single steam-turbine electrical generator.}*

**REGULATORY CLASSIFICATION**

Title III: The existing facility is a major source of hazardous air pollutants (HAPs). This project, however, is not major for HAPs. Based on the available information, this project does not trigger the requirements for a case-by-case determination of the Maximum Available Control Technology (MACT) under Section 112(g) of the Clean Air Act (CAA, or "the Act"). This project may trigger a case-by-case MACT determination pursuant to Section 112(j) of the Act – the "MACT hammer." (See Appendix YYYY.)

Title IV: The facility operates emissions units subject to the acid rain provisions of the Act.

Title V: Because potential emissions of at least one regulated pollutant exceed 100 tons per year, the existing facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C. Regulated pollutants include pollutants such as carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM/PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>), and volatile organic compounds (VOC).

PSD: The project is located in an area designated as "attainment" or "unclassifiable" for each pollutant subject to a National Ambient Air Quality Standard. The facility is considered a "fossil fuel fired steam electric plant of more than 250 million British thermal units (MMBtu) per hour of heat input," which is one of the 28 PSD source categories with the lower PSD applicability threshold of 100 tons per year. Potential emissions of at least one regulated pollutant exceed 100 tons per year. Therefore, the facility is classified as a PSD-major source of air pollution with respect to Rule 62-212.400, F.A.C.

Siting: The project is subject to Electrical Power Plant Siting in accordance with Chapter 62-17, F.A.C. and Chapter 403, Part II, F.S.

**PERMITTING AUTHORITY**

All documents related to applications for permits to construct, operate or modify an emissions unit shall be submitted to the Bureau of Air Regulation of the Florida Department of Environmental Protection (DEP, or "the Department") at 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400. Copies of all such documents shall also be submitted to the Compliance Authority.

## SECTION I. GENERAL INFORMATION (DRAFT)

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### COMPLIANCE AUTHORITY

All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Department's Southwest District Air Program, Compliance/Enforcement Section, 3804 Coconut Palm Drive, Tampa, Florida 33619-8218.

### APPENDICES

The following Appendices are attached as part of this permit.

Appendix AL	Acronym List
Appendix BD	Final BACT Determinations and Emissions Standards
Appendix CF	Citation Format and Definitions
Appendix GC	General Conditions
Appendix GG	NSPS Subpart GG Requirements for Gas Turbines
Appendix SC	Standard Conditions
Appendix XS	Semiannual NSPS Excess Emissions Report
Appendix YYYY	NESHAP Subpart YYYY and 112(j) MACT Hammer

### REVIEWING AND PROCESSING SCHEDULE

July 24, 2000	Received permit application and fee
August 23, 2000	Department's request for additional information
November 27, 2000	Received response to request for additional information
November 27, 2000	Application complete
January 18, 2001	Distributed Notice of Intent to Issue and supporting documents
January 24, 2001	Notice of Intent to Issue published in the <i>Lakeland Ledger</i>
June 7, 2001	Final PSD permit issued
June 10, 2003	Received permit modification request
June 23, 2003	Department's request for additional information regarding the modification request
July 17, 2003	Received response to request for additional information
July 17, 2003	Application for modification complete
July 25, 2003	Distributed Notice of Intent to Issue and supporting documents for modification
July XX, 2003	Notice of Intent to Issue published in the <i>Lakeland Ledger</i>
August XX, 2003	Final PSD permit modification issued

### RELEVANT DOCUMENTS

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

- Permit application and application for modification
- Department's requests for additional information and Office of Siting Coordination sufficiency questions
- Applicant's additional information
- Department's Technical Evaluation and Best Available Control Technology (BACT) Determination
- Department's Intent to Issue packages for permit and modification



## SECTION II. ADMINISTRATIVE REQUIREMENTS (DRAFT)

1. General Conditions: The permittee shall operate under the attached General Conditions listed in Appendix GC of this permit. General Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
2. 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, F.S.; Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C.; and 40 CFR Parts 60, 72, 73, and 75, 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 F.A.C. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
3. Construction and Expiration: The permit expiration date includes sufficient time to complete construction, perform required testing, submit test reports, and submit an application for a Title V operation permit to the Department. Approval to construct shall become invalid for any of the following reasons: construction is not commenced within 18 months after issuance of this permit; construction is discontinued for a period of 18 months or more; or construction is not completed within a reasonable time. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified. In conjunction with an extension of the 18-month period to commence or continue construction (or to construct the project in phases), the Department may require the permittee to demonstrate the adequacy of any previous determination of BACT for emissions units regulated by the project. For good cause, the permittee may request that this PSD permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation at least sixty (60) days prior to the expiration of this permit. [Rules 62-4.070(4), 62-4.080, 62-210.300(1), and 62-212.400(6)(b), F.A.C.]
4. 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.]
5. 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. [Chapters 62-210 and 62-212, F.A.C.]
6. Application for Title IV Permit: At least 24 months before the date on which the new unit begins serving an electrical generator greater than 25 MW, the permittee shall submit an application for a Title IV Acid Rain Permit to the Department's Bureau of Air Regulation in Tallahassee and a copy to the Region 4 Office of the U.S. Environmental Protection Agency in Atlanta, Georgia. [40 CFR 72]
7. 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 by law require. The application shall be submitted to the Department's Bureau of Air Regulation with a copy to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

**SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)**  
**POWER BLOCK 2 COMBINED CYCLE GAS TURBINES (EUs 014 AND 015)**

This section of the permit addresses the following emissions units.

**Emission Units 014 and 015**

**Description:** Emission units 014 and 015 each consist of a Siemens Westinghouse 501 FD gas turbine-electrical generator set, an automated gas turbine control system, and an unfired HRSG. In addition, the project also includes a single steam turbine-electrical generator that serves both gas turbine/HRSG systems.

**Fuels:** Each gas turbine fires natural gas as the primary fuel and distillate oil as a restricted alternate fuel.

**Generating Capacity:** Both of the gas turbine-electrical generator sets have a generating capacity of 170 MW for gas firing. Exhaust from each gas turbine passes through a separate HRSG. Steam from both HRSGs is delivered to the single steam turbine-electrical generator, which has a generating capacity of 190 MW. The total generating capacity of the "2-on-1" combined cycle unit is approximately 530 MW.

**Controls:** The efficient combustion of natural gas and restricted firing of low sulfur distillate oil minimizes the emissions of CO, PM/PM<sub>10</sub>, SAM, SO<sub>2</sub> and VOC. Dry low-NO<sub>x</sub> (DLN) combustion technology for gas firing and water injection for oil firing reduce NO<sub>x</sub> emissions. A selective catalytic reduction (SCR) system – in combination with DLN combustion technology for gas firing and a water injection system for oil firing – reduces NO<sub>x</sub> emissions. The HRSGs are designed and constructed such that an oxidation catalyst can be readily installed if necessary to achieve compliance with CO emission limitations.

**Stack Parameters:** Each HRSG has a stack that is 125 feet tall and 19 feet in diameter. The Department may require the permittee to perform additional air dispersion modeling should the actual specified stack dimensions change. The following table summarizes the exhaust characteristics for the combined cycle systems. Heat input rate is based on the higher heating value (HHV) of the fuel, assuming 1,030 British thermal units (Btu) per standard cubic feet of natural gas and 19,892 Btu/lb of fuel oil.

Fuel	Heat Input Rate (HHV)	Compressor Inlet Temp	Exhaust Temperature	Exit Velocity	Flow Rate
Gas	1,830 MMBtu/hour	59 °F	190 °F	59.2 ft/sec	1,009,487 acfm
Oil	1,932 MMBtu/hour	59 °F	270 °F	67.0 ft/sec	1,139,394 acfm

**Continuous Monitors:** Each stack is equipped with continuous emissions monitoring systems (CEMS) to measure and record CO and NO<sub>x</sub> emissions as well as flue gas oxygen or carbon dioxide content.

**APPLICABLE STANDARDS AND REGULATIONS**

- BACT Determinations:** Determinations of BACT were made for CO, NO<sub>x</sub>, PM/PM<sub>10</sub>, sulfuric acid mist (SAM), SO<sub>2</sub>, and VOC. See Appendix BD of this permit for a summary of the final BACT determinations. [Rule 62-212.400(BACT), F.A.C.]
- New Source Performance Standards (NSPS):** The Department determines that compliance with the BACT emissions performance and monitoring requirements also assures compliance with the NSPS for gas turbines at 40 CFR part 60, subpart GG. See Appendix GG of this permit for a summary of the applicable NSPS requirements. [Rule 62-204.800(7), F.A.C.]

**EQUIPMENT**

- Gas Turbines:** The permittee is authorized to install, tune, operate, and maintain two Siemens Westinghouse Model 501 FD gas turbine-electrical generator sets each with a generating capacity of

### SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### POWER BLOCK 2 COMBINED CYCLE GAS TURBINES (EUs 014 AND 015)

170 MW. Each gas turbine shall include the Siemens TXP automated gas turbine control system and have dual-fuel capability. The gas turbines will utilize DLN combustors. [Application; Design]

#### 4. Gas Turbine NOx Controls

- a. *DLN Combustion*: The permittee shall operate and maintain the DLN combustion system to control NOx emissions from each gas turbine when firing natural gas. Prior to the initial emissions performance tests required for each gas turbine, the DLN combustors and automated gas turbine control system shall be tuned, in conjunction with any post-combustion emissions control equipment, to achieve the permitted levels for CO and NOx emissions. Thereafter, each system shall be maintained and tuned in accordance with the manufacturer's recommendations.
- b. *Water Injection*: The permittee shall install, operate, and maintain a water injection system to reduce NOx emissions from each gas turbine when firing distillate oil. Prior to the initial emissions performance tests required for each gas turbine, the water injection system shall be tuned, in conjunction with any post-combustion emissions control equipment, to achieve the permitted levels for CO and NOx emissions. Thereafter, each system shall be maintained and tuned in accordance with the manufacturer's recommendations.
- c. *SCR System*: The permittee shall install, tune, operate, and maintain a SCR system to control NOx emissions from each gas turbine when firing either natural gas or distillate oil. The SCR system consists of an ammonia injection grid, catalyst, ammonia storage, monitoring and control system, electrical, piping and other ancillary equipment. The SCR system shall be designed, constructed and operated to achieve the permitted levels for NOx emissions and ammonia slip. *{Permitting Note: In accordance with 40 CFR 60.130, the storage of ammonia shall comply with all applicable requirements of the Chemical Accident Prevention Provisions in 40 CFR 68.}*

[Design; Rule 62-212.400(BACT), F.A.C.]

5. HRSGs: The permittee is authorized to install, operate, and maintain two HRSGs. Each HRSG shall be designed to recover heat energy from one of the two gas turbines (CT 2A or CT 2B) and deliver steam to the steam turbine-electrical generator through a common manifold. *{Permitting Note: The two HRSGs deliver steam to a single steam turbine-electrical generator with a generating capacity of 190 MW.}* [Application; Design]
6. CO Controls: The permittee shall design and construct the HRSGs such that an oxidation catalyst can be readily installed if necessary to achieve compliance with the CO emission limitations. [Rule 62-4.070(3), F.A.C.]

#### PERFORMANCE RESTRICTIONS

7. Permitted Capacity - Gas Turbines: The maximum heat input rate to each gas turbine is 1,915 MMBtu per hour when firing natural gas and 2,020 MMBtu per hour when firing distillate oil (based on a compressor inlet air temperature of 59 °F, the HHV of each fuel, and 100% load). Heat input rates will vary depending upon gas turbine characteristics, ambient conditions, alternate fuels, and evaporative cooling. 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 compliance testing. Operating data may 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.]
8. Methods of Operation: Subject to the restrictions and requirements of this permit, the gas turbines may operate under the following methods of operation.

**SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)**  
**POWER BLOCK 2 COMBINED CYCLE GAS TURBINES (EUs 014 AND 015)**

- a. *Hours of Operation:* Subject to the other operational restrictions of this permit, the gas turbines may operate throughout the year (8,760 hours per year).
- b. *Authorized Fuels:* Each gas turbine shall fire natural gas as the primary fuel, which shall contain no more than 1.0 grains of sulfur per 100 standard cubic feet of natural gas. As a restricted alternate fuel, each gas turbine may fire No. 2 distillate oil (or a superior grade) containing no more than 0.05% sulfur by weight. Distillate fuel oil consumption of both emissions units shall not exceed 19,703,000 gallons in any consecutive 12 month period. *{Permitting Note: This condition limits annual average fuel oil consumption to the equivalent of approximately 720 hours of operation per year per turbine, based on 59 °F annual average temperature. Fuel oil consumption is not limited per turbine, and the allowable fuel may be used in a single turbine.}*
- c. *Combined Cycle Operation:* Each gas turbine/HRSG system may operate to produce direct, shaft-driven electrical power and steam-generated electrical power from the steam turbine-electrical generator as a "2-on-1" combined cycle unit subject to the restrictions of this permit. In accordance with the specifications of the SCR and HRSG manufacturers, the SCR system shall be on line and functioning properly during combined cycle operation or when the HRSG is producing steam.
- d. *Ammonia Injection:* Ammonia injection shall begin as soon as operation of the gas turbine/HRSG system achieves the operating parameters specified by the manufacturer.

[Application; Rules 62-210.200(PTE) and 62-212.400(BACT), F.A.C.]

**EMISSIONS STANDARDS**

- 9. Emissions Standards: Emissions from each gas turbine/HRSG shall not exceed the following limits for the listed pollutants at any ambient temperature.

Pollutant	Emission Limit (ppmvd corrected to 15% oxygen)		Averaging Time
	Natural Gas	Fuel Oil	
CO <sup>a</sup>	16	30	24 hour block
NOx <sup>b</sup>	3.5	12	24 hour block
VOC <sup>c</sup>	2	10	3 hours
Ammonia <sup>d</sup>	5	9	3 hours

Pollutant	Fuel Specification and Emission Limit
PM/PM <sub>10</sub> <sup>e</sup>	Fuel specifications. Visible emissions shall not exceed 10% opacity for each 6-minute block average.
SAM/SO <sub>2</sub> <sup>f</sup>	Fuel specifications.

- a. Compliance with the CO standards shall be demonstrated based on data collected by the required CEMS. Compliance with the 24-hour CO CEMS standards shall be determined separately based on the hours of operation for each alternative fuel. *{Permitting Note: A 24-hour compliance average may be based on as little as 1-hour of CEMS data or as much as 24-hours of CEMS data.}*
- b. Compliance with the NOx standards shall be demonstrated based on data collected by the required CEMS. NOx mass emission rates are defined as oxides of nitrogen expressed as NO<sub>2</sub>. Compliance with the 24-hour NOx CEMS standards shall be determined separately based on the hours of operation

**SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)**  
**POWER BLOCK 2 COMBINED CYCLE GAS TURBINES (EUs 014 AND 015)**

for each alternative fuel. *{Permitting Note: A 24-hour compliance average may be based on as little as 1-hour of CEMS data or as much as 24-hours of CEMS data.}*

- c. Compliance with the VOC standards shall be demonstrated by conducting tests in accordance with EPA Method 25A. Optionally, EPA Method 18 may also be performed to deduct emissions of methane and ethane. The emission standards are based on VOC measured as propane.
- d. Subject to the requirements of Condition No. 19 of this section, each SCR system shall be designed and operated for an initial ammonia slip target of less than 5 ppmvd corrected to 15% oxygen when firing natural gas based on the average of three test runs. Compliance with the ammonia slip standard shall be demonstrated by conducting tests in accordance with EPA Method CTC-027.
- e. The fuel specifications established in Condition No. 8 of this section combined with the efficient combustion design and operation of each gas turbine represents the BACT determination for PM/PM<sub>10</sub> emissions. Compliance with the fuel specifications, CO standards, and visible emissions standards shall serve as indicators of good combustion. Compliance with the fuel specifications shall be demonstrated by keeping records of the fuel sulfur content. Compliance with the visible emissions standard shall be demonstrated by conducting tests in accordance with EPA Method 9.
- f. The fuel sulfur specifications in Condition No. 8 of this section effectively limit the potential emissions of SAM and SO<sub>2</sub> from the gas turbines and represent the BACT determination for these pollutants. Compliance with the fuel sulfur specifications shall be determined by the requirements in Condition No. 25 of this section.

*{Permitting Note: The concentration limits and fuel specifications for the control of the above pollutants are equivalent to the following mass emission rates (at 20 °F):*

- CO = 73.6 lb/hr for natural gas firing and 112 lb/hr for distillate fuel oil firing,
- NO<sub>x</sub> = 25.2 lb/hr for natural gas firing and 93.5 lb/hr for distillate fuel oil firing,
- VOC = 4.7 lb/hr for natural gas firing and 22 lb/hr for distillate fuel oil firing,
- PM<sub>10</sub> = 7.3 lb/hr for natural gas firing and 64.8 lb/hr for distillate fuel oil firing, and
- SO<sub>2</sub> = 5.6 lb/hour for natural gas firing and 105.6 lb/hr for distillate fuel oil firing.

*SAM emissions are estimated to be less than 10% of the SO<sub>2</sub> emissions.} [Rule 62-212.400(BACT), F.A.C.]*

**STARTUP, SHUTDOWN, AND MALFUNCTION EMISSIONS**

10. Operating Procedures: The BACT determinations established by this permit rely on “good operating practices” to reduce emissions. Therefore, all operators and supervisors shall be properly trained to operate and maintain the gas turbines, HRSGs, and pollution control systems in accordance with the guidelines and procedures established by each manufacturer. The training shall include good operating practices as well as methods of minimizing excess emissions. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]
11. 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. All such preventable emissions shall be included in any compliance determinations based on CEMS data. [Rule 62-210.700(4), F.A.C.]
12. Alternate Visible Emissions Standard: Visible emissions due to startups, shutdowns, and malfunctions shall not exceed 10% opacity except for up to ten, 6-minute averaging periods during a calendar day, which shall not exceed 20% opacity. [Rule 62-212.400(BACT), F.A.C.]

**SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)**

**POWER BLOCK 2 COMBINED CYCLE GAS TURBINES (EUs 014 AND 015)**

13. **CEMS Data Exclusion:** As provided in this paragraph, NO<sub>x</sub> and CO emissions data recorded during periods of startup, shutdown, oil-to-gas fuel switches, and documented malfunctions may be excluded from the block average calculated to demonstrate compliance with the emission limits of Condition No. 9 of this section.
- a. Periods of data excluded for startup shall not exceed two hours in any 24-hour block except for cold startups. A “cold startup” is defined as a startup following a complete shutdown lasting a minimum of 48 hours. Periods of data excluded for cold startup shall not exceed four hours in any 24-hour block period.
  - b. Periods of data excluded for shutdown shall not exceed two hours in any 24-hour block.
  - c. Periods of data excluded for oil-to-gas fuel switches shall not exceed two hours in any 24-hour block.
  - d. Periods of data excluded for documented malfunctions shall not exceed two hours in any 24-hour block. A “documented malfunction” means a malfunction that meets the notification requirements specified in Condition No. 26 of this section.
  - e. All periods of data excluded for any startup, shutdown, oil-to-gas fuel switch, or documented malfunction shall be consecutive for each episode. Periods of data excluded for all startups, shutdowns, oil-to-gas fuel switches, or documented malfunctions shall not exceed six hours in any 24-hour block period during which a cold startup occurred. For all other 24-hour block periods, periods of data excluded for all startups, shutdowns, oil-to-gas fuel switches, or documented malfunctions shall not exceed four hours.
  - f. The permittee shall minimize the duration of data excluded to the extent practicable. Data shall not be excluded if the startup, shutdown, or documented malfunction was caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably have been prevented. Best operating practices shall be used to minimize hourly emissions that occur during episodes of startup, shutdown, oil-to-gas fuel switching, or documented malfunction.

[Rules 62-212.400(BACT) and 62-210.700, F.A.C.]

14. **CEMS Data Exclusion – DLN Tuning:** CEMS data collected during initial or other major DLN tuning sessions shall be excluded from the CEMS compliance demonstration provided the tuning session is performed in accordance with the manufacturer’s specifications. A “major tuning session” would occur after completion of initial construction, a combustor change-out, a major repair or maintenance to a combustor, or other similar circumstances. Prior to performing any major tuning session, the permittee shall provide the Compliance Authority with an advance notice that details the activity and proposed tuning schedule. The notice may be by telephone, facsimile transmittal, or electronic mail. [Design; Rule 62-4.070(3), F.A.C.]

**EMISSIONS PERFORMANCE TESTING**

15. **Test Methods:** Any required tests shall be performed in accordance with the following reference methods.

<b>Method</b>	<b>Description of Method and Comments</b>
CTM-027	<i>Procedure for Collection and Analysis of Ammonia in Stationary Sources</i> This is an EPA conditional test method. The minimum detection limit shall be 1 ppm.
7E	<i>Determination of Nitrogen Oxide Emissions from Stationary Sources (Instrumental Analyzer Procedure)</i>
9	<i>Visual Determination of the Opacity of Emissions from Stationary Sources</i>

**SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)**

**POWER BLOCK 2 COMBINED CYCLE GAS TURBINES (EUs 014 AND 015)**

Method	Description of Method and Comments
	The test shall be conducted for a minimum of 30 minutes.
10	<i>Determination of Carbon Monoxide Emissions from Stationary Sources</i> This method shall be based on a continuous sampling train.
18	<i>Measurement of Gaseous Organic Compound Emissions by Gas Chromatography</i> (Optional) EPA Method 18 may be used concurrently with EPA Method 25A to deduct emissions of methane and ethane from the measured VOC emissions.
20	<i>Determination of Nitrogen Oxides, Sulfur Dioxide, and Diluent Emissions from Stationary Gas Turbines</i>
25A	<i>Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer</i>

Method CTM-027 is published on EPA's Technology Transfer Network Web Site at <http://www.epa.gov/ttn/emc/ctm.html>. The other methods are described in Appendix A of 40 CFR 60, adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rules 62-204.800, F.A.C.; 40 CFR 60, Appendix A]

16. **Initial Compliance Determinations:** Each gas turbine shall be stack tested to demonstrate initial compliance with the emission standards for CO, NOx, VOC, visible emissions, and ammonia slip. The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after the initial startup of each unit. Each unit shall be tested when firing natural gas and when firing distillate fuel oil. CEMS data collected during the required Relative Accuracy Test Assessments (RATA) may be used to demonstrate compliance with the initial CO and NOx standards. CO and NOx emissions recorded by the CEMS shall also be reported for each run during tests for visible emissions, VOC and ammonia slip. The Department may require the permittee to conduct additional tests after major replacement or major repair of any air pollution control equipment, such as the SCR catalyst, DLN combustors, etc. [Rule 62-297.310(7)(a)1., F.A.C. and 40 CFR 60.8]
17. **Continuous Compliance:** The permittee shall demonstrate continuous compliance with the CO and NOx emissions standards based on data collected by the certified CEMS. Within 45 days of conducting any RATA on a CEMS, the permittee shall submit a report to the Compliance Authority summarizing results of the RATA. *{Permitting Note: Compliance with the CO emission standards also serves as an indicator of efficient fuel combustion, which reduces emissions of PM/PM10 and VOC.}* [Rule 62-212.400 (BACT), F.A.C.]
18. **Annual Compliance Tests:** During each federal fiscal year (October 1<sup>st</sup> to September 30<sup>th</sup>), each gas turbine shall be tested to demonstrate compliance with the emission standards for visible emissions and ammonia.
  - a. **Visible Emissions.** Each unit shall be tested for visible emissions when firing natural gas and when firing distillate fuel oil. Annual emissions testing while firing fuel oil is not required during any federal fiscal year in which less than 5,473,000 gallons of distillate fuel oil is fired in both emission units combined. CO emissions recorded by the CEMS shall be reported for the visible emissions observation period. *{Permitting Note: The fuel limitation for waiving testing while firing distillate fuel oil corresponds to the equivalent of approximately 200 hours of operation per year per turbine.}*
  - b. **Ammonia.** Annual testing to determine the ammonia slip shall be conducted while firing natural gas. NOx emissions recorded by the CEMS shall be reported for each ammonia slip test run.  
  
*{Permitting Note: After initial compliance with the VOC standards is demonstrated, annual compliance tests for VOC emissions are not required. Compliance with the continuously monitored CO standards shall*

**SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)**  
**POWER BLOCK 2 COMBINED CYCLE GAS TURBINES (EUs 014 AND 015)**

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*indicate efficient combustion and low VOC emissions.*} [Rules 62-212.400 (BACT) and 62-297.310(7)(a)4., F.A.C.]

19. Additional Ammonia Slip Testing: If the tested ammonia slip rate for a gas turbine exceeds 5 ppmvd corrected to 15% oxygen when firing natural gas during the annual test, the permittee shall:
- a. Begin testing and reporting the ammonia slip for each subsequent calendar quarter;
  - b. Before the ammonia slip exceeds 7 ppmvd corrected to 15% oxygen, take corrective actions that result in lowering the ammonia slip to less than 5 ppmvd corrected to 15% oxygen; and
  - c. Test and demonstrate that the ammonia slip is no more than 5 ppmvd corrected to 15% oxygen within 15 days after completing the corrective actions.

Corrective actions may include, but are not limited to, adding catalyst, replacing catalyst, or other SCR system maintenance or repair. After demonstrating that the ammonia slip level is no more than 5 ppmvd corrected to 15% oxygen, testing and reporting shall resume on an annual basis. [Rules 62-4.070(3) and 62-297.310(7)(b), F.A.C.]

**CONTINUOUS MONITORING REQUIREMENTS**

20. CEMS: The permittee shall install, calibrate, maintain, and operate CEMS to measure and record the emissions of CO and NOx from the combined cycle gas turbine. The CEMS shall be used to demonstrate continuous compliance with the CEMS emission standards specified in this permit. Upon request by the Department, the CEMS emission rates shall be corrected to ISO conditions to demonstrate compliance with the applicable standards of 40 CFR 60.332. Each monitoring system shall be installed, calibrated, and properly functioning prior to the initial performance tests. Within one working day of discovering emissions in excess of a CO or NOx standard (and subject to the specified averaging period), the permittee shall notify the Compliance Authority.
- a. *CO Monitors*. The CO monitor shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 4 or 4A. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F, and the Data Assessment Report of Section 7 shall be made each calendar quarter, and reported semiannually to the Compliance Authority. The RATA tests required for the CO monitor shall be performed using EPA Method 10 in Appendix A of 40 CFR 60. The Method 10 analysis shall be based on a continuous sampling train, and the ascarite trap may be omitted or the interference trap of Section 10.1 may be used in lieu of the silica gel and ascarite traps. The CO monitor shall be a dual range monitor. The span for the lower range shall not be greater than 50 ppm. The span for the upper range shall be set at a level that provides for accurate measurement during startups and shutdowns.
  - b. *NOx Monitors*. The NOx monitor shall be certified pursuant to 40 CFR 75, and shall be operated and maintained in accordance with the applicable requirements of 40 CFR 75, Subparts B and C. Record keeping and reporting shall be conducted pursuant to 40 CFR 75, Subparts F and G. The RATA tests required for the NOx monitor shall be performed using EPA Method 20 or 7E in Appendix A of 40 CFR 60. The NOx monitor shall be a dual range monitor. The span for the lower range shall not be greater than 10 ppm. The span for the upper range shall be set at a level that provides for accurate measurement during startups and shutdowns.
  - c. *Diluent Monitors*. The oxygen or carbon dioxide (CO<sub>2</sub>) content of the flue gas shall be monitored at the location where CO and NOx are monitored to correct the measured emissions rates to 15% oxygen. If a CO<sub>2</sub> monitor is installed, the oxygen content of the flue gas shall be calculated using F-factors that are appropriate for the fuel fired. Each monitor shall comply with the performance and quality assurance requirements of 40 CFR 75.



### SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### POWER BLOCK 2 COMBINED CYCLE GAS TURBINES (EUs 014 AND 015)

- d. *Moisture Correction.* Final results of the CEMS shall be expressed as ppmvd corrected to 15% oxygen. If the CEMS measures concentration on a wet basis, the CEMS shall include provisions to determine the moisture content of the exhaust gas and an algorithm to enable correction of the monitoring results to a dry basis (0% moisture). Alternatively, the permittee may develop through manual stack test measurements a curve of moisture contents in the exhaust gas versus load for each allowable fuel, and use these typical values in an algorithm to enable correction of the monitoring results to a dry basis (0% moisture). If the CEMS measures concentration on a wet basis and the diluent monitor measures CO<sub>2</sub> on a wet basis, then the permittee may develop an algorithm to enable correction of the CEMS results to a dry basis (0% moisture) without determining the corresponding moisture content.
- e. *1-Hour Block Averages.* Hourly average values shall begin at the top of each hour. Each hourly average value shall be computed using at least one data point in each fifteen-minute quadrant of an hour, where the unit combusted fuel during that quadrant of an hour. Notwithstanding this requirement, an hourly value shall be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of an hour). If less than two such data points are available, the hourly average value is not valid. An hour in which any oil is fired is attributed towards compliance with the permit standards for oil firing. The permittee shall use all valid measurements or data points collected during an hour to calculate the hourly average values. The CEMS shall be designed and operated to sample, analyze, and record data evenly spaced over an hour.
- f. *24-hour Block Averages:* A 24-hour block shall begin at midnight of each operating day and shall be calculated from 24 consecutive hourly average emission rate values. If a unit operates less than 24 hours during the block, the 24-hour block average shall be the average of available valid hourly average emission rate values for the 24-hour block. For purposes of determining compliance with the 24-hour CEMS emissions standards of this permit, missing (or excluded) data shall not be substituted. Instead, the 24-hour block average shall be determined using the remaining hourly data in the 24-hour block. *{Permitting Note: There may be more than one 24-hour compliance demonstration required for CO and NOx emissions depending on the use of alternate fuels.}* [Rule 62-212.400(BACT), F.A.C.]
- g. *Data Exclusion.* Each CEMS shall monitor and record emissions during all operations including episodes of startup, shutdown, malfunction, fuel switches, and DLN tuning. CEMS emissions data recorded during some of these episodes may be excluded from the corresponding CEMS compliance demonstration subject to the provisions of Condition Nos. 13 and 14 of this section.
- h. *Availability.* Monitor availability for the CEMS shall be 95% or greater in any calendar quarter. The quarterly permit excess emissions report shall be used to demonstrate monitor availability. In the event 95% availability is not achieved, the permittee shall provide the Department with a report identifying the problems in achieving 95% availability and a plan of corrective actions that will be taken to achieve 95% availability. The permittee shall implement the reported corrective actions within the next calendar quarter. Failure to take corrective actions or continued failure to achieve the minimum monitor availability shall be violations of this permit, except as otherwise authorized by the Department's Compliance Authority.

*{Permitting Note: Compliance with these requirements assures compliance with the other applicable CEM system requirements such as: NSPS Subpart GG; Rule 62-297.520, F.A.C.; 40 CFR 60.7(a)(5) and 40 CFR 60.13; 40 CFR 60, Appendix B - Performance Specifications; and 40 CFR 60, Appendix F - Quality Assurance Procedures.}* [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

21. Water Injection Monitoring Requirements: In accordance with the manufacturer's specifications, the permittee shall install, calibrate, operate and maintain a monitoring system to continuously measure and record the water-to-fuel ratio when firing distillate oil. The permittee shall document the water-to-fuel ratio required to meet permitted emissions levels over the range of load conditions allowed by this permit. The

**SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)**  
**POWER BLOCK 2 COMBINED CYCLE GAS TURBINES (EUs 014 AND 015)**

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NO<sub>x</sub> CEMS is used to demonstrate compliance with the NO<sub>x</sub> emissions standards. During NO<sub>x</sub> CEMS downtimes or malfunctions, the permittee shall monitor the water-to-fuel ratio and operate at a level that is consistent with the documented flow rate for the gas turbine load condition. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

22. Ammonia Monitoring Requirements: In accordance with the manufacturer's specifications, the permittee shall install, calibrate, operate and maintain an ammonia flow meter to measure and record the ammonia injection rate to the SCR system. The permittee shall document the general range of ammonia flow rates required to meet permitted emissions levels over the range of load conditions allowed by this permit by comparing NO<sub>x</sub> emissions recorded by the CEM system with ammonia flow rates recorded using the ammonia flow meter. During NO<sub>x</sub> monitor downtimes or malfunctions, the permittee shall operate at the ammonia flow rate that is consistent with the documented flow rate for the combustion turbine load condition. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

**RECORDS AND REPORTS**

23. Monitoring of Operation: To demonstrate compliance with the fuel consumption limits of Condition No. 8 of this section, the permittee shall record the distillate fuel oil consumption on a rolling 12-month basis. [Rules 62-4.070(3) and 62-212.400, F.A.C., and BACT]
24. Frequency of Recordkeeping: Condition No. 20 of this section requires the calculation of one or more 24-hour block average emission rates for each operating day. Within 24 hours of the conclusion of each operating day, the permittee shall complete the calculations and record the results for that operating day. [Rule 62-4.070(3), F.A.C.]
25. Fuel Sulfur Records: The permittee shall demonstrate compliance with the fuel sulfur limits specified in this permit by maintaining the following records of the sulfur contents.
- a. Compliance with the fuel sulfur limit for natural gas shall be demonstrated by keeping reports obtained from the vendor indicating the average sulfur content of the natural gas being supplied from the pipeline for each month of operation. Methods for determining the sulfur content of the natural gas shall be ASTM methods D4084-82, D3246-81 or more recent versions.
  - b. Compliance with the distillate oil sulfur limit shall be demonstrated by taking a sample, analyzing the sample for fuel sulfur, and reporting the results to each Compliance Authority before initial startup. Sampling the fuel oil sulfur content shall be conducted in accordance with ASTM D4057-88, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, and one of the following test methods for sulfur in petroleum products: ASTM D129-91, ASTM D1552-90, ASTM D2622-94, or ASTM D4294-90. More recent versions of these methods may be used. For each subsequent fuel delivery, the permittee shall either (1) maintain a permanent file of the certified fuel sulfur analysis from the fuel vendor, or (2) take and analyze a sample according to the above procedures and maintain a permanent file of the results of the analysis. At the request of a Compliance Authority, the permittee shall perform additional sampling and analysis for the fuel sulfur content.

The above methods shall be used to determine the fuel sulfur content in conjunction with the provisions of 40 CFR 75 Appendix D. [Rules 62-4.070(3) and 62-4.160(15), F.A.C.]

26. Malfunction Notification: Within one working day of a malfunction for which CEMS data is excluded pursuant to Condition No. 13 of this section, the permittee shall notify the Compliance Authority by telephone, facsimile transmittal, or electronic mail. The notification shall include a preliminary report of: the nature, extent, and duration of the emissions; the probable cause of the emissions; and the actions taken to correct the problem. If requested by the Compliance Authority, the permittee shall submit written

**SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)**  
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quarterly reports summarizing the malfunctions in lieu of the individual malfunction notifications otherwise required. [Rule 62-210.700, F.A.C.]

27. Semiannual NSPS Excess Emissions Report: In accordance with 40 CFR 60.7(c), the permittee shall semiannually submit a report to the Compliance Authority summarizing any emissions in excess of the NSPS standards. All reports shall be postmarked by the 30<sup>th</sup> day following the end of each six-month period. Written reports of excess emissions shall include the information specified in 40 CFR 60.7(c)(1) through (c)(4). For purposes of reporting emissions in excess of NSPS Subpart GG, excess emissions from the gas turbine are defined as: any CEMS hourly average value exceeding the NSPS NO<sub>x</sub> emission standard identified in Appendix GG (i.e., 112.5 ppmvd corrected to 15% oxygen for both natural gas and fuel oil); and any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds the NSPS standard identified in Appendix GG (i.e., sulfur in excess of 0.8% by weight). An example of an acceptable report format is provided in Appendix XS. [40 CFR 60.7(c)]
28. Quarterly Data Exclusion and Monitor Availability Report: The permittee shall quarterly submit a report to the Compliance Authority summarizing all periods of valid hourly CO and NO<sub>x</sub> emissions data excluded from the 24-hour block average compliance determinations pursuant to Condition Nos. 13 and 14 of this section. In addition, the quarterly report shall summarize the CEMS availability for the previous quarter. All reports shall be postmarked by the 30<sup>th</sup> day following the end of each calendar quarter. An example of an acceptable report format for monitoring systems availability is provided in Appendix XS. [Rules 62-4.130, 62-204.800, 62-210.700(6), F.A.C.; and 40 CFR 60.7(c) and (d)]

SECTION IV. APPENDICES (DRAFT)

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SECTION IV. APPENDIX AL (DRAFT)

ACRONYM LIST

acfm	Actual cubic feet per minute
ASTM	ASTM International <sup>1</sup>
BACT	Best Available Control Technology
Btu	British thermal unit
CAA, or "the ACT"	Clean Air Act, as amended in 1990
CEMS	Continuous emission monitoring system
CFR	Code of Federal Regulations
CO	Carbon monoxide
CO <sub>2</sub>	Carbon dioxide
DLN	Dry-low NO <sub>x</sub>
EPA	U.S. Environmental Protection Agency
F.A.C.	Florida Administrative Code
F.S.	Florida Statutes
FDEP, or "the Department"	Florida Department of Environmental Protection
HAP	Hazardous air pollutant
HHV	Higher heating value
HRSG	Heat recovery steam generator
LAER	Lowest Achievable Emission Rate
LHV	Lower heating value
MMBtu	Million British thermal units
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO <sub>x</sub>	Nitrogen oxides
NSPS	New Source Performance Standards
PM/PM <sub>10</sub>	Particulate matter
PSD	Prevention of Significant Deterioration
RACT	Reasonably Available Control Technology
RATA	Relative accuracy test assessment
SCR	Selective catalytic reduction
SNCR	Selective non-catalytic reduction
SO <sub>2</sub>	Sulfur dioxide
VOC	Volatile organic compound

<sup>1</sup> Formerly known as American Society for Testing and Materials.

**SECTION IV. APPENDIX BD (DRAFT)**  
**SUMMARY OF BACT/MACT DETERMINATION**

A complete discussion of the Department's technical evaluation and BACT determination is included in the Department's "Technical Evaluation and BACT Determination" that was issued on January 18, 2001 along with the Notice of Intent to Issue the original PSD construction permit. As noted in that document, this project is not subject to the requirements of Rule 62-204.800(10)(d)2, F.A.C., for a case-by-case MACT determination.

A summary of the Department's control technology determinations pursuant to Rules 62-212.400, F.A.C. (BACT) follows.

<b>Emissions Unit</b>	<b>Pollutant(s)</b>	<b>BACT Requirements</b>
014 and 015	NO <sub>x</sub>	Dry low NO <sub>x</sub> combustors and selective catalytic reduction
014 and 015	PM/PM <sub>10</sub> and VE	Good combustion practices, clean fuels
014 and 015	SO <sub>2</sub> , SAM	Limit fuel sulfur (clean fuels) and fuel oil consumption
014 and 015	CO, VOC	Combustor design, good combustion practices

The allowable emission limits associated with the BACT technologies and related compliance requirements are shown in Section III of the permit. The annual potential emissions, tons per year, associated with this project are: PM/PM<sub>10</sub>, 106; NO<sub>x</sub>, 270; SO<sub>2</sub>, 114; SAM, 17.5; CO<sub>2</sub>, 672; and VOC, 53.6. The facility information, project scope, emissions, and rule applicability are described in detail in the above referenced "Technical Evaluation and BACT determination."

*{Note: The requested modifications to the air construction permit did not alter the original permit's underlying BACT requirements nor the expected levels of air pollutant emissions from Power Block 2.}*

## SECTION IV. APPENDIX CF (DRAFT)

### CITATION FORMAT AND DEFINITIONS

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-296A

*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  
"296A" identifies the specific permit project (the "A" indicates a modification to original project "296")

#### 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 of the Code of Federal Regulations

#### DEFINITIONS [RULE 62-210.200, F.A.C.]

- (119) Excess Emissions - Emissions of pollutants in excess of those allowed by any applicable air pollution rule of the Department, or by a permit issued pursuant to any such rule or Chapter 62-4, F.A.C. The term applies only to conditions which occur during startup, shutdown, soot blowing, load changing or malfunction.
- (179) Malfunction - Any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner.
- (258) Shutdown - The cessation of the operation of an emissions unit for any purpose.
- (275) Startup - The commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical or pollution control device imbalances, which result in excess emissions.

## SECTION IV. APPENDIX GC (DRAFT)

### 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.



## SECTION IV. APPENDIX GC (DRAFT)

### GENERAL CONDITIONS

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

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
13. This permit also constitutes:
  - a. Determination of Best Available Control Technology (X);
  - b. Determination of Prevention of Significant Deterioration (X); 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 IV. APPENDIX GG (DRAFT)**  
**NSPS SUBPART GG REQUIREMENTS FOR GAS TURBINES**

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Inapplicable provisions have been deleted in the following conditions, but the numbering of the original rules has been preserved for ease of reference to the original rules. The term "Administrator" when used in 40 CFR Part 60 shall mean the Department's Secretary or the Secretary's designee. Department notes and requirements related to the Subpart GG requirements are shown in **bold** 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.

The Power Block 3 gas turbines are regulated as emissions units 016 and 017. Each Power Block 3 gas turbine has a heat input at peak load equal to or greater than 10 MMBtu per hour (LHV) and will commence construction after October 3, 1977. Therefore, the gas turbines are subject to NSPS Subpart GG. [40 CFR 60.330(a) and (b), Applicability and Designation of Affected Facility.]

Emissions units subject to a NSPS are also subject to the applicable requirements of 40 CFR Part 60, Subpart A, General Provisions. Individual subparts may exempt specific equipment or processes from some or all of the general provisions. For brevity, the general provisions are not duplicated in this permit. A copy of the most recently updated general provisions may be provided in full upon request.

**§ 60.331 Definitions.**

The following applicable terms are defined by this subpart:

- (a) Stationary gas turbine means any simple cycle gas turbine, regenerative cycle gas turbine or any gas turbine portion of a combined cycle steam/electric generating system that is not self propelled. It may, however, be mounted on a vehicle for portability.
- (b) Simple cycle gas turbine means any stationary gas turbine which does not recover heat from the gas turbine exhaust gases to preheat the inlet combustion air to the gas turbine, or which does not recover heat from the gas turbine exhaust gases to heat water or generate steam.
- (d) Combined cycle gas turbine means any stationary gas turbine which recovers heat from the gas turbine exhaust gases to heat water or generate steam.
- (g) ISO standard day conditions means 288 degrees Kelvin, 60 percent relative humidity and 101.3 kilopascals pressure.
- (h) Efficiency means the gas turbine manufacturer's rated heat rate at peak load in terms of heat input per unit of power output based on the lower heating value of the fuel.
- (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.
- (q) Electric utility stationary gas turbine means any stationary gas turbine constructed for the purpose of supplying more than one-third of its potential electric output capacity to any utility power distribution system for sale.

**§ 60.332 Standard for Nitrogen Oxides.**

- (a) On and after the date of the performance test required by § 60.8 is completed, every owner or operator subject to the provisions of this subpart as specified in paragraph (b) section shall comply with:
  - (1) 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:

$$STD = 0.0075 \cdot \frac{(14.4)}{Y} + F$$

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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.

F = NOx emission allowance for fuel-bound nitrogen as defined in § 60.332(a)(3).

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

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

where:

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

**Department requirement:** While firing gas, the "F" value shall be assumed to be 0.

**[Note: This is required by EPA's March 12, 1993 determination regarding the use of NOx CEMS. The "Y" values provided by the applicant are approximately 9.6 for both natural gas and fuel oil. The equivalent emission standards are 112.5 ppmvd at 15% oxygen. The BACT limits of this permit are more stringent than this requirement.]**

(b) Electric utility stationary gas turbines with a heat input at peak load greater than 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)(1) of this section.

**§ 60.333 Standard for Sulfur Dioxide.**

On and after the date on which the performance test required to be conducted by 40 CFR 60.8 is completed, every owner or operator subject to the provision of this subpart shall comply with the following:

(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.

**[Note: The BACT limits of this permit are more stringent than this requirement.]**

**§ 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:

(1) If the turbine is supplied its fuel from a bulk storage tank, the values shall be determined on each occasion that fuel is transferred to the storage tank from any other source.

**Department requirement:** The owner or operator is allowed to use vendor analyses of the fuel as received to satisfy the sulfur content monitoring requirements of this rule for fuel oil. Alternatively, if the fuel oil storage tank is isolated from the combustion turbines while being filled, the owner or operator is allowed to determine the sulfur content of the tank after completion of filling of the tank, before it is placed back into service.

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[Note: This is consistent with guidance from EPA Region 4 dated May 26, 2000 to Ronald W. Gore of the Alabama Department of Environmental Management.]

- (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 natural gas fired is waived. The requirement to monitor the nitrogen content of fuel oil fired is waived because a NOx CEMS shall be used to demonstrate compliance with the NOx limits of this permit. For purposes of complying with the sulfur content monitoring requirements of this rule, the owner or operator is allowed to determine the sulfur content of the pipeline quality natural gas semi-annually, because the owner or operator has the results of bimonthly and quarterly natural gas sulfur content analyses from the operation of the existing Power Block 1.

[Note: This is consistent with EPA's custom fuel monitoring policy and guidance from EPA Region 4.]

- (c) For the purpose of reports required under 40 CFR 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 40 CFR 60.332 by the performance test required in 40 CFR 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 40 CFR 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 40 CFR 60.335(a).

**Department requirement:** NOx emission monitoring by CEMS shall substitute for the requirements of paragraph (c)(1) because a NOx monitor shall be used to demonstrate compliance with the BACT NOx limits of this permit. Data from the NOx monitor shall be used to determine "excess emissions" for purposes of 40 CFR 60.7 as described in Condition No. 27 of Section III of this permit.

**Department requirement:** NOx and CO monitor availability shall not be less than 95% in any calendar quarter. The report required by Condition No. 28 of Section III of this permit shall be used to demonstrate compliance with this requirement.

[Note: As required by EPA's March 12, 1993 determination, the NOx monitor shall meet the applicable requirements of 40 CFR 60.13, Appendix B and Appendix F for certifying, maintaining, operating and assuring the quality of the system; shall be capable of calculating NOx emissions concentrations corrected to 15% oxygen; shall have no less than 95% monitor availability in any given calendar quarter; and shall provide a minimum of four data points for each hour and calculate an hourly average. The requirements for the CEMS specified by the specific conditions of this permit satisfy these requirements.]

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

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**§ 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 per-cent and are approved by the Administrator to determine the nitrogen content of the fuel being fired.
- (b) In conducting the performance tests required in 40 CFR 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 pro-vided for in 40 CFR 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 40 CFR 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:** The owner or operator is not required to have the NO<sub>x</sub> monitor required by this permit continuously calculate NO<sub>x</sub> emissions concentrations corrected to ISO conditions. However, the owner or operator shall keep records of the data needed to make the correction, and shall make the correction when required by the Department or Administrator.

[Note: This is consistent with guidance from EPA Region 4.]

- (2) The monitoring device of 40 CFR 60.334(a) shall be used to determine the fuel consumption and the water-to-fuel ratio necessary to comply with 40 CFR 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 owner or operator is allowed to conduct initial performance tests at a single load because a NO<sub>x</sub> monitor shall be used to demonstrate compliance with the BACT NO<sub>x</sub> limits of this permit.

[Note: This is consistent with guidance from EPA Region 4.]

- (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 owner or operator is allowed to make the initial compliance demonstration for NO<sub>x</sub> emissions using certified CEMS data, provided that compliance be based on a

**SECTION IV. APPENDIX GG (DRAFT)**  
**NSPS SUBPART GG REQUIREMENTS FOR GAS TURBINES**

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minimum of three test runs representing a total of at least three hours of data, and that the CEMS be calibrated in accordance with the procedure in section 6.2.3 of Method 20 following each run. Alternatively, initial compliance may be demonstrated using data collected during the initial relative accuracy test audit (RATA) performed on the NOx monitor. The span value specified in Condition No. 20 of Section III of this permit shall be used instead of the span value of 300 ppm specified by paragraph (3) above.

[Note: These initial compliance demonstration requirements are consistent with guidance from EPA Region 4. The span value is changed pursuant to Department authority and is consistent with guidance from EPA Region 4.]

- (d) The owner or operator shall determine compliance with the sulfur content standard in 40 CFR 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 40 CFR 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: Condition No. 25 of Section III of this permit requires the owner or operator to follow the requirements of 40 CFR 75 Appendix D to determine the sulfur content of liquid fuels.**

[Note: This requirement establishes different analysis methods than provided by paragraph (d) above, but the requirements are equally stringent and will ensure compliance with this rule.]

- (e) To meet the requirements of 40 CFR 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.

[Note: The fuel analysis requirements of Condition No. 25 of Section III of this permit meet or exceed the requirements of this rule and will ensure compliance with this rule.]

## SECTION IV. APPENDIX SC (DRAFT)

### STANDARD CONDITIONS

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 IV. APPENDIX SC (DRAFT)

### 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 IV. APPENDIX SC (DRAFT)

### 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 62-297.310(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.]

**SECTION IV. APPENDIX XS (DRAFT)**  
**SEMIANNUAL NSPS EXCESS EMISSIONS REPORT**

**FIGURE 1. SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE**

[Note: This form is referenced in 40 CFR 60.7, Subpart A-General Provisions]

Pollutant *(Circle One)*    SO<sub>2</sub>    NO<sub>x</sub>    TRS    H<sub>2</sub>S    CO    Opacity

Reporting period dates: From \_\_\_\_\_ to \_\_\_\_\_

Company: \_\_\_\_\_

Emission Limitation: \_\_\_\_\_

Address: \_\_\_\_\_

Monitor Manufacturer: \_\_\_\_\_

Model No. : \_\_\_\_\_

Date of Latest CMS Certification or Audit: \_\_\_\_\_

Process Unit(s) Description: \_\_\_\_\_

Total source operating time in reporting period <sup>1</sup>: \_\_\_\_\_

Emission data summary <sup>1</sup>	CMS performance summary <sup>1</sup>
1. Duration of excess emissions in reporting period due to:	1. CMS downtime in reporting period due to:
a. Startup/shutdown..... _____	a. Monitor equipment malfunctions..... _____
b. Control equipment problems..... _____	b. Non-Monitor equipment malfunctions..... _____
c. Process problems..... _____	c. Quality assurance calibration..... _____
d. Other known causes..... _____	d. Other known causes..... _____
e. Unknown causes..... _____	e. Unknown causes..... _____
2. Total duration of excess emissions..... _____	2. Total CMS Downtime..... _____
3. [Total duration of excess emissions] x (100) / [Total source operating time]..... _____ % <sup>2</sup>	3. [Total CMS Downtime] x (100) / [Total source operating time]..... _____ % <sup>2</sup>

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in 40 CFR 60.7(c) shall be submitted.

*Note: On a separate page, describe any changes since the last in CMS, process or controls.*

I certify that the information contained in this report is true, accurate, and complete.

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Title: \_\_\_\_\_

**SECTION IV. APPENDIX YYYY (DRAFT)**  
**NESHAP SUBPART YYYY AND 112(J) MACT HAMMER**

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**APPLICABILITY**

The Power Block 2 gas turbines are regulated as emissions units 014 and 015. Each Power Block 2 gas turbine is a "stationary combustion turbine located at a major source of HAP emissions" and commenced construction before January 14, 2003. Therefore, the gas turbines will be subject to the **existing stationary combustion turbine** requirements of 40 CFR 63, Subpart YYYY, when that subpart is finalized.

Emissions units subject to a NESHAP are also subject to the applicable requirements of 40 CFR Part 63, Subpart A, General Provisions. Individual subparts may exempt specific equipment or processes from some or all of the general provisions. For brevity, the general provisions are not duplicated in this permit. A copy of the most recently updated general provisions may be provided in full upon request.

**TIMING AND REQUIREMENTS**

The combustion turbines NESHAP was proposed on January 14, 2003. It is currently scheduled for promulgation by August 30, 2003. Power Block 2 is scheduled to commence commercial operation at the end of July / beginning of August, 2003. If the combustion turbines NESHAP is promulgated prior to startup of the Power Block 2 combustion turbines, then:

- The permittee shall apply for a permit revision to this permit to incorporate the relevant requirements of 40 CFR 63, Subparts A and YYYY, and ensure compliance with those standards within three (3) years of the date the final rule was published in the Federal Register.

If, however, the combustion turbines NESHAP is not promulgated prior to startup of the Power Block 2 combustion turbines, then:

- Within 30 days of startup of the Power Block 2 combustion turbines, the permittee shall submit a "Part 1 MACT application" as specified in the Section 112(j) rules, currently located at 40 CFR 63.53(a).
- If 40 CFR 63, Subpart YYYY, is promulgated within 24 months of submitting the Part 1 MACT application, then the permittee shall apply for a permit revision to this permit to incorporate the relevant requirements of 40 CFR 63, Subpart YYYY, and ensure compliance with those standards prior to the date 24 months following submittal of the Part 1 MACT application.
- If 40 CFR 63, Subpart YYYY, is not promulgated within 24 months of submitting the Part 1 MACT application, then the permittee shall submit a "Part 2 MACT application" as specified in the Section 112(j) rules, currently located at 40 CFR 63.53(b). The Part 2 MACT application shall be submitted prior to the date 24 months following submittal of the Part 1 MACT application.

[Rule 62-4.070(3), F.A.C. See also 40 CFR 60.6085, proposed at 68 FR 1888, January 14, 2003.]

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. John J. Hunter  
 Project Technical Specialist  
 Progress Energy Florida, Inc.  
 P.O. Box 14042, MAC BB1A  
 St. Petersburg, FL 33733-4042

**COMPLETE THIS SECTION ON DELIVERY**

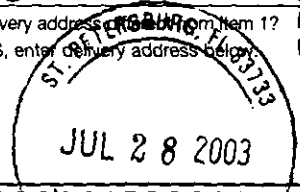
A. Received by (Please Print Clearly) B. Date of Delivery

C. Signature  Agent  
 Addressee

D. Is delivery address same as item 1?  Yes  
 If YES, enter delivery address below  No

3. Service Type  
 Certified Mail  Express Mail  
 Registered  Receipt for Merchandise  
 Insured Mail  C.O.D.

4. Restricted Delivery? (Extra Fee)  Yes



2. 7001 0320 0001 3692 5528

**U.S. Postal Service  
 CERTIFIED MAIL RECEIPT  
 (Domestic Mail Only; No Insurance Coverage Provided)**

**OFFICIAL USE**

9225 5528  
 3692  
 0001  
 0320  
 7001

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
<b>Total Postage &amp; Fees</b>	<b>\$</b>

Postmark  
 Here

Sent To:  
 John J. Hunter  
 Street, Apt. No.,  
 or P.O. Box 14042, MAC BB1A  
 City, State, ZIP+4  
 St. Petersburg, FL 33733-4042

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:  
 Mr. Roger Zirkle  
 Plant Manager-Hines Energy Complex  
 Progress Energy Florida, Inc.  
 P.O. Box 14042, MAC BB1A  
 St. Petersburg, FL 33733-4042

2. 7001 0320 0001 3692 5511

**COMPLETE THIS SECTION ON DELIVERY**

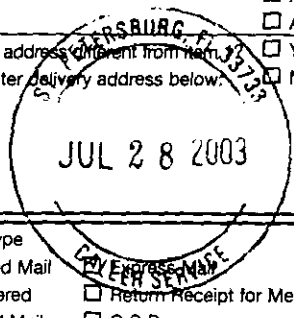
A. Received by (Please Print Clearly) \_\_\_\_\_ B. Date of Delivery \_\_\_\_\_

C. Signature *[Signature]*  Agent  Addressee

D. Is delivery address different from item 1?  Yes  No  
 If YES, enter delivery address below: \_\_\_\_\_

3. Service Type  
 Certified Mail  Registered  Insured Mail  
 Return Receipt for Merchandise  C.O.D.

4. Restricted Delivery? (Extra Fee)  Yes



**U.S. Postal Service  
 CERTIFIED MAIL RECEIPT  
 (Domestic Mail Only; No Insurance Coverage Provided)**

**OFFICIAL USE**

7001 0320 0001 3692 5511

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
<b>Total Postage &amp; Fees</b>	<b>\$</b>

Postmark Here

Sent To  
 Roger Zirkle  
 Street, Apt. No.,  
 or P.O. Box No. P.O. Box 14042, MAC BB1A  
 City, State, ZIP+4  
 St. Petersburg, FL 33733-4042