


# Memorandum

# Florida Department of Environmental Protection

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TO: Trina Vielhauer

THRU: J. K. Pennington

FROM: M. P. Halpin 

DATE: February 4, 2005

SUBJECT: Progress Energy Florida – Hines Energy Complex Power Blocks 2 and 3  
PSD and Title V Permit Modifications – heat input increase  
DEP File No.'s 1050234-011-AC, 1050234-013-AC and 1050234-012-AV

Attached is the public notice package for Hines Energy Complex permit modifications. The permit modifications allow for CT's 2A, 2B, 3A and 3B to operate with slightly higher heat inputs (<7%) based upon actual testing data obtained on CT's 2A and 2B which have begun operation. This is an existing facility and neither a PSD Review nor a new determination of Best Available Control Technology (BACT) was required as a result of this request.

I believe that the attached package represents the simplest and most expeditious way to accommodate the three affected permit revisions.

I recommend your approval.

JKP/mph

Attachments



# Department of Environmental Protection

Jeb Bush  
Governor

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

Colleen M. Castille  
Secretary

February 4, 2005

Mr. Roger Zirkle, Plant Manager  
Progress Energy Florida, Hines Energy Complex  
100 Central Avenue BB1A-HE44  
St. Petersburg, Florida 33701-5511

Re: Hines Energy Complex  
Project No. 1050234-011-AC: Revision of Permit No. PSD-FL-296  
Project No. 1050234-013-AC: Revision of Permit No. PSD-FL-330  
Project No. 1050234-012-AV: Revision of Title V Air Operation Permit

Dear Mr. Zirkle:

On February 1, 2005, the Department received your application to increase the heat input limits for Emission Units 014, 015, 016 and 017 at the Hines Energy Complex, which 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. Enclosed are the following related documents: "Technical Evaluation and Preliminary Determination" and "Draft Permit Revision". The "Technical Evaluation and Preliminary Determination" summarizes the Permitting Authority's technical review of the application and provides the rationale for making the preliminary determination to issue the permit. The "Draft Permit Revision" includes the specific changes to the above permit conditions that the Department intends to make.

The Department is providing its preliminary determination to issue all three of these permits at the same time. Enclosed are the following combined documents related to these projects: "Written Notice of Intent to Issue Revised Air Construction Permit/Title V Air Operation Permit" and "Public Notice of Intent to Issue Revised Air Construction Permit/Title V Air Operation Permit". These documents combine both projects so that the revised conditions of the air construction permit can be incorporated into the renewal Title V air operation permit. The "Written Notice" provides important information regarding: the Permitting Authority's intent to issue the permits; the requirements for publishing the Public Notice of the Permitting Authority's intent to issue the air permits; the procedures for submitting comments on the Draft Permits; the requirements for requesting a public meeting; the process for filing a petition for an administrative hearing; and the availability of mediation. The "Public Notice" is the actual notice that you must have published in the legal advertisement section of a newspaper of general circulation in the area affected by this project.

If you have any questions, please contact the Project Engineer, Michael P. Halpin, P.E., at 850/921-9519.

Sincerely,

Trina Vielhauer, Chief  
Bureau of Air Regulation

Enclosures

"More Protection, Less Process"

Printed on recycled paper.

**WRITTEN NOTICE OF INTENT TO ISSUE  
REVISED AIR CONSTRUCTION PERMIT/TITLE V AIR OPERATION PERMIT**

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*In the Matter of an  
Application for Title V Air Operation Permit by:*

Mr. Roger Zirkle, Plant Manager  
Progress Energy Florida, Hines Energy Complex  
100 Central Avenue BB1A-HE44St. Petersburg, Florida 33701-  
5511

Project No. 1050234-011-AC:  
Revision of Permit No. PSD-FL-296  
Project No. 1050234-013-AC:  
Revision of Permit No. PSD-FL-330  
Project No. 1050234-012-AV:  
Revision of Title V Air Operation Permit  
Polk County, Florida

**Facility Location:** The Hines Energy Complex is located at 7700 County Road 555, Bartow, Polk County, Florida.

**Revised Air Construction Permit Projects:** The revisions allow for a 6.9% increase in the heat input of Emission Units 014 and 015 (PSD-FL-296) and Emission Units 016 and 017 (PSD-FL-330). Details are provided in the in the application and the enclosed "Technical Evaluation and Preliminary Determination".

**Title V Air Operation Permit Project:** The DRAFT Title V Air Operation permit revision incorporates the revised air construction permits for this facility.

**Permitting Authority:** Applications for these permitting actions are subject to review in accordance with the provisions of Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-210, 62-212, 62-213 and 62-214 of the Florida Administrative Code (F.A.C.). The proposed projects are not exempt from air permitting requirements and air permits are required for the revised air construction permit and to operate the facility. The Florida Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making permit determinations regarding these projects. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, in Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114 and facsimile number is 850/922-6979.

**Project Files:** Complete project files are available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at the address indicated above for the Permitting Authority. For the Revised Air Construction Permit Project, the complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. For the Title V Air Operation Permit Project, the complete project file includes the DRAFT Permit, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may view the DRAFT Permit and file electronic comments by visiting the following website: <http://www.dep.state.fl.us/air/eproducts/ards/>. Copies of the complete project files are also available at the Air Resources Section of the Department's Southwest District Office at 3804 Coconut Palm Drive, Tampa; Phone Number 813-744-6100.

**Notice of Intent to Issue Air Permits:** The Permitting Authority gives notice of its intent to issue the revised Draft Air Construction Permit and the DRAFT Title V Air Operation Permit to the applicant for the projects described above. The applicant has provided reasonable assurance that operation of the facility will not adversely impact air quality and that the projects will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-214, 62-256, 62-257, 62-281, 62-296, and 62-297, F.A.C. For the Draft Air Construction Permit, the Permitting Authority will issue a Final Permit in accordance with the conditions of the Draft Permit unless a response received in accordance with the following procedures results in a different decision or a significant change of terms or conditions. For the DRAFT Title V Air Operation Permit, the Permitting Authority will issue PROPOSED Permit conditions and subsequent FINAL Permit conditions in accordance with the conditions of the DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or a significant change of terms or conditions.

**Public Notice:** Pursuant to Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "Public Notice of Intent to Issue Revised Air Construction Permit/Title V Air Operation Permit" (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The newspaper used must meet 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 Permitting Authority at above address or phone number. Pursuant to Rule 62-110.106(5), F.A.C., the applicant shall provide proof of publication to the

**WRITTEN NOTICE OF INTENT TO ISSUE  
REVISED AIR CONSTRUCTION PERMIT/TITLE V AIR OPERATION PERMIT**

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Permitting Authority at the above address within seven (7) days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

**Comments on the Air Construction Permit Project:** The Permitting Authority will accept written comments concerning the Revised Draft-Air Construction Permit for a period of fourteen (14) days from the date of publication of the Public Notice. Written comments must be post-marked, and all e-mail or facsimile comments must be received by the close of business (5:00 p.m.), on or before the end of this 14-day period by the Permitting Authority at the above address, email or facsimile. If written comments result in a significant change to the Draft Permit, the Permitting Authority will issue a revised Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

**Comments on the DRAFT Title V Air Operation Permit Project:** The Permitting Authority will accept written comments concerning the DRAFT Permit for a period of thirty (30) days from the date of publication of the Public Notice. Written comments must be post-marked, and all e-mail or facsimile comments must be received by the close of business (5:00 p.m.), on or before the end of this 30-day period by the Permitting Authority at the above address, email or facsimile. As part of his or her comments, any person may also request that the Permitting Authority hold a public meeting on this permitting action. If the Permitting Authority determines there is sufficient interest for a public meeting, it will publish notice of the time, date, and location on the Department's official web site for notices at <http://tlhora6.dep.state.fl.us/onw> and in a newspaper of general circulation in the area affected by the permitting action. For additional information, contact the Permitting Authority at the above address or phone number. If written comments or comments received at a public meeting result in a significant change to the DRAFT Permit, the Permitting Authority will issue a Revised DRAFT Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

**Petitions:** A person whose substantial interests are affected by the proposed permitting decisions may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this "Written Notice of Intent". Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within fourteen (14) days of publication of the attached "Public Notice" or within fourteen (14) days of receipt of this "Written Notice", whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority'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 each 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 state; (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 the 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 Permitting Authority'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 Permitting Authority's final action may be different from the position taken by it in this "Written Notice". Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on these applications have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

**WRITTEN NOTICE OF INTENT TO ISSUE  
REVISED AIR CONSTRUCTION PERMIT/TITLE V AIR OPERATION PERMIT**

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**Mediation:** Mediation is not available in this proceeding.

**Objections to the FINAL Title V Permit:** Finally, pursuant to 42 United States Code (U.S.C.) Section 7661d(b)(2), any person may petition the Administrator of the EPA within sixty (60) days of the expiration of the Administrator's 45 (forty-five) day review period as established at 42 U.S.C. Section 7661d(b)(1), to object to the issuance of any Title V air operation permit. Any petition shall be based only on objections to the Permit that were raised with reasonable specificity during the thirty (30) day public comment period provided in the Public Notice, unless the petitioner demonstrates to the Administrator of the EPA that it was impracticable to raise such objections within the comment period or unless the grounds for such objection arose after the comment period. Filing of a petition with the Administrator of the EPA does not stay the effective date of any permit properly issued pursuant to the provisions of Chapter 62-213, F.A.C. Petitions filed with the Administrator of EPA must meet the requirements of 42 U.S.C. Section 7661d(b)(2) and must be filed with the Administrator of the EPA at: U.S. EPA, 401 M Street, S.W., Washington, D.C. 20460. For more information regarding EPA review and objections, visit EPA's Region 4 web site at <http://www.epa.gov/region4/air/permits/Florida.htm>.

Executed in Tallahassee, Florida.



Trina Vielhauer, Chief  
Bureau of Air Regulation

**WRITTEN NOTICE OF INTENT TO ISSUE  
REVISED AIR CONSTRUCTION PERMIT/TITLE V AIR OPERATION PERMIT**

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**CERTIFICATE OF SERVICE**

The undersigned duly designated deputy agency clerk hereby certifies that this "Written Notice of Intent to Issue Air Permit" package (including the Written Notice of Intent, the Public Notice, the Technical Evaluation, Preliminary Determination and Statement of Basis, the Draft Air Construction Permits and the DRAFT Title V Air Operation Permit, was sent by certified mail (\*) and copies were mailed by U.S. Mail before the close of business on 2/10/05 to the persons listed below.

Roger Zirkle, Progress Energy Florida \*  
Dave Meyer, Progress Energy Florida  
Scott Osbourn, Golder  
Buck Oven, PPSO  
Gerald Kissel, Southwest District Office  
Gregg Worley, EPA Region 4  
John Bunyak, National Park Service

Clerk Stamp

**FILING AND ACKNOWLEDGMENT FILED**, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

Paulina J. Friday 2/10/05  
(Clerk) (Date)

**PUBLIC NOTICE OF INTENT TO ISSUE  
REVISED AIR CONSTRUCTION PERMIT/TITLE V AIR OPERATION PERMIT**

Florida Department of Environmental Protection  
Revised Draft Air Construction Permit No.'s 1050234-011-AC and 1050234-013-AC  
DRAFT Title V Air Operation Permit No. 1050234-012-AV  
Hines Energy Complex  
Polk County, Florida

**Applicant:** The applicant for this project is Progress Energy Florida. The applicant's mailing address is 100 Central Avenue, CX1B, St. Petersburg, Florida 33701. The applicant's responsible official is Roger Zirkle, Plant Manager.

**Facility Location:** The Hines Energy Complex is located at 7700 County Road 555, Bartow, Polk County, Florida.

**Revised Air Construction Permit Projects:** These projects increase the maximum heat input of Emission Units 014, 015, 016 and 017 by nearly 7% each. The referenced Emission Units are more commonly known as Combustion Turbine Units 2A, 2B, 3A and 3B. Each emission unit is a gas turbine, currently rated at a maximum heat input of 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). The new ratings will be 2048 MMBtu per hour when firing natural gas and 2155 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). All other permit conditions will remain the same, and calculated emission increases are less than the PSD significant thresholds of 40 tons per year (TPY) NO<sub>x</sub>, 40 TPY VOC and 100 TPY CO.

**Title V Air Operation Permit Project:** This project is to incorporate the above, applicable revisions to the Title V Air Operation permit for the facility.

**Permitting Authority:** Applications for these permitting actions are subject to review in accordance with the provisions of Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-210, 62-212, 62-213 and 62-214 of the Florida Administrative Code (F.A.C.). The proposed projects are not exempt from air permitting requirements and air permits are required for the revised air construction permit and to operate the facility. The Florida Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making permit determinations regarding these projects. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, in Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114 and facsimile number is 850/922-6979.

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**(Public Notice to be Published in the Newspaper)**

**PUBLIC NOTICE OF INTENT TO ISSUE  
REVISED AIR CONSTRUCTION PERMIT/TITLE V AIR OPERATION PERMIT**

**Comments on the DRAFT Title V Air Operation Permit Project:** The Permitting Authority will accept written comments concerning the DRAFT Permit for a period of thirty (30) days from the date of publication of the Public Notice. Written comments must be post-marked, and all e-mail or facsimile comments must be received by the close of business (5:00 p.m.), on or before the end of this 30-day period by the Permitting Authority at the above address, email or facsimile. As part of his or her comments, any person may also request that the Permitting Authority hold a public meeting on this permitting action. If the Permitting Authority determines there is sufficient interest for a public meeting, it will publish notice of the time, date, and location on the Department's official web site for notices at <http://tlhora6.dep.state.fl.us/onw> and in a newspaper of general circulation in the area affected by the permitting action. For additional information, contact the Permitting Authority at the above address or phone number. If written comments or comments received at a public meeting result in a significant change to the DRAFT Permit, the Permitting Authority will issue a Revised DRAFT Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

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A petition that disputes the material facts on which the Permitting Authority'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 each 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 state; (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 the 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 Permitting Authority'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.

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**Mediation:** Mediation is not available in this proceeding.

**Objections to the FINAL Title V Permit:** Finally, pursuant to 42 United States Code (U.S.C.) Section 7661d(b)(2), any person may petition the Administrator of the EPA within sixty (60) days of the expiration of the Administrator's 45 (forty-five) day review period as established at 42 U.S.C. Section 7661d(b)(1), to object to the issuance of any Title V air operation permit. Any petition shall be based only on objections to the Permit that were raised with reasonable specificity during the thirty (30) day public comment period provided in the Public Notice, unless the petitioner demonstrates to the Administrator of the EPA that it was impracticable to raise such objections within the comment period or unless the grounds for such objection arose after the comment period. Filing of a petition with the Administrator of the EPA does not stay the effective date of any permit properly issued pursuant to the provisions of Chapter 62-213, F.A.C. Petitions filed with the Administrator of EPA must meet the requirements of 42 U.S.C. Section 7661d(b)(2) and must be filed with the Administrator of the EPA at: U.S. EPA, 401 M Street, S.W., Washington, D.C. 20460. For more information regarding EPA review and objections, visit EPA's Region 4 web site at <http://www.epa.gov/region4/air/permits/Florida.htm>.



**TECHNICAL EVALUATION  
PRELIMINARY DETERMINATION  
AND  
STATEMENT OF BASIS**

Progress Energy Florida  
Hines Energy Complex

Heat Input Increase to Power Blocks 2 and 3

Polk County

DEP File No. 1050234-011-AC / PSD-FL-296 (PA 92-33)

DEP File No. 1050234-013-AC / PSD-FL-330 (PA 92-33)



Florida Department of Environmental Protection  
Division of Air Resource Management  
Bureau of Air Regulation  
North Permitting Section

February 11, 2005

**1. APPLICATION INFORMATION**

**1.1 Applicant Name and Address**

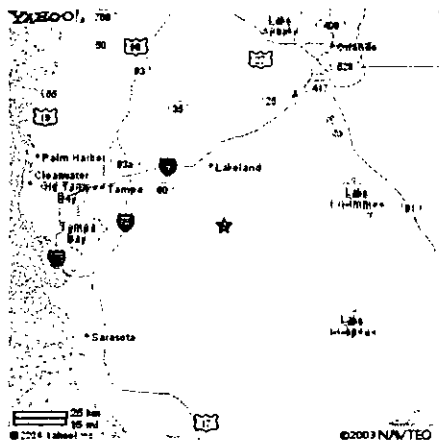
Progress Energy Florida  
 P.O. Box 14042, MAC BB1A  
 St. Petersburg, Florida 33733  
 Authorized Representative:  
 Roger Zirkle, Plant Manager

**1.2 Processing Schedule**

- Pre-meeting on January 30, 2005;
- Received application on February 1, 2005;
- Issued Draft permit on February 11, 2005.

**1.3 Facility Description and Location**

Power Block 1 consists of two combined cycle combustion turbines with heat recovery steam generators (HRSGs), for a nominal total of 500 MWs, a 99 MMBtu/hr auxiliary boiler, a 1,300 kW diesel generator and a 97,570 barrel fuel oil storage tank. Emissions from each CT and HRSG combination are vented through a single stack for each. Power Block 2 consists of two combined cycle combustion turbines with unfired heat recovery steam generators (HRSGs), and a single steam-turbine electrical generator. The existing facility (inclusive of both Power Blocks) has a total generating capacity of 1030 MW. Power Block 3 is under construction at the existing Hines Energy Complex. It is a “2-on-1” combined cycle unit with an electrical generating capacity of approximately 530 megawatts (MW). Power Block 4 is being permitted as a separate and unrelated project. Power Blocks 3 and 4 will each 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.



**FIGURE 1 – Facility Location**

**FIGURE 2 – Satellite Image**

**FIGURE 3 – 1999 Close-up**

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

**1.4 Regulatory Categories**

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

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.

**2. PROPOSED PROJECT**

**2.1 Project Description**

The applicant has applied for a heat input increase to each of the combustion turbines in Power Blocks 2 and 3. This request is the result of actual testing on the Power Block 2 combustion turbines which are currently in operation. Although Power Block 3 is under construction, the combustion turbines are identical to those at Power Block 2.

Of note, Power Block 2 has not been in operation for a sufficient time period to have developed a representative ‘past actual emission’ basis for comparison to future potential emissions. Accordingly, the permitted ‘potential’ emissions are utilized herein for comparison purposes.

<u>Fuel</u>	<u>Permitted Heat Input Rate (HHV)</u>	<u>Compressor Inlet Temp.</u>	<u>Requested Heat Input Rate (HHV)</u>	<u>Percent Increase</u>
Gas	1915 MMBtu/hour	59° F	2048 MMBtu/hour	6.9%
Oil	2020 MMBtu/hour	59° F	2155 MMBtu/hour	6.7%

**2.2 Potential Emission Increases for Power Block 2**

The following tables summarize the Department's estimate of the annual emissions in tons per year from the proposed heat input increase:

<u>Existing emission limits per CT (PSD-296)</u>				
<u>Pollutant</u>	<u>Gas ppm</u>	<u>Gas lb/hr</u>	<u>Oil ppm</u>	<u>Oil lb/hr</u>
PM *		7.3		64.8
NOx	3.5	25.2	12	93.5
CO	16	73.6	30	112
VOC	2	4.7	10	22

\* Note: The PM emission limit will remain unchanged as per applicant.

<u>Requested emission limits per CT</u>				
<u>Pollutant</u>	<u>Gas lb/hr</u>	<u>Gas lb/hr increase</u>	<u>Oil lb/hr</u>	<u>Oil lb/hr increase</u>
PM	7.3	0.0	64.8	0.0
NOx	27.0	1.8	99.7	6.2
CO	78.7	5.1	119.5	7.5
VOC	5.0	0.3	23.5	1.5

<u>Annual Increase per CT* :</u>				
	<u>Gas lb/yr</u>	<u>Oil lb/year</u>	<u>Total lb/yr</u>	<u>Total TPY</u>
PM	0.0	0.0	0.0	0.0
NOx	14071.5	4499.1	18570.6	9.3
CO	41097.6	5389.3	46486.9	23.2
VOC	2624.4	1058.6	3683.1	1.8

\* Note: Based upon 8040 hrs/yr gas and 720 hours per year oil.

Based upon the calculations above, the maximum potential emissions increases resulting from the requested heat input increases at Power Block 2 are:

<u>Pollutant</u>	<u>TPY</u>
PM	0.0
NOx	18.6
CO	46.5
VOC	3.7

**2.3 Potential Emission Increases for Power Block 3**

The following tables summarize the Department's estimate of the annual emissions in tons per year from the proposed heat input increase:

<b>PB-3 Existing emission limits per CT (PSD-330)</b>				
<u>Pollutant</u>	<u>Gas ppm</u>	<u>Gas lb/hr</u>	<u>Oil ppm</u>	<u>Oil lb/hr</u>
PM *		8.5		64.8
NOx	2.5	17.9	10	76.9
CO	10	46	20	75
VOC	2	5.3	10	22

\* Note: The PM emission limit will remain unchanged as per applicant.

<b>Requested emission limits per CT</b>				
<u>Pollutant</u>	<u>Gas lb/hr</u>	<u>Gas lb/hr increase</u>	<u>Oil lb/hr</u>	<u>Oil lb/hr increase</u>
PM	8.5	0.0	64.8	0.0
NOx	19.1	1.2	82.0	5.1
CO	49.2	3.2	80.0	5.0
VOC	5.7	0.4	23.5	1.5

<b>Annual Increase per CT* :</b>				
	<u>Gas lb/yr</u>	<u>Oil lb/year</u>	<u>Total lb/yr</u>	<u>Total TPY</u>
PM	0.0	0.0	0.0	0.0
NOx	9995.2	3700.3	13695.5	6.8
CO	25686.0	3608.9	29294.9	14.6
VOC	2959.5	1058.6	4018.1	2.0

\* Note: Based upon 8040 hrs/yr gas and 720 hours per year oil.

Based upon the calculations above, the maximum potential emissions increases resulting from the requested heat input increases at Power Block 3 are:

<u>Pollutant</u>	<u>TPY</u>
PM	0.0
NOx	13.7
CO	29.3
VOC	4.0

**2.4 Potential Emission Increases for Hines Energy Complex**

<u>Pollutant</u>	<u>Increase (TPY)</u>	<u>PSD Threshold (TPY)</u>	<u>PSD applies?</u>
PM	0.0	15	NO
NOx	32.3	40	NO
CO	75.8	100	NO
VOC	7.7	40	NO

**3. CONCLUSION**

Based on the foregoing technical evaluation of the application as submitted by the applicant, the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations.

The Department has reasonable assurance that the proposed project, as described in this report will not cause or significantly contribute to a violation of any AAQS.

**DRAFT**

February 11, 2005

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Roger Zirkle, Plant Manager  
Progress Energy Florida -Hines Energy Complex  
100 Central Avenue, CX1B  
St. Petersburg, Florida 33701

Re: Project No. 1050234-011-AC: Revision of Permit No. PSD-FL-296  
Project No. 1050234-013-AC: Revision of Permit No. PSD-FL-330  
Project No. 1050234-012-AV: Revision of Title V Air Operation Permit

The applicant, Progress Energy Florida, applied on February 1, 2005, to the Department for a modification to PSD Permit numbers PSD-FL-296, PSD-FL-330 for its Hines Energy Complex located in Polk County. The modification is to allow the facility to utilize the fully installed capacity of the Power Block 2 and 3 combined cycle units by modifying the maximum heat input ratings. The Department has reviewed the modification request. The referenced permits are hereby modified as follows:

*For PSD permit PSD-FL-296 (Section III), changes are as follows:*

3. Combustion Turbine Capacity: The maximum heat input rates, based on the higher heating value of the fuels, and an ambient air temperature of 59 °F, shall not exceed ~~1945~~ 2048 mmBtu/hr when firing gas and ~~2020~~ 2155 mmBtu/hr when firing distillate fuel oil. This maximum heat input rate will vary depending upon ambient conditions and the combustion turbine characteristics that are described by the manufacturer's curves required by condition 6 of this section. Operation of these emissions units at less than 60% of capacity (based on heat input rates) is not allowed, except as required to cycle the units through periods of startup, shutdown and malfunction. The terms startup, shutdown and malfunction are defined at Rule 62-210.200, F.A.C. [Rules 62-4.070(3) and 62-210.200, F.A.C., limitation on potential to emit]

*For PSD permit PSD-FL-330 (Section III), changes are as follows:*

7. Permitted Capacity - Gas Turbines: The maximum heat input rate to each gas turbine is ~~1,945~~ 2,048 MMBtu per hour when firing natural gas and ~~2,020~~ 2,155 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.]

Additionally, corresponding changes are required to the Title V Air Operation permit (1050234-012-AV). These changes are attached as revised page 24 of the subject permit. All other conditions of the referenced permits remain unchanged. A copy of this letter shall be filed with the referenced permit and shall become part of the permit.

Executed in Tallahassee, Florida.

\_\_\_\_\_  
Michael G. Cooke, Director  
Division of Air Resource  
Management



**Subsection E. This section addresses the following emissions unit(s).**

E.U. ID No.	Brief Description
-014	170 MW Westinghouse 501FD CT2A
-015	170 MW Westinghouse 501FD CT2B

Emission units 014 and 015 each consist of a combined cycle Westinghouse 501FD Combustion Turbine, each with a nominal generator rating of 170 MW and each with a maximum heat input rating of ~~1,915~~ 2,048 MMBtu/hr (LHV) while firing natural gas and ~~2,020~~ 2,155 MMBtu/hr (LHV) while firing fuel oil. NO<sub>x</sub> emissions are controlled with dry low NO<sub>x</sub> burners (DLN) for natural gas firing and wet injection for fuel oil firing, complete with Selective Catalytic Reduction (SCR). Each combustion turbine incorporates an unfired heat recovery steam generator.

{Permitting notes: These emissions unit are regulated under Acid Rain, Phase II; NSPS - 40 CFR 60, Subpart GG, Standards of Performance for Stationary Gas Turbines, adopted and incorporated by reference in Rule 62-204.800(7), F.A.C.; Rule 212.400(5), F.A.C., Prevention of Significant Deterioration (PSD); PSD-FL-296A; Rule 62-212.400(6), F.A.C.}

**The following specific conditions apply to the emissions unit(s) listed above:**

**Essential Potential to Emit (PTE) Parameters**

**E.1. Permitted Capacity.** The maximum heat input rate to each gas turbine is ~~1,915~~ 2,048 MMBtu per hour when firing natural gas and ~~2,020~~ 2,155 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. and PSD-FL-296A]

**E.2. Equipment and Controls - 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 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]

**a. Gas Turbine NO<sub>x</sub> Controls**

1. **DLN Combustion:** The permittee shall operate and maintain the DLN combustion system to control NO<sub>x</sub> 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 NO<sub>x</sub> emissions. Thereafter, each system shall be maintained and tuned in accordance with the manufacturer's recommendations.



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- 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  
 Progress Energy Florida  
 Hines Energy Complex  
 100 Central Avenue BB1A-HE44  
 St. Petersburg, Florida 33701-5511

2. Article Number  
 (Transfer from service label) 7000 2870 0000 7027 9867

**COMPLETE THIS SECTION ON DELIVERY**

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*[Handwritten Signature]*

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Mr. Roger Zirkle, Plant Manager

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 Mr. Roger Zirkle, Plant Manager  
 Street, Apt. No., or PO Box No.  
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 St. Petersburg, Florida 33701-5511