



Jeb Bush  
Governor

# Department of Environmental Protection

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

Colleen M. Castille  
Secretary

May 4, 2005

Mr. Michael P. Opalinski, Vice President of Technical Services  
Seminole Electric Cooperative, Inc. – Payne Creek Generating Station  
16313 North Dale Mabry Highway  
Tampa, FL 33688-2000

Re: Draft Air Permit No. PSD-FL-344  
Project No. 0490340-003-AC  
Payne Creek Generating Station, Peaker Project  
300 MW nominal capacity increase

Dear Mr. Opalinski:

On August 27, 2004, Seminole Electric Cooperative, Inc. submitted an application to add a nominal 300 MW of generating capacity to the existing Payne Creek Generating Station, which is located at 6697 County Road 663, Bowling Green, Hardee County, Florida. Enclosed are the following documents: "Draft Permit", "Written Notice of Intent to Issue Air Permit", and "Public Notice of Intent to Issue Air Permit".

The "Draft Permit" includes the specific conditions that regulate the emissions units covered by the proposed permit. The "Written Notice of Intent to Issue Air Permit" provides important information regarding: the Permitting Authority's intent to issue an air permit for the proposed project; the requirements for publishing a Public Notice of the Permitting Authority's intent to issue an air permit; the procedures for submitting comments on the Draft Permit; the process for filing a petition for an administrative hearing; and the availability of mediation. The "Public Notice of Intent to Issue Air Permit" 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

TV/mh

"More Protection, Less Process"

Printed on recycled paper.

## WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

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

Seminole Electric Cooperative, Inc.  
Payne Creek Generating Station  
6697 County Road 663  
Tampa, Florida 33834

*Authorized Representative:*

Mr. Michael P. Opalinski, Vice President of Technical Services

Draft Air Permit No. PSD-FL-344  
Project No. 0490340-003-AC  
Payne Creek Generating Station  
Peaker Project  
Hardee County, Florida

**Facility Location:** Seminole Electric Cooperative, Inc. (SECI) operates an existing power plant located in Bowling Green, Hardee, Florida.

**Project:** The applicant proposes to install five nominal 60 MW gas turbine-electrical generator sets and other miscellaneous support equipment. Upon completion of this project, the plant will have a total generating capacity of approximately 800 MW. The existing facility is subject to the power plant site certification requirements of the Department (PA89-25). Details of the project are provided in the application and the enclosed "Draft Permit".

**Permitting Authority:** Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Florida Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Bureau of Air Regulation's physical address is 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Bureau of Air Regulation's phone number is 850/488-0114.

**Project File:** A complete project file is 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 address indicated above for the Permitting Authority. 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 contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above. A copy of the application is available at the Air Resource Section of the Department's Southwest District Office at 3804 Coconut Palm Drive, Tampa, Florida 33619-8218 (Phone: 813/744-6100).

**Notice of Intent to Issue Permit:** The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all applicable provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice 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 Air 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 the address or phone number listed above. Pursuant to Rule 62-110.106(5), F.A.C., the applicant shall provide proof of publication to the 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:** 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 email 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

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Seminole Electric Cooperative, Inc.  
Payne Creek Generating Station

Project No. 0490340-003-AC  
Draft Permit No. PSD-FL-344

## WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

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.

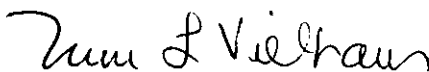
**Petitions:** A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's 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 to Issue Air Permit. 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 of Intent to Issue Air Permit, 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 of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above. This PSD permitting action is being coordinated with a certification under the Power Plant Siting Act (Sections 403.501-519, F.S.). If a petition for an administrative hearing on the Department's Intent to Issue Air Permit is filed by a substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3), F.S.

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

Executed in Tallahassee, Florida.



Trina Vielhauer, Chief  
Bureau of Air Regulation

**WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT**

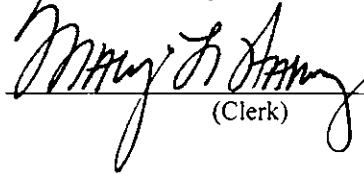
**CERTIFICATE OF SERVICE**

The undersigned duly designated deputy agency clerk hereby certifies that this "Written Notice of Intent to Issue Air Permit" package (including the Public Notice, and the Draft Permit) was sent by certified mail (\*) and copies were mailed by U.S. Mail before the close of business on 5/9/05 to the persons listed below.

Michael P. Opalinski, SECI \*  
Mike Roddy, SECI  
Tom Davis, ECT  
Jim Little, EPA Region 4  
Buck Oven, DEP-Siting  
Jerry Kissel, DEP-SWD  
Gregg Worley, EPA Region 4  
John Bunyak, NPS

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.

  
(Clerk)

5/9/05  
(Date)

## PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection  
Project No. 0490340-003-AC / Draft Air Permit No. PSD-FL-344  
Seminole Electric Cooperative, Inc. – Payne Creek Generating Station  
Hardee County, Florida

**Applicant:** The applicant for this project is Seminole Electric Cooperative, Inc. (SECI). The applicant's authorized representative is Mr. Michael P. Opalinski, Vice President of Technical Services. The applicant's mailing address is 16313 North Dale Mabry Highway, Tampa, Florida 33688.

**Facility Location:** SECI operates the existing Payne Creek Generating Station located in the Hardee County, Florida.

**Project:** The existing Payne Creek Generating Station consists of two nominal 157.5 megawatts (MW) combined-cycle Siemens Westinghouse 501FD combustion turbines. The combined-cycle turbines each include one unfired heat recovery steam generator (HRSG). The combustion turbines only operate in combined-cycle mode (i.e., the HRSGs are not equipped with bypass stacks). Steam generated by the two HRSGs is sent to one common nominal 173 MW steam turbine. The facility utilizes pipeline natural gas as its primary fuel source with distillate fuel oil serving as a backup fuel. After completion of this project, the plant will have a nominal generating capacity of approximately 800 MW.

The existing power plant is located in Hardee County, an area that is currently in attainment with the state and federal Ambient Air Quality Standards (AAQS) or otherwise designated as unclassifiable. The power plant is a major facility in accordance with Rule 62-212.400, F.A.C., the regulatory program for the Prevention of Significant Deterioration (PSD) of Air Quality. Therefore, new projects at the existing facility must be reviewed for PSD applicability.

In August of 2004, the Department received a PSD permit application for the existing facility that would increase the generating output of the facility from 500 to 800 megawatts of output. Based on potential emissions increases, the project is subject to PSD preconstruction review for nitrogen oxides, particulate matter, sulfur dioxide, and volatile organic compounds. In February of 2005, the Department made a preliminary determination of the Best Available Control Technology (BACT) for each of these pollutants. The Department's determination resulted in an emission limitation for Nitrogen Oxides (NO<sub>x</sub>) which was more stringent than the applicant had sought, and the applicant filed a petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. Subsequently, settlement discussions resulted in the NO<sub>x</sub> emission limit, which is reflected in the terms and conditions of the draft permit. Based on the supporting air quality analysis of the potential impacts from increased operation, the applicant provided the Department with reasonable assurance that the project would not significantly contribute to or cause a violation of any state or federal ambient air quality standards and would not significantly contribute to or cause a violation of any PSD Class I or Class II increments. The facility is subject to the power plant site certification requirements of the Department.

**Permitting Authority:** Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Florida Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Bureau of Air Regulation's physical address is 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Bureau of Air Regulation's phone number is 850/488-0114 and fax number is 850/921-9533.

**Project File:** A complete project file is 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 address indicated above for the Permitting Authority. 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 contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above. A copy of the application is available at the Air Resource Section of the Department's Southwest District Office at 3804 Coconut Palm Drive, Tampa, Florida 33619-8218 (Phone: 813/744-6100).

**Notice of Intent to Issue Air Permit:** The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

(Public Notice to be Published in the Newspaper)

## PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

**Comments:** 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.

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 Public Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above. This PSD permitting action is being coordinated with a certification under the Power Plant Siting Act (Sections 403.501-519, F.S.). If a petition for an administrative hearing on the Department's Intent to Issue Air Permit is filed by a substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3), F.S.

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

(Public Notice to be Published in the Newspaper)

**DRAFT**

**PERMITTEE:**

Seminole Electric Cooperative, Inc.  
Payne Creek Generating Station  
6697 County Road 663  
Bowling Green, FL 33834

*Authorized Representative:*

Mr. Michael P. Opalinski  
Vice President of Technical Services

ARMS Permit No.	0490340-003-AC
PSD Permit No.	PSD-FL-344
Facility ID No.	0490340
SIC No.	4911
Expires:	December 31, 2007 [PA 89-25]

**PROJECT AND LOCATION**

This permit is issued pursuant to the requirements for the Prevention of Significant Deterioration of Air Quality (PSD Permit). The proposed project authorizes the installation of five combustion turbine sets, complete with electrical generator sets. The gas turbines are capable of producing a nominal 300 MW of electricity.

The project will be located at the existing Payne Creek Generating Station, located in Hardee County. UTM coordinates for this facility are Zone 17; 405.049 km E; 3057.712 km N.

**STATEMENT OF BASIS**

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.) and 40 CFR 52.21. 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.

**APPENDICES**

The following Appendices are attached as part of this permit.

Attachment CS - Compliance Spreadsheet  
Appendix GC - Construction Permit General Conditions

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

Date:

**DRAFT****FACILITY DESCRIPTION**

Completion of this project will result in the installation of five new electric power generator sets, capable of providing a nominal 300 MW of electrical power.

**NEW EMISSIONS UNITS**

The proposed project will result in the following new emissions units.

Emissions Unit No.	Emissions Unit Description
005 - 009	Pratt & Whitney Twin Pac Combustion Turbines each representing approximately 60 megawatts of peaking power.

**REGULATORY CLASSIFICATION**

HAPs: This facility is a synthetic minor source of hazardous air pollutants (Title III) and the permittee maintains that the synthetic minor status is unaffected by this project.

Acid Rain: This facility is subject to the acid rain provisions of the Clean Air Act (Title IV).

Title V Major Source: This facility is a Title V major source of air pollution.

PSD Major Source: Each pollutant with potential emissions greater than the Significant Emissions Rates specified in Table 62-212.400-2, F.A.C. requires a PSD review. For this project, emissions of NO<sub>x</sub>, CO, VOC, PM<sub>10</sub> and SO<sub>2</sub> are significant, although CO emissions have been reduced below the PSD significance level (100 TPY) via the application of an oxidation catalyst.

NSPS Sources: The combustion turbines specified in this permit are also subject to regulation under the New Source Performance Standards for Stationary Gas Turbines, 40 CFR 60, Subpart GG.

**RELEVANT DOCUMENTS**

- Permit application received on 08/27/04
- Intent to Issue Permit package mailed on 05/05/05
- Public Notice published in xxxxxx on xx/xx/xx
- Proof of publication received xx/xx/xx



## GENERAL AND ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to construct, operate or modify an emissions unit should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (DEP), at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400 and phone number 850/488-0114.
2. Compliance Authority: All documents related compliance activities such as reports, tests, and notifications should be submitted to the Air Resources Section of the Southwest District Office, Florida Department of Environmental Protection, 3804 Coconut Palm Drive, Tampa, Florida 323619-8218. The phone number is 813/744-6100 and the fax number is 813/744-6084.
3. Terminology: The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code.
4. General Conditions: The owner and operator are subject to, and 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.]
5. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.); and the Title 40, Parts 60, 72, 73, and 75 of the Code of Federal Regulations (CFR), adopted by reference in Rule 62-204.800, F.A.C. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
6. PSD Expiration: Approval to construct shall become invalid if construction is not commenced within 18 months after receipt of such approval, or if construction is discontinued for a period of 18 months or more or if 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.
7. Permit Expiration: For good cause, the permittee may request that this PSD air construction 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, and 62-210.300(1), F.A.C.]
8. BACT Determination: In conjunction with extension of the 18 month period to commence or continue construction, phasing of the project, or an extension of the permit expiration date, the permittee may be required to demonstrate the adequacy of Best Available Control Technology (BACT) for the source. [Rule 62-212.400(6)(b), F.A.C.]
9. 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.]
10. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
11. 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 Region 4 Office of the U.S. Environmental Protection Agency in Atlanta, Georgia and a copy to the Department's Bureau of Air Regulation in Tallahassee. [40 CFR 72]
12. Title V Permit: This permit authorizes construction of the permitted emissions unit and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emission units. The permittee shall apply for and obtain a Title V operation permit in accordance with Rule 62-213.420, F.A.C. 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 and a copy to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

This section of the permit addresses the following new emissions units.

E.U. ID No.	COMMON EMISSION UNIT DESCRIPTION
005 - 009	Pratt & Whitney Twin Pac Combustion Turbines each representing approximately 60 megawatts of peaking power.

#### BACKGROUND

Seminole Electric filed a petition for administrative hearing on the draft permit issued by the Department on February 4, 2005. This subsequent (draft) permit is issued as the result of a settlement agreement entered between the Department and the applicant resolving that litigation.

This project involves the installation of 10 Pratt & Whitney FT-8 simple cycle combustion turbines with a nominal rating of 30 MW each. These units will be used for peaking purposes and each will operate less than an equivalent of 2000 hours on gas each year<sup>1</sup>.

Both parties recognize this as a unique case. This is the only (draft) permit issued by the Department within at least the last five years for simple cycle combustion turbines, used for peaking purposes, that limits operations to an equivalent of 2000 hours on gas each year. As a result of lengthy settlement discussions and the unique aspects of this project, the parties reached a settlement agreement on the NO<sub>x</sub> emission limit for gas firing. Therefore, the Department issues this (draft) permit with a NO<sub>x</sub> emission limit that is equivalent to 20 ppmvd @ 15% oxygen at 2000 hours per year of natural gas operation for this unique project. This project is not precedent for any other simple cycle combustion turbine project as set forth in the Department's technical evaluation dated February 4, 2005.

<sup>1</sup> 500 hours of oil firing was also requested, although the application was structured so as to allow for gas in lieu of oil.

#### APPLICABLE STANDARDS AND REGULATIONS

1. Prevention of Significant Deterioration: The emission units addressed in this section are subject to a PSD Review for nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter (PM<sub>10</sub>), carbon monoxide (CO), Volatile Organic Compounds (VOC) and particulate matter (PM<sub>10</sub>). [Rule 62-212.400, F.A.C.]
2. NPS Requirements: The combustion turbines shall comply with all applicable requirements of 40 CFR 60, adopted by reference in Rule 62-204.800(7)(b), F.A.C.
  - (a) Subpart A, General Provisions, including:
    - 40 CFR 60.7, Notification and Record Keeping
    - 40 CFR 60.8, Performance Tests
    - 40 CFR 60.11, Compliance with Standards and Maintenance Requirements
    - 40 CFR 60.12, Circumvention
    - 40 CFR 60.13, Monitoring Requirements
    - 40 CFR 60.19, General Notification and Reporting Requirements
  - (b) Subpart GG, Standards of Performance for Stationary Gas Turbines: These provisions include a requirement to correct test data to ISO conditions; however, such correction is not used for compliance determinations with the BACT standards.

#### PERFORMANCE RESTRICTIONS

3. Combustion Turbines: The permittee is authorized to install, tune, operate and maintain five new combustion turbine sets with electrical generators (Pratt & Whitney Twin Pac). Each Twin Pac is designed to produce approximately 60 MW of electrical power. [Applicant Request]
4. Permitted Capacity: The heat input to each combustion turbine set from firing natural gas shall not exceed 635.6 MMBtu per hour based on the following: 100% base load, a higher heating value (HHV) for natural gas and a compressor inlet air temperature of 50° F. The heat input to each combustion turbine set from firing No. 2 fuel oil shall not exceed 576.8 MMBtu per hour based on the following: 100% base load, HHV and a compressor inlet air

### SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

temperature of 78° F. 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. Heat input rates will vary depending upon compressor conditions and the combustion turbine characteristics. Operating data may be adjusted for the appropriate site conditions in accordance with the performance curves on file with the Department. [Design, Rule 62-210.200, F.A.C. (Definition - PTE)]

5. Simple Cycle, Peaking Operation: Each combustion turbine shall operate only in simple cycle mode not to exceed the permitted hours of operation allowed by this permit. This restriction is based on the permittee's request, which formed the basis of the PSD applicability which resulted in the emission standards specified in this permit. For any request to convert this unit to combined cycle operation by installing/connecting to heat recovery steam generators or changes to the fuel quality or quantity which may cause an increase in short or long-term emissions, the permittee may be required to submit a full PSD permit application complete with a new proposal of the best available control technology as if the unit had never been built. [Rules 62-212.400(2)(g) and 62-212.400(6)(b), F.A.C.]
6. Allowable Fuels: Each combustion turbine shall only be fired with natural gas containing no more than 1 grain of sulfur per 100 dry standard cubic feet of gas (monthly average) and 0.05% sulfur distillate oil (or superior). The permittee shall demonstrate compliance with the fuel sulfur limit by keeping the records specified in this permit. [Applicant Request, Rule 62-210.200, F.A.C. (Definition - PTE)]
7. Hours of Operation: Each Twin Pac shall operate no more than 2000 hours on natural gas and 500 hours on distillate fuel oil, subject to the exceptions defined in Condition III. 17. The permittee shall install, calibrate, operate and maintain a monitoring system to measure and accumulate the hours of operation for each Twin Pac. In the event that any increase to the hours of operation (of any fuel type) is sought prior to December 31, 2010 a construction permit application shall be submitted for the installation of an SCR (consistent with the conditions of this permit) prior to the increase being granted. If an increase from the 2000 hours on natural gas and 500 hours on distillate fuel oil is desired after December 31, 2010, the permittee shall be required to submit a full PSD permit application complete with a new proposal of the best available control technology as if the unit had never been built. [Rule 62-212.400, F.A.C.; Rule 62-212.400(2)(g), F.A.C.; Rule 62-210.200, F.A.C. (PTE)]
8. Operating Procedures: The determinations established by this permit rely on "good operating practices" to minimize emissions. Therefore, all operators and supervisors shall be properly trained to operate and maintain the combustion turbines and pollution control systems in accordance with the guidelines and procedures established by the manufacturer. The training shall include good operating practices as well as methods of minimizing excess emissions. [Applicant Request; Rule 62-4.070(3); Rule 62-212.400, F.A.C.]
9. 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 the 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.]

#### EMISSIONS CONTROLS

10. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering, confining, or applying water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]
11. Water Injection/Dry Low NO<sub>x</sub> Burner Technology: The permittee shall install, calibrate, tune, operate, and maintain a dry low NO<sub>x</sub> burner and/or water injection system for each combustion turbine. The system shall be designed and operated so as to ensure that NO<sub>x</sub> emissions are sufficient to achieve the NO<sub>x</sub> emission limits in Condition III. 17. [Rule 62-212.400, F.A.C.]
12. Oxidation Catalyst: To control CO and VOC emissions, each combustion turbine shall include an oxidation catalyst. [Design and Rule 62-212.400, F.A.C. – escape PSD]
13. SCR: Should an SCR be installed to control NO<sub>x</sub> emissions, each combustion turbine limit will be 5.0 ppm (gas) and 8.0 ppm (oil). In the event an SCR is not installed, the NO<sub>x</sub> limits shall be according to Condition III. 17. The

**SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS**

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installation of SCR prior to December 31, 2010 shall void the natural gas operating hours limitation in Condition III. 7, and allow for 8760 hours of operation per year, 2400 hours of which may be while firing oil. The ammonia slip rate shall be limited to 5 ppmvd @ 15% O<sub>2</sub>. All NO<sub>x</sub> limits in this condition are in units of ppmvd corrected to 15% oxygen. [Rule 62-212.400, F.A.C.; Rule 62-210.200, F.A.C. (PTE)]

14. **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.]

**EMISSIONS STANDARDS**

15. **Summary:** The following table summarizes the emissions standards for each pollutant and total emissions in lb/hr and TPY (PTE) for informational and convenience purposes only; such standards are not separately enforceable. This table does not supersede any of the terms or conditions of this permit:

Pollutant	Twin Pac Emission Standards (limits)	Emission Equivalents (lb/hr)		Emission Unit (lb/year) <sup>1</sup>	TPY for 5 EU's <sup>1</sup>
		OIL	GAS		
NO <sub>x</sub>	lb/hr equiv of 20 ppm (gas), 42 ppmvd (oil) @ 15% O <sub>2</sub>	102.4	51	153,200	383
CO	19.9 TPY <sup>2</sup>	2.7	13.1	27,550	68.87
SO <sub>2</sub>	Natural Gas & 0.05% Sulfur oil	29.4	1.8	18,300	45.75
PM <sub>10</sub>	VE	14	6	19,000	47.5
VOC	CO as surrogate	9.2	16.6	37,800	94.5

Notes: (1) Assumed 2000 hours of gas operation and 500 hours of oil operation.

(2) Calculated maximum based upon applicant proposed oxidation catalyst at 90% removal efficiency and proposed limit.

16. **Carbon Monoxide (CO):**

CO emissions from each Twin Pac shall not exceed 19.9 TPY. The permittee shall demonstrate compliance with this standard by conducting performance tests and emissions monitoring in accordance with EPA Method 10 and the requirements of this permit. [Rule 62-212.400(2)(g), F.A.C. (PSD Avoidance)]

17. **Nitrogen Oxides (NO<sub>x</sub>):**

(a) NO<sub>x</sub> emissions from each Twin Pac while firing gas shall be controlled to achieve an equivalent of 20 ppm at full load for 2000 hours per year, which equates to 102,000 lbs over a rolling 12 calendar month period while firing natural gas as per the attached compliance spreadsheet, attachment and incorporated herein as a part of this permit as attachment CS. In the event that during any rolling 12 calendar month period, the NO<sub>x</sub> emissions while firing natural gas are in excess of 102,000 lbs, a corresponding "hours limitation" shall apply to that Twin Pac unit for the next calendar month of actual operation. The hours limitation shall be calculated in accordance with attachment CS and will yield an equivalent and off-setting NO<sub>x</sub> reduction for the next calendar month of actual operation. This hours limitation adjustment will ensure a truing up of NO<sub>x</sub> emissions on a monthly basis. During the next calendar month of actual operation, any hours operated in excess of the calculated hours limitation ("available hours") shall represent a violation of this permit.

(b) NO<sub>x</sub> emissions from each Twin Pac shall not exceed a 64 lb/hr average over any calendar month while firing natural gas

(c) During any 12 calendar month rolling average period, should the actual NO<sub>x</sub> emissions for a Twin Pac unit total less than 102,000 lbs, it shall be permissible for that Twin Pac unit to fire an additional amount of natural gas (over the 2000 hours limitation in Condition III. 7) provided that:

(1) The 12-month rolling average of 102,000 lbs of NO<sub>x</sub> for natural gas firing is not exceeded, and

(2) The allowable hours of oil firing (500 hours per Twin Pac per 12 month period) shall be reduced by one hour for each hour of additional gas firing. In no circumstance shall it be permissible for a Twin Pac to operate over 2500 total hours during any 12 month period.

(d) NO<sub>x</sub> emissions shall not exceed 42 ppmvd while firing fuel oil.

(e) During the initial twelve calendar months of operation, NO<sub>x</sub> emissions while firing natural gas shall not exceed 102,000 lbs per Twin Pac, nor 64 lb/hr averaged over any calendar month.

- (f) Compliance with the standard specified herein shall satisfy the NSPS and BACT requirements.
- (g) The permittee shall demonstrate compliance with this standard by conducting performance tests, emissions monitoring and continuous water-to-fuel ratio monitoring in accordance with 40 CFR Part 60 Subpart GG, as well as all other conditions of this permit.
- (h) The attached Compliance Spreadsheet shall be used to calculate NO<sub>x</sub> emissions, in accordance with Specific Condition 34.

[Rule 62-212.400, F.A.C.]

18. Particulate Matter (PM/PM<sub>10</sub>) Sulfur Dioxides (SO<sub>2</sub>) and Volatile Organic Compounds (VOC):

- (a) Fuel Specifications. Emissions of PM, PM<sub>10</sub>, and SO<sub>2</sub> shall be limited by the use of pipeline-quality natural gas containing no more than 1 grain per standard cubic feet, the use of 0.05% Sulfur oil and good combustion techniques as specified in this permit. The permittee shall demonstrate compliance with the fuel sulfur limit by maintaining the records specified by this permit. [Rule 62-212.400, F.A.C. (PSD Applicability)].
- (b) VE Standard. Visible emissions from each combustion turbine shall not exceed 10% opacity, based on a 6-minute average. The permittee shall demonstrate compliance with this standard by conducting tests in accordance with EPA Method 9 and the performance testing requirements of this permit. [Rule 62-212.400, F.A.C. (PSD Applicability)]
- (c) Compliance with the CO standard specified within this permit shall act as a surrogate for the VOC requirements.

**EXCESS EMISSIONS**

- 19. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction, shall be prohibited. These emissions shall be included in the calculation of the 12-month rolling averages to demonstrate compliance with the continuous NO<sub>x</sub> emissions standard. [Rule 62-210.700(4), F.A.C.]
- 20. Excess Emissions Allowed: Providing the permittee adheres to best operational practices to minimize the amount and duration of excess emissions, the following conditions shall apply:
  - (a) During startup and shutdown, visible emissions excluding water vapor shall not exceed 20% opacity for more than 2 hours in any 24-hour period. [Design; Rule 62-210.700(1) and (5), F.A.C.]
  - (b) During all startups, shutdowns, and malfunctions, the continuous emissions monitor (water-to-fuel ratio or CEMS) shall monitor and record emissions. However, up to 2 hours of monitoring data during any 24-hour period may be excluded from continuous compliance demonstrations as a result of startups, shutdowns, and documented malfunctions. A documented malfunction means a malfunction that is documented within one working day of detection by contacting the Compliance Authority by telephone, facsimile, or electronic mail. In case of malfunctions, the permittee shall notify the Compliance Authorities within one working day. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Design; Rules 62-210.700(1), (5), and 62-4.130, F.A.C.]

**EMISSIONS PERFORMANCE TESTING**

- 21. Sampling Facilities: The permittee shall design the combustion turbine stack to accommodate adequate testing and sampling locations in order to determine compliance with the applicable emission limits specified by this permit. Permanent stack sampling facilities shall be installed in accordance with Rule 62-297.310(6), F.A.C. [Rules 62-4.070 and 62-204.800, F.A.C., and 40 CFR 60.40a(b)]
- 22. Performance Test Methods: Compliance tests shall be performed in accordance with the following reference methods as described in 40 CFR 60, Appendix A, and adopted by reference in Chapter 62-204.800, F.A.C.
  - (a) EPA Method 9 - Visual Determination of the Opacity of Emissions from Stationary Sources;
  - (b) EPA Method 10 - Determination of Carbon Monoxide Emissions from Stationary Sources;

- (c) EPA Method 7E - Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure); or EPA Method 20 - Determination of Oxides of Nitrogen Oxide, Sulfur Dioxide and Diluent Emissions from Stationary Gas Turbines; or ASTM D6522-00 Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers and Process Heaters Using Portable Analyzers, as specified in 40 CFR 60.335;
- (d) EPA Method 25 or 25A - Determination of Volatile Organic Concentrations. (EPA Method 18 may be conducted to account for the non-regulated methane portion of the VOC emissions); and
- (e) Conditional Test Method 027 – Measurement of Ammonia Slip; this shall be required in the event that SCR is installed.

No other test methods may be used for compliance testing unless prior DEP approval is received, in writing, from the DEP Emissions Monitoring Section Administrator in accordance with an alternate sampling procedure specified in Rule 62-297.620, F.A.C.

- 23. Test Notification: The permittee shall notify the Compliance Authority in writing at least 30 days prior to initial NSPS performance tests and at least 15 days prior to any other required tests. [40 CFR 60.7, 40 CFR 60.8 and Rule 62-297.310(7)(a)9., F.A.C.]
- 24. Initial Tests Required: Initial performance tests to demonstrate compliance with the emission standards specified in this permit shall be conducted on each combustion turbine within 60 days after achieving at least 90% of maximum production rate, but not later than 180 days after initial operation of the emissions unit. Initial performance tests shall be conducted for CO, NO<sub>x</sub>, VOC, ammonia slip (if SCR installed) and visible emissions while combusting each fuel. Initial NO<sub>x</sub> performance tests shall be conducted in accordance with the requirements of NSPS Subpart GG and shall also be converted into units of the NSPS emissions standard. [Rule 62-297.310(7)(a)1., F.A.C.]
- 25. Annual Performance Tests:
  - a) To demonstrate compliance with the emission standards specified in this permit, the permittee shall conduct annual performance tests for NO<sub>x</sub>, CO, and visible emissions for each combustion turbine on each fuel. VOC emission tests are not required annually provided the CO emission standards are being met. The CO standard shall be demonstrated by the measurement of CO emissions upstream and downstream of the oxidation catalyst and by calculating CO removal efficiency. In the event that the measured removal efficiency is less than or equal to 85%, the Department shall be immediately notified and the oxidation catalyst shall be renewed within 120 calendar days of the test date. Failure to fully comply with this requirement shall represent a violation of this permit. Once the oxidation catalyst is renewed, the Department shall be notified as to the actual date complete. Testing for ammonia slip is required during the first scheduled annual performance tests after the cumulative hours of operation on each combustion turbine exceed 1,500 hours of oil firing or 5,000 hours of gas firing starting from the initial installation of the SCR catalysts. Thereafter, ammonia testing is required during the first scheduled annual performance tests after subsequent cumulative 1,500 hours of oil firing and 5,000 hours of gas firing in each combustion turbine or after regeneration, replacement or addition to the SCR catalyst system. If conducted at permitted capacity, NO<sub>x</sub> emissions data collected during the annual NO<sub>x</sub> continuous monitor RATA required pursuant to 40 CFR 75 may be substituted for the required annual performance test. Tests required on an annual basis shall be conducted at least once during each federal fiscal year (October 1<sup>st</sup> to September 30<sup>th</sup>). In the event that the operation of a combustion turbine is less than 400 hours per year on natural gas or distillate oil, annual testing is not required for that year and that fuel. [Rule 62-297.310(7)(a), F.A.C.]
  - b) For purposes of demonstrating ongoing qualification as Low Mass Emission (LME) Units, the permittee shall comply with the procedures outlined in 40 CFR 75.19.
  - c) Following 3 years of annual testing for each combustion turbine, the permittee may request a reduction in the testing frequency (including retesting of Appendix E NO<sub>x</sub>-to-heat input correlation for each combustion turbine) as set forth below:
    - 1) The permittee shall demonstrate to the Department's satisfaction that a group or groups of combustion turbines are performing identically;

- 2) No more than three of the ten combustion turbines may be considered as identical for the purposes of grouping, i.e. there shall be no less than 4 total groups;
- 3) The combustion turbine which is selected for testing within each group will be rotated annually;
- 4) The operating hour exemption from testing shall not apply to an entire group of combustion turbines, i.e. every group shall be required to demonstrate annual compliance during every federal fiscal year;
- 5) Should the combustion turbine selected for annual testing within a group fail to comply with any permitted emission standard or trigger an additional requirement within this permit, every combustion turbine within that group shall be considered to have done likewise and shall be treated as such; and
- 6) The Department reserves the right to discontinue the reduction in testing frequency for annual compliance demonstrations.

[Rule 62-4.070, F.A.C.]

26. Tests Prior to Permit Renewal: Prior to renewing the air operation permit, the permittee shall conduct performance tests for CO, NO<sub>x</sub>, VOC and visible emissions from each combustion turbine. Testing for ammonia slip meeting the requirements of Condition 25 (above) 'Annual Performance Tests' will satisfy the requirements of this condition. These tests shall be conducted within the 12-month period prior to renewing the air operation permit. For pollutants required to be tested annually, the permittee may submit the most recent annual compliance test to satisfy the requirements of this provision. [Rule 62-297.310(7)(a)3., F.A.C.]
27. Tests After Major Repairs or Replacements: The Department may require that additional compliance testing be conducted within 90 days after major repairs or replacements are performed. [Rule 62-297.310(7)(a)4., F.A.C.]
28. Combustion Turbine Testing Capacity: Initial performance tests shall be conducted in accordance with 40 CFR 60.8 and 40 CFR 60.335 for pollutants subject to a New Source Performance Standard (NSPS) in Subpart GG for stationary gas turbines. Other required performance tests for compliance with standards specified in this permit shall be conducted with each combustion turbine operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum heat input rate allowed by the permit, corrected for the average ambient air temperature during the test (with 100 percent represented by a curve depicting heat input vs. ambient temperature). If it is impracticable to test at permitted capacity, the source may be tested at less than permitted capacity. However, subsequent operation is limited by adjusting the entire heat input vs. ambient temperature curve downward by an increment equal to the difference between the maximum permitted heat input (corrected for inlet temperature) and 110 percent of the value reached during the test 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 purposes of additional compliance testing to regain the permitted capacity. Emissions performance tests shall meet all applicable requirements of Chapters 62-204 and 62-297, F.A.C. [Rule 62-297.310(2), F.A.C.]
29. 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.]
30. Applicable Test Procedures:
  - (a) Required Sampling Time.
    1. 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. [Rule 62-297.310(4)(a)1., F.A.C.]
    2. The minimum observation period for a visible emissions compliance test shall be sixty (60) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. [Rule 62-297.310(4)(a)2., F.A.C.]
  - (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. [Rule 62-297.310(4)(b), F.A.C.]
  - (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)(d), F.A.C.]



**31. 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. [Rule 62-297.310(5)(a), F.A.C.]
- (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)(b), F.A.C.]

- 32. Special Compliance Tests:** When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

**CONTINUOUS MONITORING REQUIREMENTS**

- 33. NO<sub>x</sub> CEMS:** The combustion turbines qualify as Low Mass Emission (LME) Units for the purposes of Acid Rain. Accordingly, the permittee has indicated that these emissions units will follow the procedures outlined in 40 CFR 75.19 in lieu of NO<sub>x</sub> CEMS. However, should the permittee elect or be otherwise required to install NO<sub>x</sub> CEMS, such NO<sub>x</sub> monitoring devices shall comply with the requirements of 40 CFR 60.334(b) for 40 CFR Part 75 monitoring systems. A monitoring plan shall be provided to the Department's Emissions Monitoring Section Administrator, EPA Region 4, and the Compliance Authority for review no later than 45 days prior to the first scheduled certification test pursuant to 40 CFR 75.62. The plan shall consist of data on CEM equipment specifications, manufacturer, type, calibration and maintenance needs, and its proposed location. A monitor for carbon dioxide may be used in place of the oxygen monitor, but the system shall be capable of correcting the emissions to 15% oxygen. [Rule 62-212.400, F.A.C. and 40 CFR 75]
- 34. Water-to-fuel ratio:** Each Twin Pac shall be fitted with continuous water to fuel ratio monitoring equipment, as per 40 CFR 75 Appendix E. Appendix E is an alternative monitoring protocol that may be used by oil and gas-fired peaking units in lieu of installing a CEMS to measure NO<sub>x</sub> emissions. Hourly NO<sub>x</sub> emissions (lbs for natural gas, ppm for oil) shall be correlated to the results of a series of stack tests based on the heat input to the unit at various water-to-fuel injection ratios. Based upon the measured water-to-fuel ratio, and the measured heat input for each fuel, the actual NO<sub>x</sub> emissions shall be calculated. With the appropriate load selection, the Subpart GG performance testing may also be utilized to satisfy the NO<sub>x</sub>-to-heat input correlation testing requirements of Appendix E. Retesting of Appendix E NO<sub>x</sub>-to-heat input correlation for each combustion turbine shall be required annually, except as provided for within Specific Condition 25 of this permit. The permittee shall solicit a list from the turbine manufacturer of at least four operating parameters (indicative of NO<sub>x</sub> formation) with acceptable ranges to serve as QA/QC parameters as per Appendix E. The manufacturer supplied ranges for the parameters, shall be used on an hourly basis to establish that the unit is being operated in a normal fashion and, therefore, that the NO<sub>x</sub>-to-heat input correlation (by fuel type) can be used with validity.

**COMPLIANCE DEMONSTRATIONS**

- 35. 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.]
- 36. Fuel Records:** The permittee shall demonstrate compliance with the fuel sulfur limits for natural gas and fuel oil specified in this permit by maintaining records required by 40 CFR 60.334 and 60.335. [Rules 62-4.070(3) and 62-4.160(15), F.A.C.]

37. Monthly Operations Summary: By the fifth calendar day of each month, the permittee shall record the hours of operation and amount of each fuel fired for each combustion turbine. An hour of operation is defined to include a totalization of every minute within a specified period (e.g. month), during which a permitted fuel is fired (regardless of the amount) divided by 60. The information shall be recorded in a written or electronic log and shall summarize the previous month of operation and the previous 12 months of operation. Information recorded and stored as an electronic file shall be available for inspection and/or printing within at least one day of a request from the Compliance Authority. [Rule 62-4.160(15), F.A.C.]

#### REPORTS

38. Emissions Performance Test Reports: A report indicating the results of any required emissions performance test shall be submitted to the Compliance Authority no later than 45 days after completion of the last test run. The test report shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in Rule 62-297.310(8)(c), F.A.C. [Rule 62-297.310(8), F.A.C.].
39. Excess Emissions Reporting and Semi-annual Reports: If excess NO<sub>x</sub> or visible emissions occur due to malfunction, the permittee shall notify the Compliance Authority within (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. Following the NSPS format in 40 CFR 60.7(c), Subpart A, periods of startup, shutdown and malfunction, shall be monitored, recorded and reported as excess emissions when emission levels exceed the standards specified in this permit. Within thirty (30) days following each calendar semi-annual period, the permittee shall submit a report on any periods of excess emissions that occurred during the previous semi-annual period to the Compliance Authority. [Rules 62-4.130, 62-204.800, 62-210.700(6), F.A.C., and 40 CFR 60.7]
40. 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. The Annual Operating Report shall include an estimate of all HAPS emitted, such that the Department can affirm that the facility complies with its synthetic minor status. [Rule 62-210.370(2), F.A.C.]

**APPENDIX GC**  
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

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- G.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.
- G.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 or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.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.
- G.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.
- G.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.
- G.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.
- G.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.
- G.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.

**APPENDIX GC**  
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

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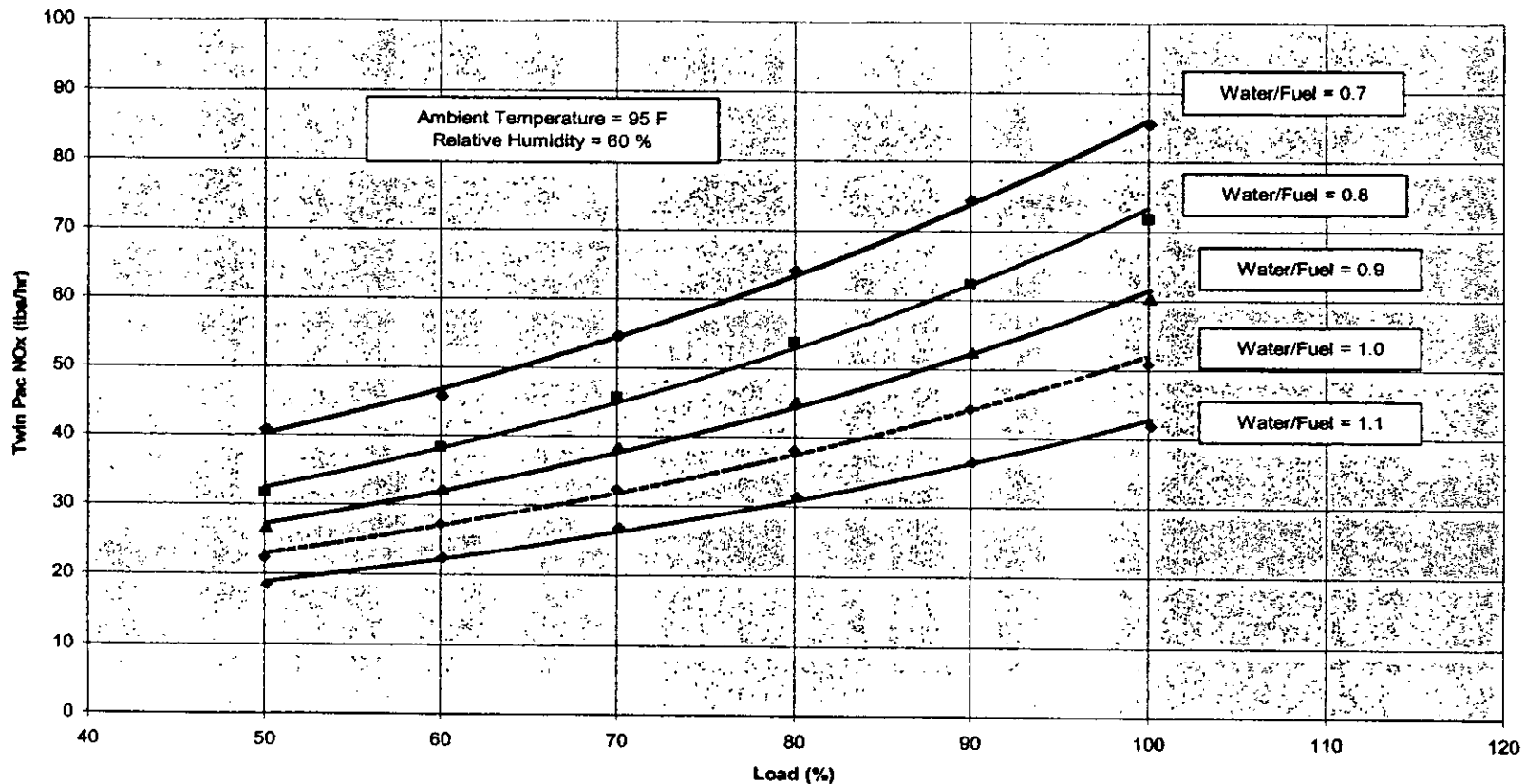
The permittee shall be responsible for any and all damages, which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

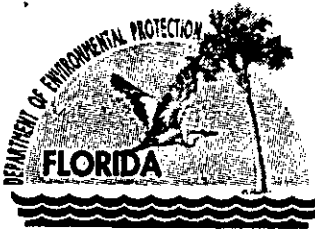
- G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case 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.
- G.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.
- G.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.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.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).
- G.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.
- G.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.

APPENDIX CS  
Compliance Spreadsheet

INPUT 1		INPUT 2				<u>Rolling</u>	<u>Rolling</u>	<u>Rolling</u>	<u>Over - lbs</u>	<u>Allowable Lbs</u>	<u>Allowable 12</u>	<u>Used</u>	<u>Next Mo.</u>
<u>Month</u>	<u>hours of gas</u>	<u>Monthly</u>	<u>Monthly</u>	<u>Monthly</u>	<u>12 mo.</u>	<u>12 mo.</u>	<u>12 mo.</u>	<u>(Under) - lbs</u>	<u>12 mo running</u>	<u>Mo. Gas hrs</u>	<u>Hours</u>	<u>Hours</u>	<u>Avail.</u>
	<u>operation</u>	<u>NOx emitted</u>	<u>lb/hr</u>	<u>lb/hr</u>	<u>Nox - lbs</u>	<u>hrs oper.</u>	<u>lb/hr</u>						<u>Hours</u>
1	0	0	0	0									NA
2	0	0	0	0									NA
3	0	0	0	0									NA
4	0	0	0	0									NA
5	0	0	0	0									NA
6	0	0	0	0									NA
7	0	0	0	0									NA
8	0	0	0	0									NA
9	0	0	0	0									NA
10	0	0	0	0									NA
11	0	0	0	0									NA
12	0	0	0	0	0	0	0.0	-102000					NA
13	0	0	0	0	0	0	0.0	-102000	102000		0	0	0
14	0	0	0	0	0	0	0.0	-102000	102000		0	0	0
15	0	0	0	0	0	0	0.0	-102000	102000		0	0	0
16	0	0	0	0	0	0	0.0	-102000	102000		0	0	0
17	0	0	0	0	0	0	0.0	-102000	102000		0	0	0
18	0	0	0	0	0	0	0.0	-102000	102000		0	0	0
19	0	0	0	0	0	0	0.0	-102000	102000		0	0	0
20	0	0	0	0	0	0	0.0	-102000	102000		0	0	0
21	0	0	0	0	0	0	0.0	-102000	102000		0	0	0
22	0	0	0	0	0	0	0.0	-102000	102000		0	0	0
23	0	0	0	0	0	0	0.0	-102000	102000		0	0	0
24	0	0	0	0	0	0	0.0	-102000	102000		0	0	0
25	0	0	0	0	0	0	0.0	-102000	102000		0	0	0
26	0	0	0	0	0	0	0.0	-102000	102000		0	0	0
27	0	0	0	0	0	0	0.0	-102000	102000		0	0	0
28	0	0	0	0	0	0	0.0	-102000	102000		0	0	0
29	0	0	0	0	0	0	0.0	-102000	102000		0	0	0
30	0	0	0	0	0	0	0.0	-102000	102000		0	0	0

# NOx Versus Load (Hot Day, Average Humidity)





Jeb Bush  
Governor

# Department of Environmental Protection

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

Colleen M. Castille  
Secretary

March 22, 2005

Mr. Michael P. Opalinski, Vice President of Technical Services  
Seminole Electric Cooperative, Inc. -- Payne Creek Generating Station  
16313 North Dale Mabry Highway  
Tampa, FL 33688-2000

Re: Issuance of Intent to Deny Air Permit No. PSD-FL-344  
Project No. 0490340-003-AC  
Payne Creek Generating Station, Peaker Project  
300 MW nominal capacity increase

Dear Mr. Opalinski:

On August 27, 2004, Seminole Electric Cooperative, Inc. ("Seminole Electric") submitted an application for a Prevention of Significant Deterioration ("PSD") permit to add a nominal 300 MW of generating capacity to the existing Payne Creek Generating Station, which is located at 6697 County Road 663, Bowling Green, Hardee County, Florida.

On February 4, 2005, The Department of Environmental Protection issued an Intent to Issue Air Permit and a Draft Permit for the above-referenced project. On March 7, 2005, Seminole Electric filed a Petition for Administrative Hearing pursuant to sections 120.569 and 120.57, Florida Statutes, challenging the issuance of the Department's Draft Permit.

Upon receipt of the Petition for Administrative Hearing, the Department re-evaluated its proposed agency action and made a determination that Seminole Electric's application for a PSD permit should be denied. Accordingly, the Department hereby withdraws the Intent to Issue Air Permit and the Draft Permit and issues the attached Written Notice of Intent to Deny Air Permit.

The "Written Notice of Intent to Deny Air Permit" provides important information regarding the Permitting Authority's Intent to Deny an air permit for the proposed project including the process for filing a petition for an administrative hearing.

If you have any questions, please contact my office at 850/921-9503.

Sincerely,

Trina Vielhauer, Chief  
Bureau of Air Regulation

Enclosures

"More Protection, Less Process"

Printed on recycled paper.

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

Seminole Electric Cooperative, Inc.  
Payne Creek Generating Station  
6697 County Road 663  
Tampa, Florida 33834

*Authorized Representative:*

Mr. Michael P. Opalinski, Vice President of Technical Services

Permit Application No. PSD-FL-344  
Project No. 0490340-003-AC  
Payne Creek Generating Station  
Peaker Project  
Hardee County, Florida

**Facility Location:** Seminole Electric Cooperative, Inc. (SECI) operates an existing power plant located in Bowling Green, Hardee, Florida.

**Project:** The applicant proposes to install five Pratt-Whitney FT8 Twin Pac Combustion Turbine (nominal 60 MW) gas turbine-electrical generator sets and other miscellaneous support equipment. Upon completion of this project, the plant would have a total generating capacity of approximately 800 MW. The existing facility is subject to the power plant site certification requirements of the Department (PA89-25). Details of the project are provided in the permit application.

**Permitting Authority:** Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Florida Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Bureau of Air Regulation's physical address is 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Bureau of Air Regulation's phone number is 850/488-0114.

**Project File:** A complete project file is 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 address indicated above for the Permitting Authority. The complete project file includes the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above. A copy of the project file is available at the Air Resource Section of the Department's Southwest District Office at 3804 Coconut Palm Drive, Tampa, Florida 33619-8218 (Phone: 813/744-6100).

**Notice of Withdrawal of Written Notice of Intent to Issue Air Permit:** On February 4, 2005, the Department issued a Written Notice of Intent to Issue Air Permit and a Draft Permit for the above-referenced project. Seminole Electric has filed a Petition for Administrative Hearing with respect to the Department's proposed agency action. The Department has re-evaluated its proposed agency action and has concluded that Seminole Electric's application for a PSD permit should be denied. Accordingly, the Department hereby withdraws the Written Notice of Intent to Issue Air Permit. The Department's Notice of Withdrawal renders moot the pending Petition for Administrative Hearing. The Department's Written Notice of Intent to Deny Air Permit provides Seminole Electric with a separate point-of-entry in the event it should elect to administratively challenge the Department's permitting decision.

**Written Notice of Intent to Deny Air Permit:** The Permitting Authority hereby gives Written Notice of its Intent to Deny a PSD permit to the applicant for the project described above. The applicant has failed to provide reasonable assurance that the operation of the proposed FT8 Twin Pac Combustion Turbines and related equipment will comply with all applicable provisions of Chapters 62-4, 62-210, and 62-212, F.A.C. Specifically, the applicant has failed to provide reasonable assurance to demonstrate that a NOx emission rate of 25 parts per million (ppm) using water injection represents Best Available Control Technology for simple cycle combustion turbines. Therefore, the applicant has failed to provide reasonable assurance that the proposed project will meet the requirements of Rule 62-212.400, F.A.C., which requires the application of Best Available Control Technology.

**Petitions:** A person whose substantial interests are affected by the proposed permitting decision 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 to Deny Air Permit. 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 of Intent to Deny Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above. **Mediation:** Mediation is not available in this proceeding.

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 "Written Notice of Intent to Deny Air Permit" was sent by certified mail (\*), facsimile (\*\*), and copies were mailed by U.S. Mail before the close of business on 3/22/05 to the persons listed below.

- Michael P. Opalinski, SECI \*, \*\*
- Mike Roddy, SECI
- Tom Davis, ECT
- Jim Little, EPA Region 4
- Buck Oven, DEP-Siting
- Jerry Kissel, DEP-SWD
- Gregg Worley, EPA Region 4
- Robert Manning, Jim Alves, HGS \*\*
- Doug Beason, Pat Comer, OGC \*\*
- John Bunyak, NPS

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.

Victoria Wilson  
(Clerk)

3/22/05  
(Date)


# Memorandum

# Florida Department of Environmental Protection

---

TO: Trina Vielhauer

THRU: J. K. Pennington

FROM: M. P. Halpin 

DATE: February 4, 2005

SUBJECT: Seminole Electric Cooperative, Inc. – Payne Creek Generating Station  
300-Megawatt Peaker Project  
DEP File No. 0490340-003-AC

Seminole Electric Cooperative, Inc. (SECI) has submitted a permit application, requesting permission to add another 300 megawatts of simple cycle peaking power to the existing Payne Creek Generating Station. SECI has requested approval to install 5 combustion turbine-generator sets, each with an approximate 60 MW of capacity. The applicant maintains that the preferred CT sets are Pratt & Whitney Twin Pacs (FT-8), capable of achieving 25 ppmvd / 42 ppmvd @ 15% O<sub>2</sub> based upon gas/oil firing. SECI additionally has requested permission for 500 hours per year of 0.05% sulfur oil firing, out of 2500 hours per year of requested operation.

The attached draft documents reflect a proposed NO<sub>x</sub> limit of 15 ppmvd while firing natural gas (rather than 25 ppmvd) which is consistent with EPA guidance and recent (5 years) Department permitting actions for simple cycle combustion turbines firing natural gas, where SCR was not applied. My review suggests that the break even point at which SCR becomes cost effective is around 3000 hours of annual operation, and thus an SCR was not required here. This determination is consistent with the recent Tallahassee Hopkins simple cycle CT addition, where SCR was cost effective at 5840 annual operating hours.

Attached is the public notice package for the subject project. I recommend your approval.

JKP/mph

Attachments



Jeb Bush  
Governor

# Department of Environmental Protection

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

Colleen M. Castille  
Secretary

February 4, 2005

Mr. Michael P. Opalinski, Vice President of Technical Services  
Seminole Electric Cooperative, Inc. – Payne Creek Generating Station  
16313 North Dale Mabry Highway  
Tampa, FL 33688-2000

Re: Draft Air Permit No. PSD-FL-344  
Project No. 0490340-003-AC  
Payne Creek Generating Station, Peaker Project  
300 MW nominal capacity increase

Dear Mr. Opalinski:

On August 27, 2004, Seminole Electric Cooperative, Inc. submitted an application to add a nominal 300 MW of generating capacity to the existing Payne Creek Generating Station, which is located at 6697 County Road 663, Bowling Green, Hardee County, Florida. Enclosed are the following documents: "Technical Evaluation and Preliminary BACT Determination", "Draft Permit", "Written Notice of Intent to Issue Air Permit", and "Public Notice of Intent to Issue Air Permit".

The "Technical Evaluation and Preliminary BACT Determination" summarizes the Bureau of Air Regulation's technical review of the application and provides the rationale for making the preliminary determination to issue a draft permit, as well as the Department's proposed BACT Determination. The proposed "Draft Permit" includes the specific conditions that regulate the emissions units covered by the proposed project. The "Written Notice of Intent to Issue Air Permit" provides important information regarding: the Permitting Authority's intent to issue an air permit for the proposed project; the requirements for publishing a Public Notice of the Permitting Authority's intent to issue an air permit; the procedures for submitting comments on the Draft Permit; the process for filing a petition for an administrative hearing; and the availability of mediation. The "Public Notice of Intent to Issue Air Permit" 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

TV/jp/mh

"More Protection, Less Process"

Printed on recycled paper.

## WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

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

Seminole Electric Cooperative, Inc.  
Payne Creek Generating Station  
6697 County Road 663  
Tampa, Florida 33834

*Authorized Representative:*

Mr. Michael P. Opalinski, Vice President of Technical Services

Draft Air Permit No. PSD-FL-344  
Project No. 0490340-003-AC  
Payne Creek Generating Station  
Peaker Project  
Hardee County, Florida

**Facility Location:** Seminole Electric Cooperative, Inc. (SECI) operates an existing power plant located in Bowling Green, Hardee, Florida.

**Project:** The applicant proposes to install five nominal 60 MW gas turbine-electrical generator sets and other miscellaneous support equipment. Upon completion of this project, the plant will have a total generating capacity of approximately 800 MW. The existing facility is subject to the power plant site certification requirements of the Department (PA89-25). Details of the project are provided in the application and the enclosed "Technical Evaluation and Preliminary BACT Determination".

**Permitting Authority:** Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Florida Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Bureau of Air Regulation's physical address is 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Bureau of Air Regulation's phone number is 850/488-0114.

**Project File:** A complete project file is 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 address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary BACT Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above. A copy of the project file is available at the Air Resource Section of the Department's Southwest District Office at 3804 Coconut Palm Drive, Tampa, Florida 33619-8218 (Phone: 813/744-6100).

**Notice of Intent to Issue Permit:** The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all applicable provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice 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 Air 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 the address or phone number listed above. Pursuant to Rule 62-110.106(5), F.A.C., the applicant shall provide proof of publication to the 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:** 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 email 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

## WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

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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 decision 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 to Issue Air Permit. 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 of Intent to Issue Air Permit, 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 of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above. This PSD permitting action is being coordinated with a certification under the Power Plant Siting Act (Sections 403.501-519, F.S.). If a petition for an administrative hearing on the Department's Intent to Issue Air Permit is filed by a substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3), F.S.

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

Executed in Tallahassee, Florida.



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Trina Vielhauer, Chief  
Bureau of Air Regulation

## P.E. Certification Statement

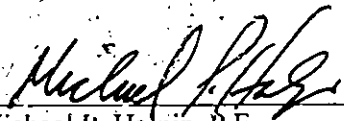
Seminole Electric Cooperative, Inc.  
Payne Creek Generating Station – Peaker Project  
Hardee County

DEP File No.: PSD-FL-344, PA 89-25  
Facility ID No.: 0490340

**Project:** PSD Permit – Addition of 300 MW peaking power

**I HEREBY CERTIFY** that the engineering features described in the above referenced application and related additional information submittals, if any, 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, and geological features).

(Seal)

  
\_\_\_\_\_  
Michael P. Halpin, P.E.  
Registration Number: 31970

2-3-05  
Date

Permitting Authority:  
Florida Department of Environmental Protection  
Division of Air Resources Management  
Bureau of Air Regulation  
New Source Review Section  
Mail Station #5505  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Telephone: 850/488-0114  
Fax: 850/922-6979

**WRITTEN NOTICE OF INTENT TO ISSUE AIR 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 Public Notice, the Technical Evaluation and Preliminary BACT Determination, and the Draft Permit) was sent by certified mail (\*) and copies were mailed by U.S. Mail before the close of business on 2/4/05 to the persons listed below.

- Michael P. Opalinski, SECI \*
- Mike Roddy, SECI
- Tom Davis, ECT
- Jim Little, EPA Region 4
- Buck Oven, DEP-Siting
- Jerry Kissel, DEP-SWD
- Gregg Worley, EPA Region 4
- John Bunyak, NPS

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.

Mary Stanny                      2/4/05  
(Clerk)    (Date)



## PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection  
Project No. 0490340-003-AC / Draft Air Permit No. PSD-FL-344  
Seminole Electric Cooperative, Inc. – Payne Creek Generating Station  
Hardee County, Florida

**Applicant:** The applicant for this project is Seminole Electric Cooperative, Inc. (SECI). The applicant's authorized representative is Mr. Michael P. Opalinski, Vice President of Technical Services. The applicant's mailing address is 16313 North Dale Mabry Highway, Tampa, Florida 33688.

**Facility Location:** SECI operates the existing Payne Creek Generating Station located in the Hardee County, Florida.

**Project:** The existing Payne Creek Generating Station consists of two nominal 157.5 megawatts (MW) combined-cycle Siemens Westinghouse 501FD combustion turbines. The combined-cycle turbines each include one unfired heat recovery steam generator (HRSG). The combustion turbines only operate in combined-cycle mode (i.e., the HRSGs are not equipped with bypass stacks). Steam generated by the two HRSGs is sent to one common nominal 173 MW steam turbine. The facility utilizes pipeline natural gas as its primary fuel source with distillate fuel oil serving as a backup fuel. After completion of this project, the plant will have a nominal generating capacity of approximately 800 MW.

The existing power plant is located in Hardee County, an area that is currently in attainment with the state and federal Ambient Air Quality Standards (AAQS) or otherwise designated as unclassifiable. The power plant is a major facility in accordance with Rule 62-212.400, F.A.C., the regulatory program for the Prevention of Significant Deterioration (PSD) of Air Quality. Therefore, new projects at the existing facility must be reviewed for PSD applicability.

In August of 2004, the Department received a PSD permit application for the existing facility that would increase the generating output of the facility from 500 to 800 megawatts of output. Based on potential emissions increases, the project is subject to PSD preconstruction review for nitrogen oxides, particulate matter, sulfur dioxide, and volatile organic compounds. The Department has made a preliminary determination of the Best Available Control Technology (BACT) for each of these pollutants. Based on the supporting air quality analysis of the potential impacts from increased operation, the applicant provided the Department with reasonable assurance that the project would not significantly contribute to or cause a violation of any state or federal ambient air quality standards and would not significantly contribute to or cause a violation of any PSD Class I or Class II increments. The facility is subject to the power plant site certification requirements of the Department.

**Permitting Authority:** Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Florida Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Bureau of Air Regulation's physical address is 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Bureau of Air Regulation's phone number is 850/488-0114 and fax number is 850/921-9533.

**Project File:** A complete project file is 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 address indicated above for the Permitting Authority. 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. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above. A copy of the project file is available at the Air Resource Section of the Department's Southwest District Office at 3804 Coconut Palm Drive, Tampa, Florida 33619-8218 (Phone: 813/744-6100).

**Notice of Intent to Issue Air Permit:** The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

**Comments:** 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

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

## PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

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 decision 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 to Issue Air Permit. 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 of Intent to Issue Air Permit, 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 Public Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above. This PSD permitting action is being coordinated with a certification under the Power Plant Siting Act (Sections 403.501-519, F.S.). If a petition for an administrative hearing on the Department's Intent to Issue Air Permit is filed by a substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3), F.S.

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

(Public Notice to be Published in the Newspaper)

**APPENDIX GC**  
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

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- G.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.
- G.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 or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.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.
- G.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.
- G.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.
- G.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.
- G.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.
- G.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.

**APPENDIX GC**  
**GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]**

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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.

- G.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.
- G.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.
- G.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.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.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).
- G.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.
- G.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.

**DRAFT**

**PERMITTEE:**

Seminole Electric Cooperative, Inc.  
Payne Creek Generating Station  
6697 County Road 663  
Bowling Green, FL 33834

ARMS Permit No.	0490340-003-AC
PSD Permit No.	PSD-FL-344
Facility ID No.	0490340
SIC No.	4911
Expires:	December 31, 2007 [PA 89-25]

*Authorized Representative:*

Mr. Michael P. Opalinski  
Vice President of Technical Services

**PROJECT AND LOCATION**

This permit is issued pursuant to the requirements for the Prevention of Significant Deterioration of Air Quality (PSD Permit). The proposed project authorizes the installation of five combustion turbine sets, complete with electrical generator sets. The gas turbines are capable of producing a nominal 300 MW of electricity.

The project will be located at the existing Payne Creek Generating Station, located in Hardee County. UTM coordinates for this facility are Zone 17; 405.049 km E; 3057.712 km N.

**STATEMENT OF BASIS**

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.) and 40 CFR 52.21. 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.

**APPENDICES**

The following Appendices are attached as part of this permit.

- Appendix BD - Technical Evaluation and BACT Determination
- Appendix GC - Construction Permit General Conditions

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Michael G. Cooke, Director  
Division of Air Resource Management

Date:

## SECTION I. FACILITY INFORMATION

### FACILITY DESCRIPTION

Completion of this project will result in the installation of five new electric power generator sets, capable of providing a nominal 300 MW of electrical power.

### NEW EMISSIONS UNITS

The proposed project will result in the following new emissions units.

Emissions Unit No.	Emissions Unit Description
005 - 009	Pratt & Whitney Twin Pac Combustion Turbines each representing approximately 60 megawatts of peaking power.

### REGULATORY CLASSIFICATION

HAPs: This facility is a synthetic minor source of hazardous air pollutants (Title III) and the permittee maintains that the synthetic minor status is unaffected by this project.

Acid Rain: This facility is subject to the acid rain provisions of the Clean Air Act (Title IV).

Title V Major Source: This facility is a Title V major source of air pollution.

PSD Major Source: Each pollutant with potential emissions greater than the Significant Emissions Rates specified in Table 62-212.400-2, F.A.C. requires a PSD review and Best Available Control Technology (BACT) determination. For this project, emissions of NO<sub>x</sub>, CO, VOC, PM<sub>10</sub> and SO<sub>2</sub> are significant and subject to the BACT standards specified in this permit. The emission of CO has been reduced below the PSD significance level (100 TPY) via the application of an oxidation catalyst.

NSPS Sources: The combustion turbines specified in this permit are also subject to regulation under the New Source Performance Standards for Stationary Gas Turbines, 40 CFR 60, Subpart GG.

### RELEVANT DOCUMENTS

- Permit application received on 08/27/04
- Intent to Issue Permit package mailed on 02/04/05
- Public Notice published in xxxxxx on xx/xx/xx
- Proof of publication received xx/xx/xx

## SECTION II. ADMINISTRATIVE REQUIREMENTS

### GENERAL AND ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to construct, operate or modify an emissions unit should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (DEP), at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400 and phone number 850/488-0114.
2. Compliance Authority: All documents related compliance activities such as reports, tests, and notifications should be submitted to the Air Resources Section of the Southwest District Office, Florida Department of Environmental Protection, 3804 Coconut Palm Drive, Tampa, Florida 323619-8218. The phone number is 813/744-6100 and the fax number is 813/744-6084.
3. Terminology: The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code.
4. General Conditions: The owner and operator are subject to, and 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.]
5. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.); and the Title 40, Parts 60, 72, 73, and 75 of the Code of Federal Regulations (CFR), adopted by reference in Rule 62-204.800, F.A.C. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the facility 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.]
6. PSD Expiration: Approval to construct shall become invalid if construction is not commenced within 18 months after receipt of such approval, or if construction is discontinued for a period of 18 months or more or if 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.
7. Permit Expiration: For good cause, the permittee may request that this PSD air construction 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, and 62-210.300(1), F.A.C.]
8. BACT Determination: In conjunction with extension of the 18 month period to commence or continue construction, phasing of the project, or an extension of the permit expiration date, the permittee may be required to demonstrate the adequacy of any previous determination of Best Available Control Technology (BACT) for the source. [Rule 62-212.400(6)(b), F.A.C.]
9. 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.]
10. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
11. 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 Region 4 Office of the U.S. Environmental Protection Agency in Atlanta, Georgia and a copy to the Department's Bureau of Air Regulation in Tallahassee. [40 CFR 72]
12. Title V Permit: This permit authorizes construction of the permitted emissions unit and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emission units. The permittee shall apply for and obtain a Title V operation permit in accordance with Rule 62-213.420, F.A.C. To apply for a Title V operation permit, the applicant shall submit the appropriate application form,

## SECTION II. ADMINISTRATIVE REQUIREMENTS

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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 and 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

This section of the permit addresses the following new emissions units.

E.U. ID No.	COMMON EMISSION UNIT DESCRIPTION
005 - 009	Pratt & Whitney Twin Pac Combustion Turbines each representing approximately 60 megawatts of peaking power.

#### APPLICABLE STANDARDS AND REGULATIONS

1. **BACT Determinations:** The emission units addressed in this section are subject to a Best Available Control Technology (BACT) determination for nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter (PM<sub>10</sub>), carbon monoxide (CO), Volatile Organic Compounds (VOC) and particulate matter (PM<sub>10</sub>). [Rule 62-212.400, F.A.C.]
2. **NSPS Requirements:** The combustion turbines shall comply with all applicable requirements of 40 CFR 60, adopted by reference in Rule 62-204.800(7)(b), F.A.C.
  - (a) **Subpart A, General Provisions,** including:
    - 40 CFR 60.7, Notification and Record Keeping
    - 40 CFR 60.8, Performance Tests
    - 40 CFR 60.11, Compliance with Standards and Maintenance Requirements
    - 40 CFR 60.12, Circumvention
    - 40 CFR 60.13, Monitoring Requirements
    - 40 CFR 60.19, General Notification and Reporting Requirements
  - (b) **Subpart GG, Standards of Performance for Stationary Gas Turbines:** These provisions include a requirement to correct test data to ISO conditions; however, such correction is not used for compliance determinations with the BACT standards.

#### PERFORMANCE RESTRICTIONS

3. **Combustion Turbines:** The permittee is authorized to install, tune, operate and maintain five new combustion turbine sets with electrical generators (Pratt & Whitney Twin Pac or equivalent). Each unit is designed to produce approximately 60 MW of electrical power. [Applicant Request]
4. **Permitted Capacity:** The heat input to each combustion turbine set from firing natural gas shall not exceed 635.6 MMBtu per hour based on the following: 100% base load, a higher heating value (HHV) for natural gas and a compressor inlet air temperature of 50° F. The heat input to each combustion turbine from firing No. 2 fuel oil shall not exceed 576.8 MMBtu per hour based on the following: 100% base load, HHV and a compressor inlet air temperature of 78° F. 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. Heat input rates will vary depending upon compressor conditions and the combustion turbine characteristics. Operating data may be adjusted for the appropriate site conditions in accordance with the performance curves on file with the Department. [Design, Rule 62-210.200, F.A.C. (Definition - PTE)]
5. **Simple Cycle, Intermittent Operation:** Each combustion turbine shall operate only in simple cycle mode not to exceed the permitted hours of operation allowed by this permit. This restriction is based on the permittee's request, which formed the basis of the PSD applicability and BACT determination and resulted in the emission standards specified in this permit. For any request to convert this unit to combined cycle operation by installing/connecting to heat recovery steam generators or increasing the allowable hours of operation, including changes to the fuel quality or quantity which may cause an increase in short or long-term emissions, the permittee may be required to submit a full PSD permit application complete with a new proposal of the best available control technology as if the unit had never been built. [Rules 62-212.400(2)(g) and 62-212.400(6)(b), F.A.C.]
6. **Allowable Fuels:** Each combustion turbine shall only be fired with natural gas containing no more than 1 grain of sulfur per 100 dry standard cubic feet of gas (monthly average) and 0.05% sulfur distillate oil (or superior). The permittee shall demonstrate compliance with the fuel sulfur limit by keeping the records specified in this permit. [Applicant Request, Rule 62-210.200, F.A.C. (Definition - PTE)]

### SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

7. Hours of Operation: Each combustion turbine shall operate no more than 2500 hours during any consecutive 12-month period, 500 of which may be on distillate fuel oil. The permittee shall install, calibrate, operate and maintain a monitoring system to measure and accumulate the hours of operation. In the event that any increase to the hours of operation (of any fuel type) is sought prior to December 31, 2010 an SCR shall be installed (consistent with the conditions of this permit) prior to the increase being granted. After December 31, 2010 the permittee shall be required to submit a full PSD permit application complete with a new proposal of the best available control technology as if the unit had never been built. [Rule 62-212.400, F.A.C. (BACT); Rule 62-212.400(2)(g), F.A.C.; Rule 62-210.200, F.A.C. (PTE)]
8. Operating Procedures: The Best Available Control Technology (BACT) determinations established by this permit rely on "good operating practices" to minimize emissions. Therefore, all operators and supervisors shall be properly trained to operate and maintain the combustion turbines and pollution control systems in accordance with the guidelines and procedures established by the manufacturer. The training shall include good operating practices as well as methods of minimizing excess emissions. [Applicant Request; Rule 62-4.070(3); Rule 62-212.400, F.A.C. (BACT)]
9. 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 the 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.]

#### EMISSIONS CONTROLS

10. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering, confining, or applying water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]
11. Water Injection/Dry Low NO<sub>x</sub> Burner Technology: The permittee shall install, calibrate, tune, operate, and maintain a dry low NO<sub>x</sub> burner and/or water injection system for each combustion turbine. The system shall be designed and operated so as to ensure that NO<sub>x</sub> emissions are sufficient to achieve the NO<sub>x</sub> emission limits in Condition III. 17 [Rule 62-212.400, F.A.C. (BACT)]
12. Oxidation Catalyst: To control CO and VOC emissions, each combustion turbine shall include an oxidation catalyst. The catalyst systems shall be designed in order to achieve 7.0 ppm CO, regardless of the fuel being combusted. [Design and Rule 62-212.400, F.A.C.]
13. SCR: Adequate space shall be provided, to install a Selective Catalytic Reduction system (SCR) for each combustion turbine. Should an SCR be installed to control NO<sub>x</sub> emissions, each combustion turbine limit will be 5.0 ppm (gas) and 8.0 ppm (oil). In the event an SCR is not installed, the NO<sub>x</sub> limits shall be 15.0 ppm (gas) and 42 ppm (oil). The installation of SCR prior to December 31, 2010 shall void the natural gas operating hours limitation in Condition III. 7, and allow for 8760 hours of operation per year, 2400 hours of which may be while firing oil. The ammonia slip rate shall be limited to 5 ppmvd @ 15% O<sub>2</sub>. All NO<sub>x</sub> limits are in units of ppmvd corrected to 15% oxygen. [Rule 62-212.400, F.A.C. (BACT); Rule 62-210.200, F.A.C. (PTE)]
14. 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.]

#### EMISSIONS STANDARDS

15. Summary: The following table summarizes the emissions standards for each pollutant and total emissions in lb/hr and TPY (PTE) for informational and convenience purposes only. This table does not supersede any of the terms or conditions of this permit:

**SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS**

Pollutant	Emission Standard	CT Emissions (lb/hr)		Emission Unit (lb/year)	TPY for 5 EU's
		OIL	GAS		
NO <sub>x</sub>	15 (gas) 42 (oil) ppmvd @ 15% O <sub>2</sub>	51.2	19.2	128,000	320
CO	7 ppmvd @ 15% O <sub>2</sub>	7.0	7.0	35,000	87.5
SO <sub>2</sub>	NG & 0.05% S oil	14.7	0.9	18,300	45.75
PM <sub>10</sub>	VE	7	3	19,000	47.5
VOC	CO as surrogate	4.6	8.3	37,800	94.5

Notes: (1) Assumed 2000 hours of oil operation and 500 hours of natural gas operation at highest emission rate.  
 (2) Calculated based upon applicant proposed oxidation catalyst at 85% removal efficiency and proposed limit.

**16. Carbon Monoxide (CO):**

CO emissions from each combustion turbine shall not exceed 7.0 ppmvd corrected to 15% oxygen for each fuel. The permittee shall demonstrate compliance with this standard by conducting performance tests and emissions monitoring in accordance with EPA Method 10 and the requirements of this permit. [Rule 62-212.400(2)(g), F.A.C. (PSD Avoidance)]

**17. Nitrogen Oxides (NO<sub>x</sub>):**

NO<sub>x</sub> emissions from each combustion turbine shall not exceed 15.0/42.0 ppmvd corrected to 15% oxygen for gas/oil nor 5.0/8.0 ppmvd corrected to 15% oxygen for gas/oil in the event that an SCR is installed. Compliance with the BACT standard specified herein shall satisfy the NSPS requirements. The permittee shall demonstrate compliance with this standard by conducting performance tests and emissions monitoring in accordance with 40 CFR Part 60 Subpart GG and based on a 24-hour block average for data collected from the continuous emissions monitor. [Rule 62-212.400, F.A.C. (BACT)]

**18. Particulate Matter (PM/PM<sub>10</sub>) Sulfur Dioxides (SO<sub>2</sub>) and Volatile Organic Compounds (VOC):**

- (a) Fuel Specifications. Emissions of PM, PM<sub>10</sub>, and SO<sub>2</sub> shall be limited by the use of pipeline-quality natural gas containing no more than 1 grain per standard cubic feet, the use of 0.05% Sulfur oil and good combustion techniques as specified in this permit. The permittee shall demonstrate compliance with the fuel sulfur limit by maintaining the records specified by this permit. [Rule 62-212.400, F.A.C. (PSD Applicability)].
- (b) VE Standard. Visible emissions from each combustion turbine shall not exceed 10% opacity, based on a 6-minute average. The permittee shall demonstrate compliance with this standard by conducting tests in accordance with EPA Method 9 and the performance testing requirements of this permit. [Rule 62-212.400, F.A.C. (PSD Applicability)]
- (c) Compliance with the CO standard specified within this permit shall act as a surrogate for the VOC requirements.

**EXCESS EMISSIONS**

- 19. **Excess Emissions Prohibited:** Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction, shall be prohibited. These emissions shall be included in the calculation of the 24-hour averages to demonstrate compliance with the continuous NO<sub>x</sub> emissions standard. [Rule 62-210.700(4), F.A.C.]
- 20. **Excess Emissions Allowed:** Providing the permittee adheres to best operational practices to minimize the amount and duration of excess emissions, the following conditions shall apply:
  - (a) During startup and shutdown, visible emissions excluding water vapor shall not exceed 20% opacity for more than 2 hours in any 24-hour period. [Design; Rule 62-210.700(1) and (5), F.A.C.]
  - (b) During all startups, shutdowns, and malfunctions, the continuous emissions monitor (CEM) shall monitor and record emissions. However, up to 2 hours of monitoring data during any 24-hour period may be excluded from continuous compliance demonstrations as a result of startups, shutdowns, and documented malfunctions. A documented malfunction means a malfunction that is documented within one working day of detection by contacting the Compliance Authority by telephone, facsimile, or electronic mail. In case of malfunctions, the permittee shall notify the Compliance Authorities within one working day. A full written report on the

### SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

malfunctions shall be submitted in a quarterly report, if requested by the Department. [Design; Rules 62-210.700(1), (5), and 62-4.130, F.A.C.]

#### EMISSIONS PERFORMANCE TESTING

21. **Sampling Facilities:** The permittee shall design the combustion turbine stack to accommodate adequate testing and sampling locations in order to determine compliance with the applicable emission limits specified by this permit. Permanent stack sampling facilities shall be installed in accordance with Rule 62-297.310(6), F.A.C. [Rules 62-4.070 and 62-204.800, F.A.C., and 40 CFR 60.40a(b)]
22. **Performance Test Methods:** Compliance tests shall be performed in accordance with the following reference methods as described in 40 CFR 60, Appendix A, and adopted by reference in Chapter 62-204.800, F.A.C.
  - (a) EPA Method 9 - Visual Determination of the Opacity of Emissions from Stationary Sources;
  - (b) EPA Method 10 - Determination of Carbon Monoxide Emissions from Stationary Sources;
  - (c) EPA Method 7E - Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure); or EPA Method 20 - Determination of Oxides of Nitrogen Oxide, Sulfur Dioxide and Diluent Emissions from Stationary Gas Turbines; or ASTM D6522-00 Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers and Process Heaters Using Portable Analyzers, as specified in 40 CFR 60.335;
  - (d) EPA Method 25 or 25A - Determination of Volatile Organic Concentrations. (EPA Method 18 may be conducted to account for the non-regulated methane portion of the VOC emissions); and
  - (e) Conditional Test Method 027 – Measurement of Ammonia Slip; this shall be required in the event that SCR is installed.

No other test methods may be used for compliance testing unless prior DEP approval is received, in writing, from the DEP Emissions Monitoring Section Administrator in accordance with an alternate sampling procedure specified in Rule 62-297.620, F.A.C.

23. **Test Notification:** The permittee shall notify the Compliance Authority in writing at least 30 days prior to initial NSPS performance tests and at least 15 days prior to any other required tests. [40 CFR 60.7, 40 CFR 60.8 and Rule 62-297.310(7)(a)9., F.A.C.]
24. **Initial Tests Required:** Initial performance tests to demonstrate compliance with the emission standards specified in this permit shall be conducted within 60 days after achieving at least 90% of maximum production rate, but not later than 180 days after initial operation of the emissions unit. Initial performance tests shall be conducted for CO, NO<sub>x</sub>, VOC, ammonia slip and visible emissions while combusting each fuel. Initial NO<sub>x</sub> performance tests shall be conducted in accordance with the requirements of NSPS Subpart GG and shall also be converted into units of the NSPS emissions standard. [Rule 62-297.310(7)(a)1., F.A.C.]
25. **Annual Performance Tests:** To demonstrate compliance with the emission standards specified in this permit, the permittee shall conduct annual performance tests for NO<sub>x</sub>, CO, and visible emissions from each combustion turbine for each fuel. VOC emission tests are not required annually provided the CO emission standards are being met. Testing for ammonia slip is required during the first scheduled annual performance tests after the cumulative hours of operation on each combustion turbine exceed 1,500 hours of oil firing or 5,000 hours of gas firing starting from the initial installation of the SCR catalysts. Thereafter, ammonia testing is required during the first scheduled annual performance tests after subsequent cumulative 1,500 hours of oil firing and 5,000 hours of gas firing in each combustion turbine or after regeneration, replacement or addition to the SCR catalyst system. If conducted at permitted capacity, NO<sub>x</sub> emissions data collected during the annual NO<sub>x</sub> continuous monitor RATA required pursuant to 40 CFR 75 may be substituted for the required annual performance test. Tests required on an annual basis shall be conducted at least once during each federal fiscal year (October 1<sup>st</sup> to September 30<sup>th</sup>). In the event that the operation of the CT is less than 400 hours per year on natural gas or distillate oil, annual testing is not required for that year and that fuel. [Rule 62-297.310(7)(a), F.A.C.]

### SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

26. Tests Prior to Permit Renewal: Prior to renewing the air operation permit, the permittee shall conduct performance tests for CO, NO<sub>x</sub>, VOC and visible emissions from each combustion turbine. Testing for ammonia slip meeting the requirements of Condition 25 (above) 'Annual Performance Tests' will satisfy the requirements of this condition. These tests shall be conducted within the 12-month period prior to renewing the air operation permit. For pollutants required to be tested annually, the permittee may submit the most recent annual compliance test to satisfy the requirements of this provision. [Rule 62-297.310(7)(a)3., F.A.C.]
27. Tests After Major Repairs or Replacements: The Department may require that additional compliance testing be conducted within 90 days after major repairs or replacements are performed. [Rule 62-297.310(7)(a)4., F.A.C.]
28. Combustion Turbine Testing Capacity: Initial performance tests shall be conducted in accordance with 40 CFR 60.8 and 40 CFR 60.335 for pollutants subject to a New Source Performance Standard (NSPS) in Subpart GG for stationary gas turbines. Other required performance tests for compliance with standards specified in this permit shall be conducted with each combustion turbine operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum heat input rate allowed by the permit, corrected for the average ambient air temperature during the test (with 100 percent represented by a curve depicting heat input vs. ambient temperature). If it is impracticable to test at permitted capacity, the source may be tested at less than permitted capacity. However, subsequent operation is limited by adjusting the entire heat input vs. ambient temperature curve downward by an increment equal to the difference between the maximum permitted heat input (corrected for inlet temperature) and 110 percent of the value reached during the test 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 purposes of additional compliance testing to regain the permitted capacity. Emissions performance tests shall meet all applicable requirements of Chapters 62-204 and 62-297, F.A.C. [Rule 62-297.310(2), F.A.C.]
29. 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.]
30. Applicable Test Procedures:
  - (a) Required Sampling Time.
    1. 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. [Rule 62-297.310(4)(a)1., F.A.C.]
    2. The minimum observation period for a visible emissions compliance test shall be sixty (60) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. [Rule 62-297.310(4)(a)2., F.A.C.]
  - (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. [Rule 62-297.310(4)(b), F.A.C.]
  - (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)(d), F.A.C.]
31. 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. [Rule 62-297.310(5)(a), F.A.C.]
  - (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)(b), F.A.C.]
32. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner

### SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

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.]

#### CONTINUOUS MONITORING REQUIREMENTS

33. NO<sub>x</sub> CEMS: - The permittee shall install, calibrate, operate, and maintain a CEMS to measure and record NO<sub>x</sub> and oxygen concentrations in the combustion turbine exhaust stack. A monitor for carbon dioxide may be used in place of the oxygen monitor, but the system shall be capable of correcting the emissions to 15% oxygen. The NO<sub>x</sub> monitoring devices shall comply with the requirements of 40 CFR 60.334(b) for 40 CFR Part 75 monitoring systems. A monitoring plan shall be provided to the Department's Emissions Monitoring Section Administrator, EPA Region 4, and the Compliance Authority for review no later than 45 days prior to the first scheduled certification test pursuant to 40 CFR 75.62. The plan shall consist of data on CEM equipment specifications, manufacturer, type, calibration and maintenance needs, and its proposed location. [Rule 62-212.400, F.A.C. (BACT) and 40 CFR 75]
34. NO<sub>x</sub> CEMS Data Requirements:
- (a) Installation. The CEMS shall be installed, calibrated, and properly functioning prior to the initial performance tests. Each device shall comply with the applicable monitoring system requirements of 40 CFR 60.7(a)(5), 40 CFR 60.13, and 40 CFR 60.334(b).
  - (b) Data Collection. Emissions shall be monitored and recorded at all times including startup, operation, shutdown, and malfunction except for continuous monitoring system breakdowns, repairs, calibration checks, zero adjustments and span adjustments. Each valid 1-hour average shall be calculated using at least two valid data points at least 15 minutes apart.
  - (c) Data Reporting: Data collected by the CEMS shall be used to demonstrate compliance with the emissions standards specified for each 24-hour block average. Emissions shall be reported in units of ppmvd corrected to 15% oxygen for each hour of operation. The compliance averages shall be determined by calculating the arithmetic average of a 24-hour block of valid hourly emission rates. When a monitoring system reports emissions in excess of the standards allowed by this permit, the permittee shall notify the Compliance Authority within one (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. The Department may request a written report summarizing the excess emissions incident. The permittee shall also report excess emissions in a quarterly report as required in specific condition 42 of this permit.
  - (d) Data Exclusion. Unless prohibited by 62-210.700 F.A.C., valid hourly emission rates shall not include periods of start up, shutdown, or documented malfunction as described under the excess emissions requirements of this permit.
- [Rules 62-4.130, 62-4.160(8), 62-204.800, 62-210.700, 62-297.520, F.A.C and 40 CFR 60.7].

#### COMPLIANCE DEMONSTRATIONS

35. 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.]
36. Fuel Records: The permittee shall demonstrate compliance with the fuel sulfur limits for natural gas and fuel oil specified in this permit by maintaining records required by 40 CFR 60.334 and 60.335. [Rules 62-4.070(3) and 62-4.160(15), F.A.C.]
37. Monthly Operations Summary: By the fifth calendar day of each month, the permittee shall record the hours of operation and amount of each fuel fired for each combustion turbine. An hour of operation is defined to include a totalization of every minute within a specified period (e.g. month), during which a permitted fuel is fired (regardless of the amount) divided by 60. The information shall be recorded in a written or electronic log and shall summarize the previous month of operation and the previous 12 months of operation. Information recorded and stored as an electronic

### SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

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file shall be available for inspection and/or printing within at least one day of a request from the Compliance Authority. [Rule 62-4.160(15), F.A.C.]

#### REPORTS

38. Emissions Performance Test Reports: A report indicating the results of any required emissions performance test shall be submitted to the Compliance Authority no later than 45 days after completion of the last test run. The test report shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in Rule 62-297.310(8)(c), F.A.C. [Rule 62-297.310(8), F.A.C.].
39. Excess Emissions Reporting and Semi-annual Reports: If excess NO<sub>x</sub> or visible emissions occur due to malfunction, the permittee shall notify the Compliance Authority within (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. Following the NSPS format in 40 CFR 60.7(c), Subpart A, periods of startup, shutdown and malfunction, shall be monitored, recorded and reported as excess emissions when emission levels exceed the standards specified in this permit. Within thirty (30) days following each calendar semi-annual period, the permittee shall submit a report on any periods of excess emissions that occurred during the previous semi-annual period to the Compliance Authority. [Rules 62-4.130, 62-204.800, 62-210.700(6), F.A.C., and 40 CFR 60.7]
40. 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. The Annual Operating Report shall include an estimate of all HAPS emitted, such that the Department can affirm that the facility complies with its synthetic minor status. [Rule 62-210.370(2), F.A.C.]

**TECHNICAL EVALUATION AND  
PRELIMINARY BACT DETERMINATION**

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**TECHNICAL EVALUATION  
AND  
PRELIMINARY BACT DETERMINATION**

Seminole Electric Cooperative

Payne Creek Peaker Project

Hardee County

0490340-003-AC



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

February 4, 2005



# TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

## 1. GENERAL INFORMATION

### 1.1 APPLICANT NAME AND ADDRESS

Seminole Electric Cooperative, Inc.  
Payne Creek Peaker Project  
16313 North Dale Mabry Highway  
Tampa, Florida 33688-2000

Authorized Representative: Michael P. Opalinski – Vice President of Technical Services

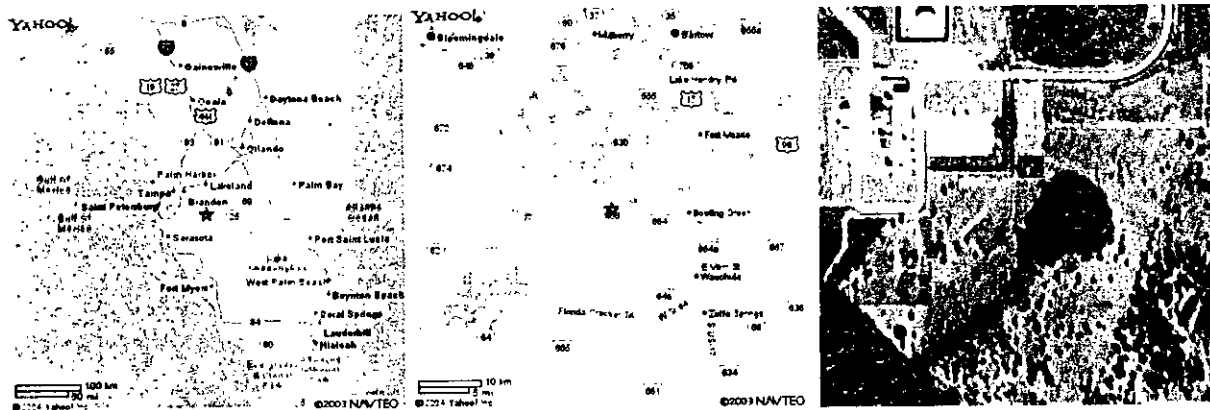
### 1.2 REVIEWING AND PROCESS SCHEDULE

August 27, 2004                      Received permit application  
November 17, 2004                Received response to first RFAI  
January 20, 2005                    Received response to second RFAI

## 2. FACILITY INFORMATION

### 2.1 FACILITY LOCATION

This existing facility is located at 6697 County Road 663, Bowling Green, Hardee County. UTM Coordinates: Zone 17, 405.049 km East and 3057.712 km North; and, Latitude: 27° 38' 30" North and Longitude: 81° 57' 45" West.



### 2.2 STANDARD INDUSTRIAL CLASSIFICATION CODES (SIC)

Industry Group No.	49	Electric, Gas and Sanitary Services
Industry No.	4911	Electric Services

### 2.3 FACILITY CATEGORY

The regulated emissions units at the existing facility include two nominal 157.5 megawatts (MW) combined-cycle Siemens Westinghouse 501FD combustion turbines. The combined-cycle turbines each include one unfired heat recovery steam generator (HRSG). The combustion turbines only operate in combined-cycle mode (i.e., the HRSGs are not equipped with bypass stacks). Steam generated by the two HRSGs is sent to one common nominal 173 MW steam turbine. The facility utilizes pipeline natural gas as its primary fuel source with distillate fuel oil serving as a backup fuel. These are Acid Rain Units and are regulated under the Florida Electrical Power Plant Siting Act.

Based on the Title V permit, this facility is a synthetic minor source of hazardous air pollutants (HAPs). This facility is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant, such as particulate matter (PM/PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), or volatile organic compounds (VOC) exceeds 100 tons per year (TPY). This facility is within an industry included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. Because emissions are greater than 100 TPY for at least one criteria pollutant, the facility is also a Major Facility with respect to Rule 62-212.400,

# TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

Prevention of Significant Deterioration (PSD). This facility is located in an area designated, in accordance with Rule 62-204.340, F.A.C., as attainment for all pollutants.

### 3. PROJECT DESCRIPTION

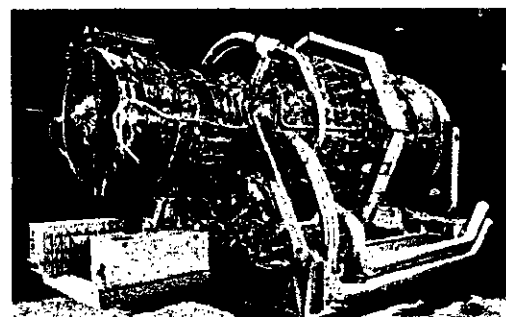
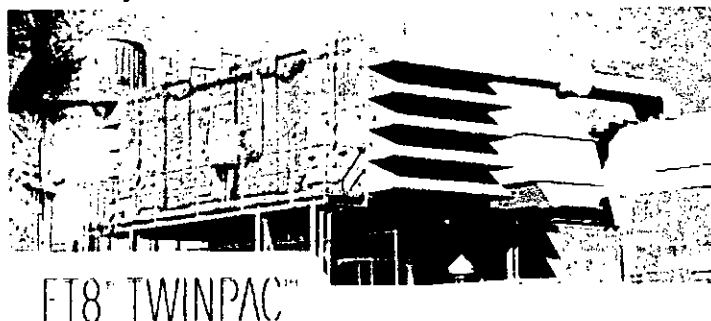
This project will add approximately 300 megawatts worth of simple cycle (peaking power) combustion turbines.

Emissions Unit No.	Proposed Emissions Unit Description
005 - 009	Pratt & Whitney Twin Pac Combustion Turbines each representing approximately 60 megawatts of peaking power.

The applicant proposes that the above generators will be operated in simple cycle mode (only) with the hours of operation limited to 2500 per CT per year. Of the 2500 hours per year, the applicant proposes to fire 0.05% sulfur oil for up to 500 hours per year and pipeline natural gas for the remaining (2000) hours per year. A review and P.T.E. analysis follow.

### 4. PROJECT DETAILS

Five FT8 Twin Pac Combustion Turbines are intended to be installed at the Payne Creek plant. Each Twin Pac consists of two 30 MW (FT8) gas turbines; each generator is derived from the JT8D aircraft engine and a separate power turbine. Each CT is expected to have an approximate maximum heat input of 317.8 MMBtu/hr based upon natural gas. The images below represent the approximate appearance of such units, with the table indicating advertised specifications.

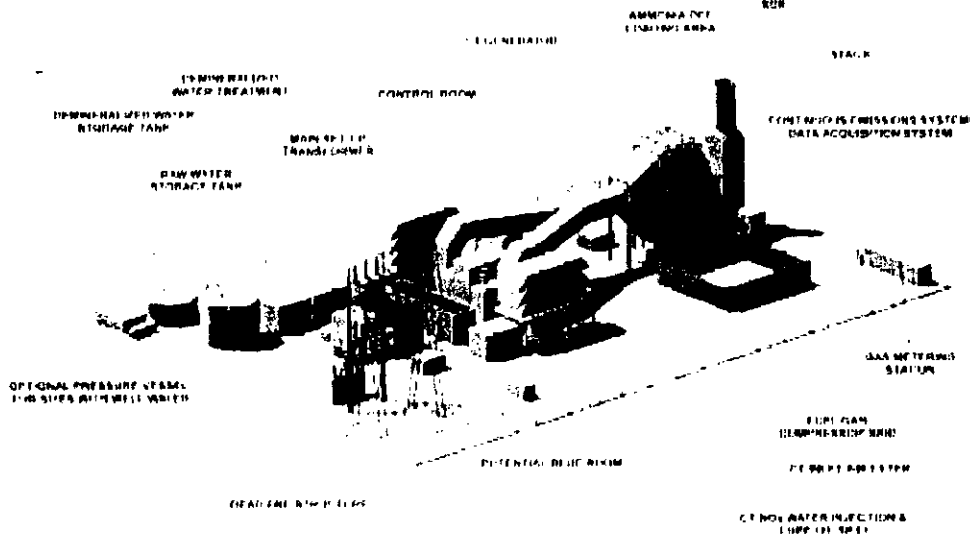


Performance

	<u>Natural Gas/WI</u>	<u>Fuel Oil/WI</u>
Output (kW)	55138	53002
Horsepower (shp)	73951	71086
Heat rate (BTU/kW-hr)	9214	9397
Efficiency (%)	37	36
Exhaust flow (lb/sec)	389	384
Exhaust temp (°F)	841	842
NOx emissions (ppmvd@15%O2)	25	42

The Twin Pac consists of three primary units: the gas turbine unit, the generator unit, and the electric/control unit. The Twin Pac turbine and generator units consist of two opposed gas turbines directly connected through a diaphragm coupled to a single double-ended electric generator. Below is a typical layout, from CalPeak's Escondido Power Plant (Enterprise #7).

# TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION



## 4.1 MAXIMUM POTENTIAL TO EMIT

The following table summarizes the maximum potential to emit (PTE) for the subject project without the applicant's proposed CO/VOC controls:

Pollutant	PSD Threshold (TPY)	CT Emission Rate (lb/hr)		Annual CT Emissions (lb/year) <sup>(1)</sup>	Tons per year for 10 CT's	PSD Applies?
		OIL	GAS			
NO <sub>x</sub>	40	51.2	32	89,600	448	Yes
CO <sup>(2)</sup>	100	19.3	81.3	172,333	861.67	Yes
SO <sub>2</sub>	40	14.7	0.9	9,150	45.75	Yes
PM <sub>10</sub>	15	7	3	9500	47.5	Yes
VOC	40	4.6	8.3	18,900	94.5	Yes
SAM	7	1.69	0.21	1,265	6.3	No

Notes: (1) Assumed 2000 hours of oil operation and 500 hours of natural gas operation at highest emission rate.

(2) Calculated based upon removal of applicant's proposed oxidation catalyst at 85% removal efficiency.

In summary, a PSD Review and BACT Determination are required for NO<sub>x</sub>, CO, SO<sub>2</sub>, VOC and PM<sub>10</sub>.

## 4.2 APPLICANT'S PROPOSAL

**NO<sub>x</sub>:** The applicant provided an estimate from the CT supplier (Pratt & Whitney) for 10 packaged SCR systems at \$12.02M or \$1.2M per unit. It should be noted that the inclusion of water injection systems on each CT was presumed as the "starting point" by the applicant. The applicant estimates a direct installation cost of \$3.6M and an indirect cost of \$3.1M (both for all 10 CT's), which together with 15% contingency and another \$0.43M "pre-production cost" yields a total capital investment of \$21.99M, or \$2.2M per CT.

The applicant further estimates that the additional "annual costs" will be \$5.2M, split almost equally between the annualized catalyst replacement cost and the capital investment annual recovery charges. Dividing this estimate by 10 yields an annualized total CT cost (TAC) of \$525k. The applicant estimates that each SCR system will reduce the annual NO<sub>x</sub> by 80%, or to approximately 5/8.4 ppm while combusting gas/oil respectively. Therefore, an annual NO<sub>x</sub> reduction of 0.80 \* 44.8 = 35.84 TPY is computed and the applicant's cost effectiveness is submitted as \$25,197/35.84 = \$14,654 per ton.

According to the applicant, BACT for the simple cycle combustion turbines is represented by water injection, with proposed emission rates of 25 ppm (gas) and 42 ppm (oil).

# TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

**CO/VOC:** The applicant indicated that the NESHAP does not apply to this application since the facility is currently a synthetic minor for HAPS and this project yields an increase of only 3.7 TPY, of which formaldehyde represents 57%. However, an oxidation catalyst is being proposed and the applicant did not calculate the oxidation catalyst cost-effectiveness for purposes of BACT.

**PM<sub>10</sub>:** The applicant indicated that a review of EPA's BACT/LAER Clearinghouse Documents did not reveal any post-combustion particulate control technologies being used on gas-fired or light-oil fired CTs and recommended that the combustion of clean fuels provides the best means of PM control.

**SO<sub>2</sub>/SAM:** The applicant indicates that fuel quality is the only technically feasible method of controlling SO<sub>2</sub> and SAM emissions. The applicant proposes pipeline natural gas and 0.05% sulfur distillate oil as BACT.

## 4.3 SUMMARY OF APPLICANT'S PROPOSAL AFTER PROPOSED CONTROLS

Pollutant	PSD Threshold (TPY)	CT Emission Rate (lb/hr)		Annual CT Emissions (lb/year) <sup>(1)</sup>	Tons per year for 10 CT's	PSD Applies?
		OIL	GAS			
NO <sub>x</sub>	40	51.2	32	89,600	448	Yes
CO <sup>(2)</sup>	100	7.0		17,500	87.5	No
SO <sub>2</sub>	40	14.7	0.9	9,150	45.75	Yes
PM <sub>10</sub>	15	7	3	9500	47.5	Yes
VOC	40	4.6	8.3	18,900	94.5	Yes
SAM	7	1.69	0.21	1,265	6.3	No

Notes: (1) Assumed 2000 hours of oil operation and 500 hours of natural gas operation at highest emission rate.

(2) Calculated based upon applicant proposed oxidation catalyst at 85% removal efficiency and proposed limit.

The Department will make a determination of BACT for NO<sub>x</sub>, PM<sub>10</sub> and SO<sub>2</sub>/SAM. The applicant's proposal for an oxidation catalyst suffices for the Department's CO/VOC BACT Determination as the top control technology.

## 5. DEPARTMENT DETERMINATION

In accordance with Rule 62-212.400, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

- Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.
- All scientific, engineering, and technical material and other information available to the Department.
- The emission limiting standards or BACT determination of any other state.
- The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "Top-Down" approach. The Department considers Top-Down to be a useful tool, though not a unique or required approach to achieve a BACT under the State regulations.

The minimum basis for a BACT determination is 40 CFR 60, Subpart GG, Standards of Performance for Stationary Gas Turbines (NSPS). The Department adopted subpart GG by reference in Rule 62-204.800, F.A.C. The key emission limits required by Subpart GG are 75 ppmvd NO<sub>x</sub> @ 15% O<sub>2</sub> (assuming 25 percent efficiency) and 150 ppmvd SO<sub>2</sub> @ 15% O<sub>2</sub> (or <0.8% sulfur in fuel). The BACT proposed by SECI is well within the NSPS limit.

# TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

## 5.1 NO<sub>x</sub> CONTROL

For this project, the applicant recommended that the top control methodology is water injection, rejecting SCR as too costly and dry low NO<sub>x</sub> burners as yielding no benefit over water injection (and causing a commensurate reduction in power output). The Department does not completely concur with the cost effectiveness calculations provided by the applicant and notes that EPA Region 4 (likewise) did not accept the SECI analysis. The following excerpts from CalPeak's Escondido application provide the Department with an example of cost effectiveness and emission estimates from another FT-8 project:

### Baseline Emission Rate

*The baseline emission rate represents a "realistic scenario of upper bound controlled emissions for the source." All new turbines manufactured in the U.S. in the last decade have been equipped with "dry low NO<sub>x</sub> (DLN)" combustors or water injection to reduce NO<sub>x</sub> formation in the turbine combustor. The FT-8 DLN combustor has a guaranteed NO<sub>x</sub> emission rate of 39 ppm. SCR will be used to reduce NO<sub>x</sub> emissions from the simple-cycle FT-8 Twin Pac to 2 ppm.*

### Annualized Cost of the Each Control Option

*The approximate capital cost of the SCR is \$1,600,000. The estimated approximate annualized cost of the SCR is \$1,000,000/year, including amortized capital and installation costs, O&M and CEM related costs. The NO<sub>x</sub> reduction achieved by the SCR at the uncontrolled NO<sub>x</sub> "potential to emit" level of 39 ppm at 8,760 hour/year will be approximately 333 tons per year (tpy). The NO<sub>x</sub> control cost effectiveness at PTE conditions is approximately \$3,000/ton.*

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*The approximate capital cost of the CO catalyst is \$400,000. The estimated approximate annualized cost of the SCR is \$120,000/year. The CO reduction achieved by the CO catalyst at the uncontrolled CO "potential to emit" level of 80 ppm at 8,760 hour/year will be approximately 422 tpy. The CO control cost effectiveness at PTE conditions is approximately \$300/ton. It is important to note that the relatively low CO control cost effectiveness is due primarily to the fact that a CO catalyst frame is already designed into the SCR housing. As a result, the cost of constructing and erecting the CO catalyst housing is already incorporated in the SCR capital cost.*

The Department cites the above for two reasons:

- 1) All else being equal, it is reasonable to assume that if the CalPeak unit were permitted for 2500 hours per year, that the cost effectiveness would have been approximately  $(8760/2500) * 3000 = \$10,500 \text{ per ton}$ .
- 2) Under an assumption that the SCR cost might not appreciably decrease when going from a 94% reduction (CalPeak's 2.5 ppm emission rate reduced from 39 ppm) to an 80% reduction (the SECI proposal), and for 2500 hours, the cost effectiveness would be approximately:  $\$10,500 * 0.94 / 0.8 = \$12,300 \text{ per ton}$ .

As an additional cross-check, the Department reviewed the ONSITE SYCOM Energy Corporation Study prepared for the U.S. Department of Energy, although the 1999 study is outdated by present day standards. Based upon this study (Table A-6), the total annual cost for a hot SCR applied to a 25 MW class unit (80% removal, 8400 hrs/yr) is \$427,818 per year. For the Seminole project, each 25 MW CT is estimated to emit 44.8 TPY; therefore, the annual removal rate at 80% would be 35.8 TPY and the cost effectiveness would be  $\$427,818 / 35.8 = \$11,950 \text{ per ton}$ .

Therefore, even though the Department does not agree with the applicant's BACT analysis for a variety of reasons (e.g. failure to consider the additional power output from utilizing water injection), the Department stipulates that SCR cost effectiveness is likely \$10,000 per ton (or higher) for a simple cycle unit operating at such low annual hours (2500). The Department further concludes that the cost effectiveness of Hot SCR on a typical simple cycle unit decreases to below \$10,000 per ton as operating hours approach 3000 per year; this is consistent with the Tallahassee Hopkins (LM6000) Determination, where hot SCR was *clearly* cost effective at 5800 hours per year. As a result, the issuance of a final permit for this project should require that the applicant provide ample physical space necessary to install an SCR should any (future) increase in emission rates or operating hours be sought; precedence for requirements such as this can be found in prior permitting actions.

For simple cycle units, the next most common methods of NO<sub>x</sub> control are dry low NO<sub>x</sub> burners, followed by water/steam injection. However, prior to making a BACT Determination for this case, references to three EPA letters, a 5-year old FDEP Determination, a 'Request for Additional Information' dated January 10, 2001 and EPA comments on this project are shown as a means of establishing the framework for setting a limit:

## TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

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- 1) In a letter written to the Illinois EPA (IEPA) dated July 5, 2000, the USEPA Region 5 spoke to the issue of whether 25 ppm and water injection represented BACT for the control of nitrogen oxides. Region 5 wrote:

*"Specifically, you asked for our perspective on the nature of aeroderivative turbines and whether they should be treated as a separate category of equipment from other turbines. SEV [applicant] has proposed 25 parts per million (ppm) and water injection as BACT for control of emissions of nitrogen oxides (NO<sub>x</sub>). Instead of determining whether turbines derived from those used in the aerospace industry, known as aeroderivative turbines, warrant treatment under PSD as a separate category of equipment from other turbines, we chose alternatively to look at other aeroderivative turbines around the country and see what BACT determinations there were." "We found that several slightly larger, yet arguably similar aeroderivative units in other States utilize selective catalytic reduction (SCR) and/or water injection to control NO<sub>x</sub> emissions down to 15 ppm and even as low as 5 ppm permitted levels, with actual tested levels below these values. The Texas Natural Resource Conservation Commission (TNRCC) permits simple cycle peakers in the 9 to 15 ppm NO<sub>x</sub> range, according to phone conversations with their staff and information obtained from their web page: [http://www.tnrcc.state.tx.us/air/nsr\\_permits/files/turbine.pdf](http://www.tnrcc.state.tx.us/air/nsr_permits/files/turbine.pdf). From their March 1, 2000 guidance memo on BACT for gas turbine peakers, including simple cycle: '2. NO<sub>x</sub> emissions - 9 to 15 ppmvd. Because of the limited operation of a peaking unit, TNRCC has, in practice, allowed a higher NO<sub>x</sub> BACT for peaking units....TNRCC will continue its practice of recommending higher NO<sub>x</sub> BACT for peaking units not to exceed 15 ppmvd.'"*

Region 5 further stated that the above proposal under evaluation by IEPA (25 ppm NO<sub>x</sub> control via water injection) for BACT *"does not meet the requirements of the Clean Air Act"*. This memo can be found at: <http://www.epa.gov/r9ytgmnj/programs/airtd/air/nsr/nsrmemos/sev.pdf>.

- 2) In a letter written to the Ohio EPA (OEPA) dated October 15, 1999 the USEPA Region 5 made the following comment regarding BACT for simple cycle combustion turbines:

*"USEPA does not believe the emission rate of 25 ppm of NO<sub>x</sub> represents BACT for simple cycle combustion turbines and would also request more information regarding the cost analysis for SCR control."*

This memo can be found at: <http://www.epa.gov/Region7/programs/airtd/air/nsr/nsrmemos/columbus.pdf>.

- 3) In a letter written to the Kentucky Department of Environmental Protection dated August 23, 1999 the USEPA Region 4 made the following comments regarding BACT for a simple cycle combustion turbine:

*"The issue of most concern to us is the proposed best available control technology (BACT) for NO<sub>x</sub> emissions. We disagree with the applicant's contention that dry low-NO<sub>x</sub> (DLN) turbine design capable of achieving emissions less than 25 ppmvd (at 15% oxygen) is not "available" for this project. Our determination is that a NO<sub>x</sub> emission rate of 25 ppmvd using water injection does not represent BACT for simple cycle combustion turbines. This determination is based on the following considerations:*

*a. The definition of best available control technology in Section 169(3) of the Clean Air Act refers to an emission limitation which the permitting authority, on a case-by-case basis, "determines is achievable for such facility through application of production processes and available methods, systems, and techniques." The definition of BACT in federal PSD regulations (40 CFR 51.166 and 52.21) essentially repeats the Clean Air Act definition. Our view is that DLN technology achieving a NO<sub>x</sub> emission rate less than 25 ppmvd is an available method under the general Clean Air Act concept of BACT. The lead time required to obtain an available control system is not taken into account specifically in either the Clean Air Act or in the implementing federal regulations.*

*b. On page 5-22 of the permit application (July 1999 revision), Calvert City Power refers to the U.S. Environmental Protection Agency's (EPA's) Draft October 1990 New Source Review Workshop Manual in discussing the concept of availability. In particular, the applicant refers to the phrase on page B.17 of the New Source Review Workshop Manual stating that "a technology is considered 'available' if it can be obtained by the applicant through commercial channels or is otherwise available within the common sense meaning of the term." We have two comments about the quoted phrase. First, it refers to a "technology" and not to a specific piece of equipment, and it does not denote one way or the other whether a time delay*

## TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

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*in ordering a technology is outside the bounds of the common sense meaning of available. Second, and more important, the quoted phrase appears after the following sentences: [paragraph] "In step 2, the technical feasibility of the control options identified in step 1 is evaluated. This step should be straightforward for control technologies that are demonstrated – if the control technology has been installed and operated successfully on the type of source under review, it is demonstrated and it is technically feasible. For control technologies that are not demonstrated in the sense indicated above, the analysis is somewhat more involved." [new paragraph] "Two key concepts are important in determining whether an undemonstrated technology is feasible: 'availability' and 'applicability.'" [emphasis added] In other words, the phrase cited by Calvert City Power applies within the context of an undemonstrated technology. Use of DLN simple cycle combustion turbines to achieve NO<sub>x</sub> emissions less than 25 ppmvd is clearly a demonstrated technology.*

*c. Understandably, the applicant's concern is with starting up the facility by the desired date of summer 2000. However, this was a startup commitment date elected by the applicant at the applicant's own risk before having any assurance that the facility could be permitted as proposed or permitted in time to meet the desired startup date. The U.S. Environmental Protection Agency (EPA) certainly has no wish to hinder a power developer's ability to enter a market at an opportune time. However, EPA has an obligation to consider long-term environmental effects over the entire lifetime of 20+ years that could be expected for a simple cycle combustion turbine facility. Starting up a facility with a control technology that is already out of date and that cannot be replaced except at great cost (see comments below) is not consistent with the objective of long-term environmental protection.*

Additionally, within the "conclusions" portion of the letter, EPA Region 4 wrote in part:

*"The actions that would resolve our objection to the issuance of a PSD/Title V permit are as follows:*

*9. Use of an alternative that would achieve a NO<sub>x</sub> of 15 ppmvd or less....."*

This memo can be found at: <http://www.epa.gov/region7/programs/air/air/nst/nstmemos/calvert.pdf>.

- 4) In a letter written to FDEP dated February 1, 2005 regarding this project, EPA referenced the above (Kentucky) letter and stated "The statements made in 1999 continue to reflect Region 4's expectations for simple cycle CT projects subject to PSD review."
- 5) In a Best Available Control Technology Determination completed by FDEP in year 2000 (PSD-FL-281), where the applicant proposed (as one option) the installation of ABB GT-24 machines with a NO<sub>x</sub> BACT of 25ppm via water injection, the Department went on record as stating:
  - A) *"The proposed emission limit of 25 ppmvd NO<sub>x</sub> for the ABB GT-24 option is too high compared with the 10.5 limit for the similar class GE product. The added power and efficiency characteristics of the ABB GT-24 do not justify a BACT for NO<sub>x</sub> more than twice that of the GE product." And,*
  - B) *"BACT for the ABB option is determined to be 5 ppmvd by Hot SCR while firing natural gas. Up to 250 hours of fuel oil operation are permitted with the Hot SCR system off (NO<sub>x</sub> equal to 42 ppmvd) and another 250 hours are permitted with the Hot SCR system in operation (NO<sub>x</sub> equal to 10 ppmvd)."*
- 6) In prior correspondence (1/10/2001) with Calpine Corp. (DEP File No. 1050221-004-AC, PSD-FL-311), regarding an application for a simple cycle peaking unit at the Auburndale facility, the Department wrote:

*"1. The initial (Phase I) gas fired emission level of NO<sub>x</sub> requested for the CT is 25 ppmvd, utilizing water injection as the control method. This does not represent BACT for the unit. Please reconsider the control technology, which is being proposed."*

The applicant's reply follows (in part):

*Response: As discussed at the January 12<sup>th</sup> meeting, the emissions limit proposed at 25 ppmvd NO<sub>x</sub> as BACT was based on the availability of the combustion turbine and the ability to generate additional power during the 2001-2002 summer seasons. The Siemens Westinghouse 501D5A with water injection for NO<sub>x</sub> control was the only available peaking turbine for the desired timeframe. Given the Department's concern with the proposed NO<sub>x</sub> emission limit as BACT, the Department's suggestion of "netting-out" of BACT review by assuming a federally enforceable emissions cap on both the existing Auburndale Cogeneration Facility and the Peaker Project is being proposed."*

## TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

The table below provides a summary of FDEP simple cycle permitting actions for the past five years (since 1999).

Project	Size (MW)	Type	Permit No.	Gas NO <sub>x</sub> Limit ppmvd @ 15%O <sub>2</sub>	Oil NO <sub>x</sub> Limit ppmvd @ 15%O <sub>2</sub>	Date Issued
City of Tallahassee Hopkins Station	100	Simple Cycle and SCR	No. 343	5	8	10/26/2004
FPL Manatee	1150	Simple Cycle	No. 328	9 12 PA 15 Peaking		4/16/2003
FPL Martin	1150	Simple Cycle	No. 327	9 12 PA 15 Peaking	42	4/16/2003
El Paso Manatee Energy Center	600	Simple Cycle	No. 318	9		1/16/2002
El Paso Belle Glade Energy Center	600	Simple Cycle	No. 317	9		1/28/2002
El Paso Broward Energy Center	775	Simple Cycle	No. 316	9		10/30/2001
Enron Deerfield Beach Energy Center	510	Simple Cycle	No. 314	9	36	WITHDRAWN
Calpine Eastern/Auburndale (Polk)	135	Simple Cycle	No. 311	25 (netted out)	42	6/26/2001
Duke Lake	640	Simple Cycle	No. 308	12 9 (new & clean)		7/19/2001
Enron Midway Energy Center (St. Lucie)	510	Simple Cycle	No. 305	9	42	2/14/2001
Enron Pompano Beach Energy Center	510	Simple Cycle	No. 304	9	42	WITHDRAWN
Duke Ft. Pierce	640	Simple Cycle	No. 302	10.5		6/18/2001
FPL Fort Myers	340	Simple Cycle	No. 298	10.5	42	12/22/2000
Decker Peace River (Polk)	510	Simple Cycle	No. 292	9	42	12/22/2000
FPL Martin	340	Simple Cycle	No. 286	9	42	7/24/2000
FPC (formerly Entergy/IPS) (DeSoto)	510	Simple Cycle	No. 284	9	42	6/30/2000
Granite Power Partners (Hardee)	510	Simple Cycle	No. 281	10.5	42	8/7/2000
Mirant (formerly IPS Shady Hill) (Pasco)	510	Simple Cycle	No. 280	9	42	8/7/2000
Dynegy Palmetto Power (Osceola)	510	Simple Cycle	No. 277	15		6/5/2000
El Paso Vandolah (Hardee)	680	Simple Cycle	No. 275	9	42	12/16/1999
Reliant (Osceola)	510	Simple Cycle	No. 273	10.5	42	12/28/1999
FPC Intercession City	300	Simple Cycle	No. 268	9	42	12/9/1999
JEA Brandy Branch (Duval)	510	Simple Cycle	No. 267	9	42	10/14/1999
TECO Polk Power Station	340	Simple Cycle	No. 263	10.5	42	10/8/1999
Constellation/Oleander Power (Brevard)	850	Simple Cycle	No. 258	9	42	11/22/1999
KUA Cane Island Power Park Unit 3	250	Simple Cycle	No. 254	12 @24-hr avg	42	11/24/1999



# TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

As can be seen from the table above, BACT for simple cycle combustion turbines in Florida (where SCR has not been required) has consistently been established in the ranges of 9 to 15 ppm on natural gas and from 36 to 42 ppm on oil, since late 1999 [BACT "means an emission limitation," see 40 C.F.R. § 52.21(b)(12)].

In summary, the Department finds that the weight of evidence is such that it is simply unable to conclude (as requested by the applicant) that NO<sub>x</sub> BACT for the proposed peaking units should exceed 15 ppm, or more specifically should be set at 25 ppm via water injection while firing natural gas. To do so would be contrary to Department determinations made over the past 5 years, in direct contradiction to EPA written guidance on prior simple cycle combustion turbine projects and this specific project, and would seemingly ignore legislative history, which is clear that Congress intended BACT to perform a technology-forcing function. Accordingly, the Department establishes BACT at 15 ppm while firing gas and 42 ppm while firing oil. Should the applicant choose to install SCR, a more stringent limit will be established.

Note: Within its January, 2005 "Response to FDEP's Second Request for Additional Information", the applicant wrote: "...Moreover, certain aspects of the Department's letter articulates an approach to BACT analysis that would have the effect of redesigning the essential elements of the proposed project and requiring SECI to change its proposed fuel option and/or choose an alternative vendor. This is an inappropriate extension of the BACT concept." The applicant went on to cite two cases heard by the EAB (92-1 and 98-3 through 98-20).

In light of the EPA Region IV comments related to this project, the Department does not believe that the attendant determination "redefines the source".

## 5.2 PM<sub>10</sub> CONTROL

PM<sub>10</sub>: The applicant stated that a "review of EPA's BACT/LAER Clearinghouse Documents did not reveal any post-combustion particulate control technologies being used on gas-fired or light-oil fired CTs." The Department agrees.

## 5.3 SO<sub>2</sub>/SAM CONTROL

SO<sub>2</sub>/SAM: The applicant indicates that fuel quality is the only technically feasible method of controlling SO<sub>2</sub> and SAM emissions. As a result, the applicant contends that pipeline natural gas and 0.05% sulfur distillate represent BACT. Although the Department has been proactively supporting the use of lower sulfur distillate fuels within new PSD projects (e.g. FPL Turkey Point and JEA Brandy Branch), given the relatively low annual SO<sub>2</sub> emission (PTE) of this project (45.8 TPY), 0.05% sulfur oil and pipeline natural gas are accepted as BACT for this project.

## 5.4 SUMMARY OF DEPARTMENT DRAFT BACT DETERMINATION

Emissions from each gas turbine shall not exceed the values given in the following table.

Pollutant	Emission Standard	CT Emissions (lb/hr)		Emission Unit (lb/year)	TPY for 5 EU's
		OIL	GAS		
NO <sub>x</sub>	15 (gas) 42 (oil) ppmvd @ 15% O <sub>2</sub>	51.2	19.2	128,000	320
CO	7 ppmvd @ 15% O <sub>2</sub>	7.0	7.0	35,000	87.5
SO <sub>2</sub>	NG & 0.05% S oil	14.7	0.9	18,300	45.75
PM <sub>10</sub>	VE	7	3	19,000	47.5
VOC	CO as surrogate	4.6	8.3	37,800	94.5

# TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

## 6. AIR QUALITY IMPACT ANALYSIS

### 6.1 INTRODUCTION

Based upon Department calculations of PTE, the proposed project will increase emissions of four pollutants at levels in excess of PSD significant amounts: PM/PM<sub>10</sub>, NO<sub>x</sub>, SO<sub>2</sub> and VOC. PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>x</sub> are criteria pollutants and have national and state ambient air quality standards (AAQS), PSD increments, significant impact levels and de minimus monitoring levels defined for them. There are no applicable PSD increments, AAQS, significant impact or de minimus monitoring levels for VOC. However, VOC is a precursor to a criteria pollutant, ozone; and any net increase of 100 tons per year of VOC requires an ambient impact analysis including the gathering of preconstruction ambient air quality data.

### 6.2 Significant Impact Analysis

For PM/PM<sub>10</sub>, NO<sub>x</sub> and SO<sub>2</sub>, which have significant impact levels defined for them, a significant impact analysis is performed. In order to conduct a significant impact analysis, the applicant uses the proposed project's emissions at worst load conditions as inputs to the models. The models used in this analysis and any required subsequent modeling analyses are described in Models and Meteorological Data Used in the Air Quality Analysis, later in this section. The highest predicted short-term concentrations and highest predicted annual averages predicted by this modeling are compared to the appropriate significant impact levels for the Class I and Class II Areas. If this modeling at worst load conditions show significant impacts, additional modeling, which includes the emissions from surrounding facilities, or multi-source modeling is required to determine the project's impacts on any applicable AAQS or PSD increments. If no significant impacts are shown, the applicant is exempted from doing any further modeling.

The applicant's initial PM/PM<sub>10</sub>, NO<sub>x</sub>, and SO<sub>2</sub> air quality impact analyses for this project indicated that maximum predicted impacts from all pollutants are less than the applicable "significant impact levels." These values are tabulated below and compared with the National Ambient Air Quality Standards.

**Maximum Project Air Quality Impacts from the Payne Creek Peaker Project for Comparison to the PSD Class II Significant Impact Levels**

Pollutant	Averaging Time	Max Predicted Impact (ug/m <sup>3</sup> )	Significant Impact Level (ug/m <sup>3</sup> )	Ambient Air Standards (ug/m <sup>3</sup> )	Significant Impact?
SO <sub>2</sub>	Annual	0.18	1	60	NO
	24-Hour	3.3	5	260	NO
	3-Hour	9.4	25	1300	NO
PM <sub>10</sub>	Annual	0.15	1	50	NO
	24-Hour	2.7	5	150	NO
NO <sub>2</sub>	Annual	0.48	1	100	NO

It is obvious that maximum predicted impacts from the project are much less than the respective ambient air quality standards. They are also less than the respective significant impact levels that would otherwise require more detailed modeling efforts.

The nearest PSD Class I area is the Chassahowitzka National Wilderness Area (CNWA) located about 130 km to the north. The applicant's initial PM/PM<sub>10</sub>, NO<sub>x</sub>, and SO<sub>2</sub> air quality impact analyses for this project indicated that maximum predicted impacts from all pollutants are less than the applicable "significant impact levels" for the Class I area. These values are tabulated below. Note that the values are miniscule if compared with the ambient air quality standards given in the previous table. Since these impacts are less than the respective significant impact levels, no further detailed modeling efforts are required in this Class I area.

# TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

**Maximum Project Air Quality Impacts from the Payne Creek Peaker Project Compared with PSD Class I Significant Impact Levels (Chassahowitzka)**

Pollutant	Averaging Time	Max. Predicted Impact at Class I Area (ug/m <sup>3</sup> )	Class I Significant Impact Level (ug/m <sup>3</sup> )	Significant Impact?
PM <sub>10</sub>	Annual	0.003	0.2	NO
	24-hour	0.12	0.3	NO
NO <sub>2</sub>	Annual	0.008	0.1	NO
SO <sub>2</sub>	Annual	0.004	0.1	NO
	24-hour	0.10	0.2	NO
	3-hour	0.5	1	NO

### 6.3 Preconstruction Ambient Monitoring Requirements

A preconstruction monitoring analysis is done for those pollutants with listed *de minimus* impact levels. These are levels which, if exceeded, would require pre-construction ambient monitoring. For this analysis, as was done for the significant impact analysis, the applicant uses the proposed project's emissions at worst load conditions as inputs to the models. As shown in the table below, the maximum predicted impacts for all pollutants with listed *de minimus* impact levels were less than these levels. Therefore no pre-construction monitoring is required for these pollutants.

**Maximum Project Air Quality Impacts for Comparison to the *de minimus* Ambient Impact Levels**

Pollutant	Averaging Time	Max Predicted Impact (ug/m <sup>3</sup> )	De Minimus Level (ug/m <sup>3</sup> )	Impact Greater Than De Minimus?
PM <sub>10</sub>	24-hour	2.7	10	NO
NO <sub>2</sub>	Annual	0.5	14	NO
SO <sub>2</sub>	24-hour	3.3	13	NO

There are no ambient standards or *de minimus* air quality levels associated with VOC. However, the pollutant associated with VOC is actually ozone. Projects exhibiting VOC emissions greater than 100 tons per year (TPY) are required to perform an ambient impact analysis for ozone including the gathering of preconstruction ambient air quality data. The proposed peaker project VOC emissions are predicted to be no more than 94.5 TPY, therefore an analysis, including ambient monitoring for ozone is not required.

Based on the preceding discussions, the only additional detailed air quality analyses (inclusive of all sources in the area) required by the PSD regulations for this project is an analysis of impacts on soils, vegetation, visibility, and of growth-related air quality modeling impacts.

### 6.4 Models and Meteorological Data Used in the Air Quality Analysis

**PSD Class II Area.** The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project in the surrounding Class II Area. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. It incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST3 model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfied the good engineering practice (GEP) stack height criteria.

Meteorological data used in the ISCST3 model consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the St. Petersburg/Clearwater International Airport and

# TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

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Ruskin respectively (surface and upper air data). The 5-year period of meteorological data was from 1992 through 1996. This airport station was selected for use in the study because it is the closest primary weather station to the study area and is most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

In reviewing this permit application, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in *NRDC v. Thomas*, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators. A more detailed discussion of the required analyses follows.

*PSD Class I Area.* Since the closest PSD Class I area, the Chassahowitzka National Wilderness Area (CNWA) is greater than 50 km from the proposed facility, long-range transport modeling was required for the Class I impact assessment. The California Puff (CALPUFF) dispersion model was used to evaluate the potential impact of the proposed pollutant emissions on the PSD Class I increments and on one Air Quality Related Value (AQRV): regional haze. CALPUFF is a non-steady state, Lagrangian, long-range transport model that incorporates Gaussian puff dispersion algorithms. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, line, area, and volume sources. The CALPUFF model has the capability to treat time-varying sources. It is also suitable for modeling domains from tens of meters to hundreds of kilometers, and has mechanisms to handle rough or complex terrain situations. Finally, the CALPUFF model is applicable for inert pollutants as well as pollutants that are subject to linear removal and chemical conversion mechanisms.

The meteorological data used in the CALPUFF model was processed by the California Meteorological (CALMET) model. The CALMET model utilizes data from multiple meteorological stations and produces a three-dimensional modeling grid domain of hourly temperature and wind fields. The wind field is enhanced by the use of terrain data, which is also input into the model. Two-dimensional fields such as mixing heights, dispersion properties, and surface characteristics are produced by the CALMET model as well. Meteorological data were obtained and processed for the calendar years of 1990, 1992 and 1996, the years for which MM4 and MM5 data are available. The CALMET wind field and the CALPUFF model options used were consistent with the suggestions of the federal land managers.

## 6.5 Additional Impacts Analysis

*Impact on Soils, Vegetation, and Wildlife.* Very low emissions are expected from this natural gas-fired, with backup fuel oil, combustion turbine in comparison with conventional power plants generating equal power. Emissions of acid rain and ozone precursors will be very low. The maximum ground-level concentrations predicted to occur for PM<sub>10</sub>, NO<sub>x</sub> and SO<sub>2</sub> as a result of the proposed project, including background concentrations and all other nearby sources, will be less than the respective ambient air quality standards (AAQS).

The project impacts are also less than the significant impact levels for PM<sub>10</sub>, NO<sub>x</sub>, and SO<sub>2</sub>, which in-turn, are less than the applicable allowable increments for each pollutant. Because the AAQS are designed to protect both the public health and welfare, and the project impacts are less than significant, it is reasonable to assume the impacts on soils, vegetation, and wildlife will be minimal or insignificant. The combination of low NO<sub>x</sub> and VOC emissions insures that the project will not contribute significantly to regional ozone levels or to any impacts caused by such ozone levels.

According to the application, native Floridian species of vegetation, such as cypress, slash pine, live oak, and mangrove, will not be visibly damaged when exposed to 1300 ug/m<sup>3</sup> of SO<sub>2</sub> for 8 hours. This proposed project is predicted to have a maximum impact of 9.4 ug/m<sup>3</sup> of SO<sub>2</sub> over a 3-hour period and 3.3 ug/m<sup>3</sup> of SO<sub>2</sub> over a 24-hour period. The maximum predicted nitrogen (N) and sulfur (S) depositions are well below the significant impact levels for N and S deposition.

*Impact on Visibility.* The maximum predicted regional haze impact on the Class I Chassahowitzka NWA located 130 km to the north was 5.14 percent and is slightly over the federal land manager's 5.0 significant impact level. This impact was predicted with the use of fuel oil and only occurs once in the three years of modeled events. The backup fuel oil will be limited to 0.05 percent sulfur, will exhibit relatively low particulate emissions and may only

# TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

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be fired 500 hours per year per turbine. Pipeline natural gas is a clean fuel and produces little particulate emissions. Very low NO<sub>x</sub> and SO<sub>2</sub> emissions will also minimize plume opacity and any effects on regional visibility.

*Growth-Related Air Quality Impacts.* According to the applicant, the project will require about 1 or 2 additional permanent employees. Therefore, residential growth due to this project will be minimal.

This project is a response to statewide and regional growth and also accommodates more growth. There are no adequate procedures under the PSD rules to fully assess these impacts. However, the type of project proposed has a small overall physical "footprint." After construction of the proposed project, Hardee County is expected to remain below the National Ambient Air Quality Standards.

## 7. CONCLUSION

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

Michael P. Halpin, Professional Engineer  
Department of Environmental Protection, Bureau of Air Regulation  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

## P.E. Certification Statement


Seminole Electric Cooperative, Inc.  
Payne Creek Generating Station – Peaker Project  
Hardee County

DEP File No.: PSD-FL-344, PA 89-25  
Facility ID No.: 0490340

**Project:** PSD Permit – Addition of 300 MW peaking power

**I HEREBY CERTIFY** that the engineering features described in the above referenced application and related additional information submittals, if any, 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, and geological features).

(Seal)

  
Michael P. Halpin, P.E.  
Registration Number: 31970

2-3-05  
Date

Permitting Authority:  
Florida Department of Environmental Protection  
Division of Air Resources Management  
Bureau of Air Regulation  
New Source Review Section  
Mail Station #5505  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Telephone: 850/488-0114  
Fax: 850/922-6979

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	<p>A. Signature <i>[Signature]</i> <i>s/o</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) _____ C. Date of Delivery <i>5/11/05</i></p>
<p>1. Article Addressed to:</p> <p>Mr. Michael Opalinski, Vice President of Technical Services Seminole Electric Cooperative, Inc. Payne Creek Generating Station 16313 North Dale Mabry Highway Tampa, Florida 33688-2000</p>	<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES, enter delivery address below:</p> <p>3. Service Type  <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail  <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise  <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>2. Article Number (Transfer from service label) <i>7001 0320 0001 3692 2015</i></p>	

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City, State, ZIP+4		

Mr. Michael Opalinski, Vice President  
of Technical Services  
Seminole Electric Cooperative, Inc.  
Payne Creek Generating Station  
16313 North Dale Mabry Highway  
Tampa, Florida 33688-2000

PS Form 3800, January 2001

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1. Article Addressed to:

Mr. Michael Opalinski  
 V.P., Technical Services  
 Seminole Electric Co-op  
 16313 N. Dale Mabry Highway  
 Tampa, FL 33688-2000

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A. Signature  Agent  Addressee  
*Julie Ludwig*

B. Received by (Printed Name)  Date of Delivery  
*JULIE LUDWIG 3/24/08*

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 16313 N. Dale Mabry Hwy.  
 City, State, ZIP+4  
 Tampa, FL 33688-2000



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<p>1. Article Addressed to:</p> <p>Mr. Michael Opalinski, Vice President of Technical Services Seminole Electric Cooperative, Inc. Payne Creek Generating Station 16313 North Dale Mabry Highway Tampa, Florida 33688-2000</p>	<p>B. Received by (Printed Name) <i>P. HENRY</i> C. Date of Delivery <i>2/9/05</i></p>
<p>2. Article Number (Transfer from service label) <i>7000 1670 0013 3110 2349</i></p>	<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>
<p>PS Form 3811, August 2001</p>	<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail</p> <p><input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>

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