

Jeb Bush
Governor

Department of Environmental Protection

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

Colleen M. Castille
Secretary

April 4, 2006

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Robert E. McGarrah, Production Superintendent
City of Tallahassee - Electric Utilities
300 South Adams Street, A-36
Tallahassee, Florida 32301

Re: Excess Emissions Authorization Due to Supplemental Gas Turbine and SCR Tuning
City of Tallahassee - Arvah B. Hopkins Electric Generating Station
Units HC3 (EU-031) and HC4 (EU-032)
Air Construction Permit No. 0730003-005-AC

Dear Mr. McGarrah:

On March 28, 2006, the Department received a request for authorization of excess emissions resulting from tuning the new gas turbines and SCR control systems to accommodate the variety of current operating demands. General Electric (the gas turbine vendor) and Deltak (the SCR system vendor) will both participate in the tuning program intended to provide four new performance curves. During the required tuning sessions, the gas turbine systems will operate intermittently and there may be periods when NOx emission levels are higher than normal. An important part of the program is to record the actual elevated NOx emissions, which will be used to modify the automated control system. The changes will allow the entire system to better respond to actual operating scenarios and improve performance and emission levels. The tuning program will last approximately two weeks and is preliminarily scheduled to begin April 17th.

Determination: In accordance with Rule 62-210.700(5), F.A.C., the Department authorizes temporary excess emissions due to tuning the new gas turbines and SCR control systems, provided the following conditions are met.

- The owner or operator shall notify the Department's Northwest District Office (phone call, fax, or email) at least one day prior to beginning the tuning program.
- The tuning program shall not exceed 17 operating days. This includes 14 operating days for gathering operational and emissions data and 3 operating days after implementing the modified control systems to make refinements. An operating day is defined as a day when one or more of the gas turbine fires fuel.
- The owner or operator shall adhere to best operational practices to minimize the level and the duration of excess emissions. The owner or operator is authorized to exclude up to a total of 60 hours of elevated NOx emissions due to the temporary tuning program.
- The owner or operator shall notify the Department's Northwest District Office (phone call, fax, or email) at least one day prior to implementing the modified control systems.
- Within 14 days of completing the tuning program, the owner or operator shall submit a report to the Department's Northwest District Office and the Bureau of Air Regulation summarizing the following: hourly NOx emissions rates during the tuning sessions; the four levels of performance evaluated; adjustments made to the control systems; and a discussion/presentation of the new performance curves.

Please note that the Department cannot vary any requirement of the NSPS Subpart GG provisions for the gas turbine. The authorization to conduct this tuning program expires on July 1, 2006.

Petitions: This determination is made pursuant to Chapter 403, Florida Statutes. A person whose substantial interests are affected by the proposed 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

"More Protection, Less Process"

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

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when 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 Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

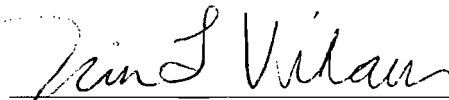
Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this determination. Persons whose substantial interests will be affected by any such final decision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

Mediation: Mediation is not available in this proceeding.

Effective Date: This decision is final and effective on the date filed with the clerk of the Department unless a petition is filed in accordance with the above paragraphs or unless a request for extension of time in which to file a petition is filed within the time specified for filing a petition pursuant to Rule 62-110.106, F.A.C., and the petition conforms to the content requirements of Rules 28-106.201 and 28-106.301, F.A.C. Upon timely filing of a petition or a request for extension of time, this action will not be effective until further order of the Department.

Appeal: Any party to this decision (order) has the right to seek judicial review of it under Section 120.68, F.S., by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within thirty (30) days after this order is filed with the clerk of the Department.

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 order was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 4/5/06 to the persons listed:

Robert McGarrah, City of Tallahassee*
John Powell, City of Tallahassee
Sandra Veazey, NWD Office
Rick Bradburn, NWD Office

Clerk Stamp

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

Barbara J. Sunday 4/5/06
(Clerk) (Date)

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY						
<p>■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p> <p>1. Article Addressed to:</p> <p style="text-align: center; margin-top: 20px;">Mr. Robert McGarrah Manager of Power Production City of Tallahassee 2602 Jackson Bluff Road Tallahassee, Florida 32304</p>	<p>A. Signature <div style="display: flex; justify-content: space-between;"> <div style="flex: 1;"> </div> <div style="flex: 0 0 100px;"> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee </div> </div> </p> <p>B. Received by (Printed Name) C. Date of Delivery 4-7-06</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>3. Service Type</p> <table style="width: 100%; border: none;"> <tr> <td><input checked="" type="checkbox"/> Certified Mail</td> <td><input type="checkbox"/> Express Mail</td> </tr> <tr> <td><input type="checkbox"/> Registered</td> <td><input type="checkbox"/> Return Receipt for Merchandise</td> </tr> <tr> <td><input type="checkbox"/> Insured Mail</td> <td><input type="checkbox"/> C.O.D.</td> </tr> </table> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	<input checked="" type="checkbox"/> Certified Mail	<input type="checkbox"/> Express Mail	<input type="checkbox"/> Registered	<input type="checkbox"/> Return Receipt for Merchandise	<input type="checkbox"/> Insured Mail	<input type="checkbox"/> C.O.D.
<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>2. Article Number (Transfer from service label)</p>	<p style="font-size: 1.2em;">7005 1160 0004 3034 3977</p>						

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

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OFFICIAL USE

Mr. Robert McGarrah, Manager of Power Production

Postage	\$	Postmark Here
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Total Postage & Fees	\$	

Sent To
Mr. Robert McGarrah, Manager of Power Production

Street, Apt. No.,
or PO Box No. 2602 Jackson Bluff Road

City, State, ZIP+4
Tallahassee, Florida 32304

PS Form 3800, June 2002

See Reverse for Instructions

Memorandum

Florida Department of Environmental Protection

TO: Joseph Kahn

THRU: Trina Vielhauer *TV*
Jeff Koerner *JK*

FROM: Jonathan Holtom *J.H.*

DATE: January 22, 2007

SUBJECT: Project No. 0730003-010-AC / PSD-FL-343A
Final Construction Permit for City of Tallahassee Electric Utilities
Clarification of Excess Emissions Limitations.

Attached for your approval and signature is a Final construction permit for the City of Tallahassee Electric Utilities' Arvah B. Hopkins Electric Generating Station. This permit revises Condition 20 of Permit No. PSD-FL-343 to better define the allowable periods of excess emissions.

The Public Notice requirements were met on January 7 by publishing in the Tallahassee Democrat. No comments have been received from the public or the applicant in response to this Public Notice, and no petitions were filed for an Administrative Hearing.

I recommend your approval and signature.

Attachments

TLV/jk/jh

FINAL DETERMINATION

City of Tallahassee Electric Utilities
Arvah B. Hopkins Electric Generating Station
DEP File No. 0730003-010-AC / PSD-FL-343A

The Department distributed a public notice package on December 7, 2006, to revise Condition 20 of Permit No. PSD-FL-343 as described in the "Technical Evaluation and Preliminary Determination", for the Arvah B. Hopkins Electric Generating Station, which is located at 1125 Geddie Road in Tallahassee, Leon County, Florida. The Public Notice of Intent to Issue was published in the Tallahassee Democrat on January 7, 2007.

COMMENTS/CHANGES

No comments were received, either from the public or the applicant, during the 14 (fourteen)-day public comment period.

CONCLUSION

The final action of the Department is to issue the final permit with no changes from the Noticed Draft Permit.



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

NOTICE OF FINAL PERMIT MODIFICATION

In the Matter of an
Application for Permit by:

City of Tallahassee Electric Utilities
Arvah B. Hopkins Electric Generating Station
2602 Jackson Bluff Road
Tallahassee, Florida 32304

Permit No. PSD-FL-343A
Project No. No. 0730003-010-AC
Facility ID No. 0730003
SIC No. 4911

Authorized Representative:

Robert E. McGarrah, Manager of Power Production

On September 11, 2006, the City of Tallahassee submitted an application to revise Condition 20 of Permit No. 0730003-005-AC (PSD-FL-343). The original permit authorized construction of new combustion turbines HC3 and HC4 at the Arvah B. Hopkins Electric Generating Station, which is located at 1125 Geddie Road in Tallahassee, Leon County, Florida. With regard to these combustion turbines, the application requests the following changes: exclusion of elevated NO_x emissions from the BACT compliance demonstration due to startup (up to the first 45 minutes), shutdown (up to 15 minutes), and fuel switching (up to 15 minutes); exclusion of all elevated NO_x emissions data collected during periods when it is necessary to tune the dry low-NO_x combustion, water injection, and/or selective catalytic reduction (SCR) systems; and clarification that up to 120 minutes in any 24-hour period may be excluded due to malfunctions.

On December 7, 2006, the Department issued an "Intent to Issue Draft Permit" package that revised Condition 20 of Permit No. PSD-FL-343 as described in the "Technical Evaluation and Preliminary Determination" accompanying the package. The Public Notice was published in the Tallahassee Democrat on January 7, 2007. As described in the attached "Final Determination", no comments were received in response to the Public Notice. Enclosed is the Final Permit Modification, which modifies the original air construction permit. A copy of this letter shall be filed with the referenced permit and shall become part of the permit. This permit modification is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within thirty (30) days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

Joseph Kahn, Director
Division of Air Resource Management

FINAL PERMIT MODIFICATION

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Final Permit (including the Final permit) was sent by electronic mail with return receipt requested before the close of business on 1/24/07 to the persons listed:

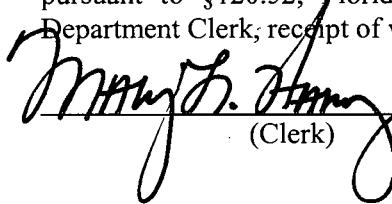
Mr. Robert McGarrah, City of Tallahassee (McGarraR@talgov.com)

Mr. John Powell, City of Tallahassee (powellj@talgov.com)

Mr. Rick Bradburn, NWD Office (rick.bradburn@dep.state.fl.us)

Clerk Stamp

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


(Clerk)

1/24/07
(Date)

FINAL PERMIT MODIFICATION

Original Permit No. PSD-FL-343, Project No. 073000005-AC

The following emissions units are addressed in this permit revision:

ID No.	Common Emission Unit Description
031	Unit HC3 - General Electric LM 6000 Sprint Combustion Turbine capable of inlet chilling to 48°F
032	Unit HC4 - General Electric LM 6000 Sprint Combustion Turbine capable of inlet chilling to 48°F
033 <u>034</u>	750 KW Emergency Diesel Generator, unregulated

All construction related to this project is complete and no further construction is authorized by this action. The following permit conditions are revised as follows. All other conditions are unchanged and the affected emissions units remain subject to the applicable requirements. Deletions are indicated by “~~strike through~~” and additions are indicated by “double underline”.

Combustion Turbines (EU-031 and EU-032)

Specific Condition No. 20 of Permit No. PSD-FL-343 (Project No. 0730003-005-AC) is changed as follows:

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~~ 120 minutes in any 24-hour period. [Design; Rule 62-210.700(1) and (5), F.A.C.]
 - (b) ~~During all startups, shutdowns, and malfunctions, the~~ The continuous emissions monitoring system (CEMS) shall monitor and record emissions during all periods of operation including startups, shutdowns, fuel switches, tuning sessions, and malfunctions. 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.]
 - (c) Up to 45 minutes of NO_x CEMS data may be excluded due to a startup when demonstrating compliance with the NO_x BACT emissions standard.
 - (d) Up to 15 minutes of NO_x CEMS data may be excluded due to a shutdown when demonstrating compliance with the NO_x BACT emissions standard.
 - (e) Up to 15 minutes of NO_x CEMS data may be excluded due to a fuel switch when demonstrating compliance with the NO_x BACT emissions standard.
 - (f) To maintain efficient operation, it is necessary to periodically tune the dry low-NO_x combustion, water injection, and/or selective catalytic reduction (SCR) systems. Provided the tuning sessions are performed according to manufacturer or industry specifications, NO_x CEMS data may be excluded due to such tuning sessions. A tuning session would occur after equipment replacement, repair, or as required to maintain proper operation of the combustor, water injection or SCR systems. At least one day prior to performing a tuning session, the permittee shall notify the Compliance Authority with details of the activity and the proposed schedule. The notice may be made by telephone, facsimile transmittal, or electronic mail.

FINAL PERMIT MODIFICATION

- (g) Up to 120 minutes of NO_x CEMS data during any 24-hour period may be excluded due to documented malfunctions when demonstrating compliance with the NO_x BACT emissions standard. 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.

As limited above, only those periods of data directly attributable to startup, shutdown, malfunction, fuel switching, or tuning shall be excluded from any compliance demonstration. No monitoring data shall be excluded when demonstrating compliance with the NSPS Subpart GG emissions standards. All valid data shall be used to report annual emissions. [Design; Rule 62-210.700(1) and (5), F.A.C.]

750 KW Emergency Diesel Generator, Unregulated (EU-034)

To match with the Department's Air Resource Management System database, the emissions unit identification number for the unregulated 750 KW emergency diesel generator is revised from EU-033 to EU-034. Accordingly, the emissions unit identification is revised as follows:

ID No.	Common Emission Unit Description
031	Unit HC3 - General Electric LM 6000 Sprint Combustion Turbine capable of inlet chilling to 48°F
032	Unit HC4 - General Electric LM 6000 Sprint Combustion Turbine capable of inlet chilling to 48°F
033 034	750 KW Emergency Diesel Generator, unregulated

**DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF ADMINISTRATIVE PERMIT CORRECTION**

In the Matter of an Application for Administrative Permit Correction:

Mr. Robert E. McGarrah, Production Superintendent
City of Tallahassee
1125 Geddie Rd. (C.R. 1585)
Tallahassee, FL 32304

DEP File No.: PSD-FL-343
Arvah B. Hopkins Generating Station

The Department has determined that a minor correction to information contained in Permit Number PSD-FL-343 is required. This correction is related to a typographical error and is minor in nature and does not alter, modify or revise any permit requirement. The correction is:

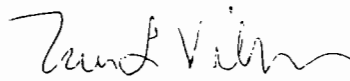
Specific Condition 34.(c) shall read:

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 39 of this permit.

This permit correction corrects and is a part of Permit Number PSD-FL-343. This permit correction is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order (permit correction) has the right to seek judicial review of it under section 120.68 of the Florida Statutes, by filing a notice of appeal under rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within thirty days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.



Trina Vielhauer, Chief
Bureau of Air Regulation

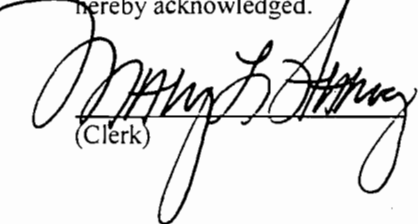
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Administrative Permit Correction was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 10/28/04 to the person(s) listed:

Robert E. McGarrah, City of Tallahassee *
Jennette Curtis, C.P.M., City of Tallahassee
Gregg Worley, EPA
John Bunyak, NPS
Sandra Veazey, NWD
Gerry Neubauer, NWD
Ken Kosky, Golder
Hamilton S. Oven, DEP-Siting

Clerk Stamp

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


(Clerk) 10/28/04
(Date)

U.S. Postal Service
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Sent To
Mr. Robert R. McGarrah, Production
Superintendent
City of Tallahassee
City, State, ZIP+4
1125 Geddie Road

PS Form 3800 (May 2005) PSN 7530-01-000-9001 See Reverse for Instructions

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF FINAL PERMIT

In the Matter of an
Application for Permit by:

City of Tallahassee
Arvah B. Hopkins Generating Station
1125 Geddies Rd. (C.R. 1585)
Tallahassee, Florida 32304

DEP File No. 0730003-005-AC
Leon County

Enclosed is Final Permit Number 0730003-005-AC. This permit authorizes the City of Tallahassee to install two, General Electric LM6000 Turbine-Generator sets firing oil or natural gas, at the Arvah B. Hopkins Generating Station. This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order has the right to seek judicial review of it under section 120.68 of the Florida Statutes, by filing a notice of appeal under rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within thirty days after this order is filed with the clerk of the Department.

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 Notice of Final Permit (including the Final permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 10/26/04 to the person(s) listed:

Robert E. McGarrah, City of Tallahassee *
Jennette Curtis, C.P.M., City of Tallahassee
Gregg Worley, EPA
John Bunyak, NPS
Sandra Veazey, NWD
Gerry Neubauer, NWD
Ken Kosky, Golder
Hamilton S. Oven, DEP-Siting

Clerk Stamp

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



(Clerk)

10/26/04
(Date)



Jeb Bush
Governor

Department of Environmental Protection

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

Colleen M. Castille
Secretary

PERMITTEE:

City of Tallahassee.
Arvah B. Hopkins Generating Station
1125 Geddie Road
Tallahassee, FL 32310

Authorized Representative:

Mr. Robert E. McGarrah
Production Superintendent

ARMS Permit No.	0730003-005-AC
PSD Permit No.	PSD-FL-343
Facility ID No.	0730003
SIC No.	4911
Expires:	July 31, 2007 [PA 74-03]

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 two simple cycle, inlet-chilled combustion turbines, complete with electrical generator sets. The gas turbines are capable of producing a nominal 100 MW of electricity. This project additionally authorizes the installation of a 750 KW (or smaller) emergency generator set to be fired on distillate oil.

The project will be located at the Arvah B. Hopkins Generating Station, located approximately 7 miles west of downtown Tallahassee and about 24 miles north of the Bradwell Bay NWA and about 17.5 miles north of the St. Marks NWA, PSD Class I Areas. UTM coordinates for this facility are Zone 16; 749.53 km E; 3371.7 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

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 two new electric power generators capable of providing a nominal 100 MW of electrical power.

NEW EMISSIONS UNITS

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

Emissions Unit No.	Emissions Unit Description
031 - 032	General Electric LM 6000 Sprint Combustion Turbines capable of inlet chilling to 48°F
033	750KW Emergency Diesel Generator

REGULATORY CLASSIFICATION

HAPs: This facility is a major source of hazardous air pollutants (Title III).

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_x, PM₁₀ and SO₂/SAM 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 and is therefore not subject to BACT.

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.

NESHAP: The combustion turbines may also subject to 40 CFR 63, Subpart YYYYY, compliance with which has currently been stayed.

RELEVANT DOCUMENTS

- Permit application received on 08/13/04
- Intent to Issue Permit package mailed on 09/09/04
- Public Notice published in Tallahassee Democrat on 09/19/04
- Proof of publication received 09/24/04

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 Northwest District Office, Florida Department of Environmental Protection, 160 Governmental Center, Pensacola, Florida 32502-5794. The phone number is 850/595-8300 and the fax number is 850/595-4417.
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]

SECTION II. ADMINISTRATIVE REQUIREMENTS

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.]
13. Exemption for Emergency Generators: One or more emergency generators located within a single facility {are exempt from permitting} provided:
- a. None of the emergency generators is subject to the Federal Acid Rain Program; and
 - b. Total fuel consumption by all such emergency generators within the facility is limited to 32,000 gallons per year of diesel fuel, 4,000 gallons per year of gasoline, 4.4 million standard cubic feet per year of natural gas or propane, or an equivalent prorated amount if multiple fuels are used.
- Additionally, an emissions unit or pollutant-emitting activity that is not entitled to a categorical exemption pursuant to paragraph 62-210.300(3)(a), F.A.C., shall be exempt from the permitting requirements of this chapter, Chapters 62-212 and 62-4, F.A.C., if it meets all of the following criteria:
- a. It would be subject to no unit-specific applicable requirement.
 - b. It would neither emit nor have the potential to emit:
 - (i) 500 pounds per year or more of lead and lead compounds expressed as lead;
 - (ii) 1,000 pounds per year or more of any hazardous air pollutant;
 - (iii) 2,500 pounds per year or more of total hazardous air pollutants; or
 - (iv) 5.0 tons per year or more of any other regulated pollutant.
 - c. Its emissions, in combination with the emissions of other units and activities at the facility, would not cause the facility to emit or have the potential to emit any pollutant in such amount as to make the facility a Title V source.
 - d. In the case of a proposed new emissions unit at an existing facility, the emissions of such unit, in combination with the emissions of any other proposed new or modified units and activities at the facility, would not result in a modification subject to the preconstruction review requirements of subparagraph 62-204.800(10)(d)2., Rule 62-212.400 or 62-212.500, F.A.C.
 - e. In the case of a proposed new pollutant-emitting activity, such activity would not constitute a modification of any existing non-exempt emissions unit at a non-Title V source or any existing non-insignificant emissions unit at a Title V source.
- [Rule 62-210.300(3)(a)20 and Rule 62-210.300(3)(b)1, 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
031 - 032	General Electric LM 6000 Sprint Combustion Turbines capable of inlet chilling to 48°F

APPLICABLE STANDARDS AND REGULATIONS

1. **BACT Determinations:** The emission unit addressed in this section is subject to a Best Available Control Technology (BACT) determination for nitrogen oxides (NO_x), sulfur dioxide (SO₂), sulfuric acid mist (SAM) and particulate matter (PM₁₀). [Rule 62-212.400, F.A.C.]
2. **NSPS Requirements:** The combustion turbine 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 two new inlet chilled combustion turbines with electrical generator sets (General Electric Model LM6000PC SPRINT). Each unit is designed to produce approximately 50 MW of electrical power. [Applicant Request]
4. **Permitted Capacity:** The heat input to each combustion turbine from firing natural gas shall not exceed 445 MMBtu per hour based on the following: 100% base load, a lower heating value (LHV) for natural gas and a compressor inlet air temperature of 29° F. The heat input to each combustion turbine from firing No. 2 fuel oil shall not exceed 434 MMBtu per hour based on the following: 100% base load, LHV and a compressor inlet air temperature of 29° 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 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 2 grains 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 5840 hours during any consecutive 12-month period, 4000 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. [Rule 62-212.400, F.A.C. (BACT); 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 turbine 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 Technology: The permittee shall install, calibrate, tune, operate, and maintain a water injection system for the unit. The system shall be designed and operated so as to ensure that NO_x emissions prior to the SCR are sufficient to achieve the NO_x emission limits in Condition III. 12 [Applicant request; Rule 62-4.070(3); Rule 62-212.400, F.A.C. (BACT)]
12. SCR/Oxidation Catalyst: To control NO_x and CO emissions, the combustion turbine shall include an SCR system and an oxidation catalyst. The catalyst systems shall be designed in order to achieve the following emissions, regardless of fuel being combusted: 5 ppmvd NO_x @ 15% O₂ and 6 ppmvd CO @ 15% O₂. [Design and Rule 62-212.400, F.A.C.]
13. 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

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

Pollutant	Emission Standard	CT Emissions (lb/hr)		One CT (lb/year)	TPY for 2 CT's
		OIL	GAS		
NO _x	5 ppmvd @ 15% O ₂	8.67	8.62	50,541	50.5
CO	6 ppmvd @ 15% O ₂	6.35	6.27	36,937	36.9
SO ₂	NG & 0.05% S oil	10.31	1.13	43,319	43.4
PM ₁₀	VE	14.94	2.45	64,268	64.2
PM	VE	14.94	2.45	64,268	64.2
VOC	3 ppmvd @ 15% O ₂	2.66	1.79	13,934	13.9
SAM	NG & 0.05% S oil	9.66	1.15	40,756	40.8

Note: Annual emissions, for the purposes of this table only, are based on 4000 hours of oil operation and 1840 hours of natural gas operation.

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

15. Carbon Monoxide (CO):

CO emissions from the combustion turbine shall not exceed 6.0 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, F.A.C. (PSD Avoidance)]

16. Nitrogen Oxides (NO_x):

NO_x emissions from the combustion turbine shall not exceed 5.0 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 40 CFR Part 60 Subpart GG and based on a 24-hour block average for data collected from the continuous emissions monitor. The ammonia slip rate shall be limited to 10 ppmvd @ 15% O₂. [Rule 62-212.400, F.A.C. (BACT)]

17. Particulate Matter (PM/PM₁₀), Sulfuric Acid Mist (SAM) and Sulfur Dioxides (SO₂)

(a) Fuel Specifications. Emissions of PM, PM₁₀, SAM, and SO₂ shall be limited by the use of pipeline-quality natural gas containing no more than 2 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 the combustion turbine shall not exceed 10% opacity, based on a 6-minute average. This work practice standard is established as a means of ensuring the non-applicability of BACT. 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)]

18. Volatile Organic Compounds (VOC):

VOC emissions from the combustion turbine shall not exceed 3.0 ppmvd corrected to 15% oxygen for each fuel. The VOC emissions shall be measured and reported in terms of methane. The permittee shall demonstrate compliance with these standards by conducting initial tests in accordance with EPA Methods 25 and/or 25A and the performance testing requirements of this permit. Optional testing in accordance with EPA Method 18 may be conducted to account for the actual methane fraction of the measured VOC emissions. [Application, Design, Rule 62-4.070(3), F.A.C.]

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_x 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

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

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, 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 SlipNo 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 permitted capacity, but not later than 180 days after initial operation of the emissions unit. Initial performance tests shall be conducted for CO, NO_x, VOC, ammonia slip and visible emissions while combusting each fuel. Initial NO_x 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_x, CO, and visible emissions from the combustion turbine for each fuel. 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_x emissions data collected during the annual NO_x 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 1st to September 30th). 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_x, and visible emissions from the combustion turbine. VOC emission tests are not required prior to permit renewal provided the CO emission standards are met. Testing for ammonia slip meeting the requirements of Condition 25, Annual Performance Tests will meet 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 the 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

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

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_x CEMS: The permittee shall install, calibrate, operate, and maintain a CEMS to measure and record NO_x 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_x 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_x 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, and zero 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.]

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

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 the combustion turbine. 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. All hours of operation shall be included in the demonstration of compliance with the 12-month fuel usage limitations. 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_x 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 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. [Rule 62-210.370(2), F.A.C.]

**TECHNICAL EVALUATION AND
FINAL BACT DETERMINATION**

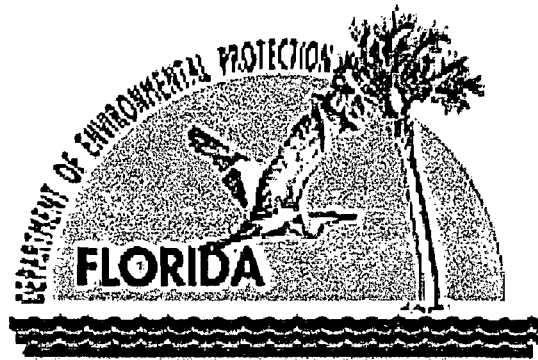
**TECHNICAL EVALUATION
AND
FINAL BACT DETERMINATION**

City of Tallahassee Arvah B. Hopkins Station

Combustion Turbine Addition

Leon County

0730003-005-AC



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

October 20, 2004

TECHNICAL EVALUATION AND FINAL BACT DETERMINATION

1. GENERAL INFORMATION

1.1 APPLICANT NAME AND ADDRESS

City Of Tallahassee
Arvah B. Hopkins Generating Station
1125 Geddie Road
Tallahassee, Florida 32310

Authorized Representative: Robert E. McGarrah, Manager – Power Production, City of Tallahassee

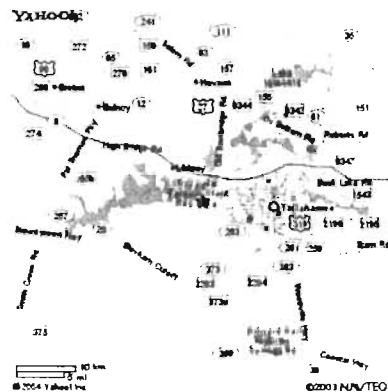
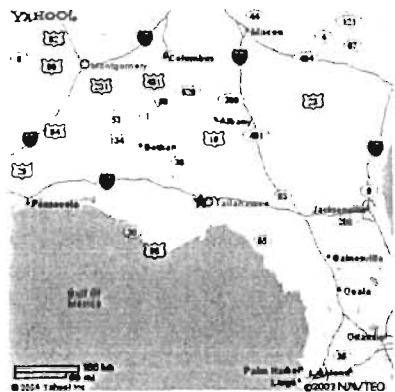
1.2 REVIEWING AND PROCESS SCHEDULE

August 13, 2004 Received permit application
August 13, 2004 Application complete

2. FACILITY INFORMATION

2.1 FACILITY LOCATION

The City of Tallahassee Arvah B. Hopkins Station is located approximately 7 miles west of downtown Tallahassee and 25 miles north of the St. Marks NWR, a Class I Area. UTM coordinates for this facility are Zone 16; 749.53 km E; 3371.7 km N.



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

This facility consists of two fossil fuel-fired steam generators and two fossil fuel-fired combustion turbines. The two steam generators are Phase II Acid Rain Units. Boiler Number 2 is regulated under the Florida Electrical Power Plant Siting Act. The total (nominal) combined electrical generating capacity from the facility is 356.27 megawatts electric (MW), of which, 313 MW are provided by the steam generators and 43.27 MW are provided by the combustion turbines. The fuels used at this facility are natural gas, fuel oil and on-specification used oil.

Based on the Title V permit renewal application, this facility is a major 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/PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), 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-

TECHNICAL EVALUATION AND FINAL BACT DETERMINATION

212.400, 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

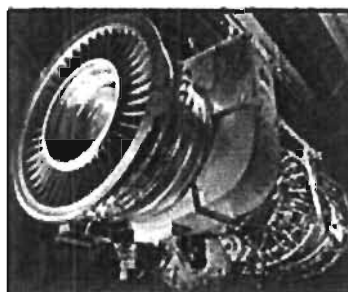
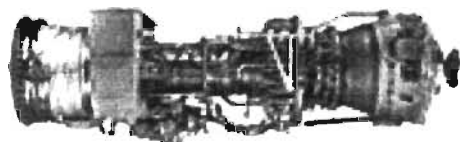
This project will add two nominal 50 megawatt GE LM6000 CT's and one 750 KW emergency (diesel) generator.

Emissions Unit No.	Emissions Unit Description
031 - 032	General Electric LM 6000PC Sprint Combustion Turbines
033	750KW Emergency Diesel Generator

The applicant proposes that these generators will be operated in simple cycle mode (only) with the hours of operation limited to 5840 per CT per year. Of the 5840 hours per year, the applicant proposes to fire 0.05% sulfur oil for up to 4000 hours per year and pipeline natural gas for the remaining 1840 hours per year. A review and P.T.E. analysis follow.

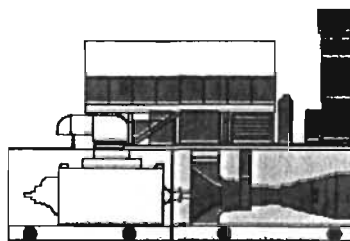
4. PROJECT DETAILS

Two GE LM6000 Sprint Combustion Turbines will be installed at the Hopkins plant. Each unit is expected to have an approximate maximum heat input of 445 MMBtu/hr based upon LHV natural gas. The below images represent the approximate appearance of such units, and the table indicates GE advertised specifications.



SPRINT 60-Hz Generator Sets

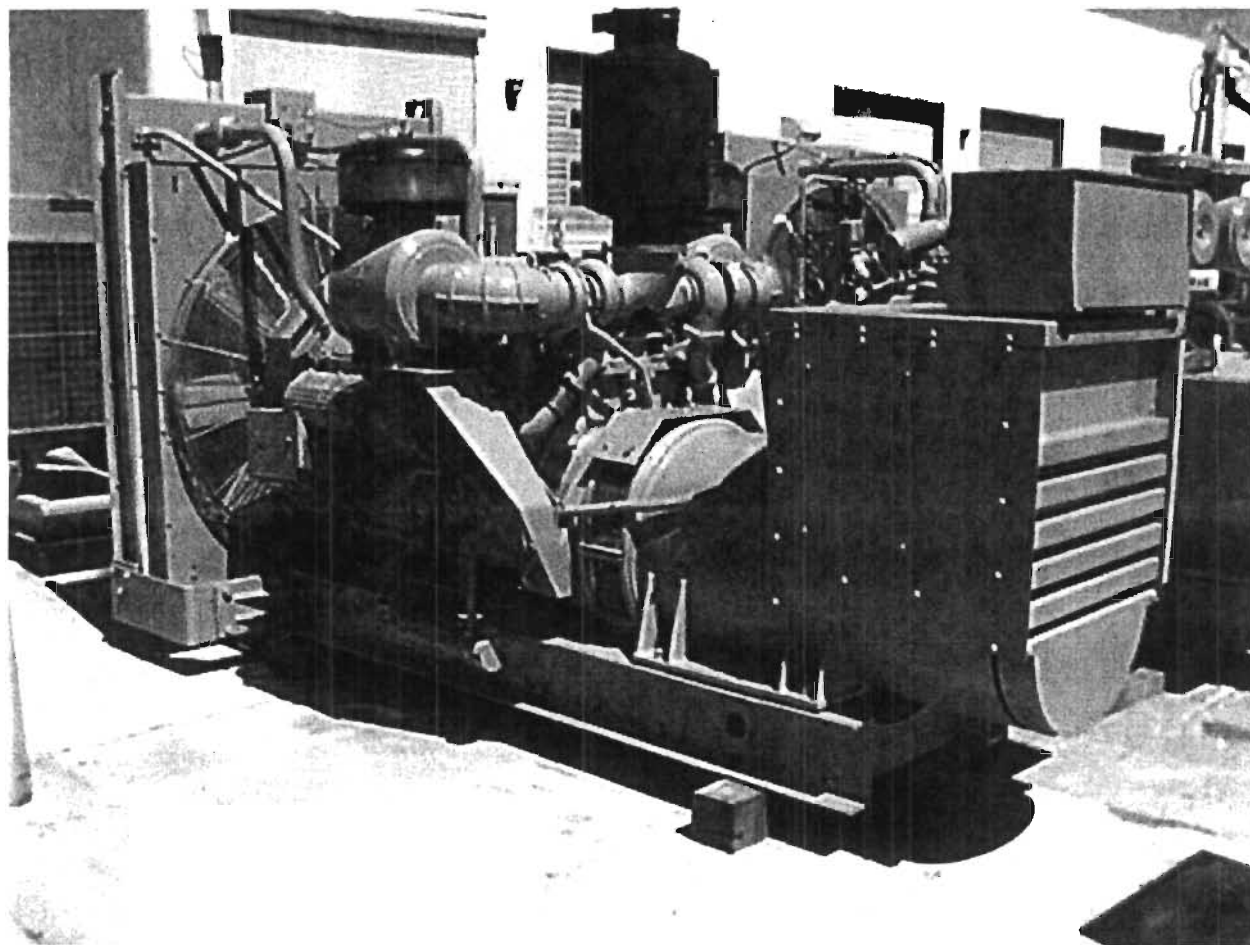
Base Plate Length	56' 6"	(17.22 m)
Base Plate Width	13' 6"	(4.11 m)
Enclosure Height	14' 0"	(4.42 m)
Overall Length	56' 8"	(17.30 m)
Overall Width*	49' 9"	(15.16 m)
Overall Height*	36' 2"	(11.02 m)
Base Plate Foundation Load*	476,000 lb	(214,200 kg)



	Power kW	Heat Rate Btu/kWh LHV	kJ/kWh LHV	No. Shafts	Pressure Ratio	Shaft Speed rpm	Exhaust Flow lb/h	kg/s	Exhaust Temp. °F	°C
LM6000PC SPRINT*	50080	8434	8916	2	30.9	3600	295	134	826	441
LM6000PC	43417	8112	8549	2	29.1	3600	281	127	831	444
LM6000PD SPRINT	46824	8235	8688	2	30.7	3600	290	131	837	447
LM6000PD	42336	8308	8765	2	29.3	3600	278	126	846	452
LM6000PD (liquid fuel)	49212	8415	8878	2	28.1	3600	268	122	857	458
LM2500PK	30676	8834	9300	2	23.6	3600	192	87.1	958	514
LM2500PV	30463	8854	9069	2	22.6	6100	186	84.3	931	499
LM2500PH**	27763	8391	8775	2	20.2	3600	167	75.9	926	497
LM2500PE	22719	9311	9789	2	19.1	3600	153	69.4	992	533

TECHNICAL EVALUATION AND FINAL BACT DETERMINATION

The emergency diesel generator will likely appear as follows (Caterpillar 3412TA):



4.1 MAXIMUM POTENTIAL TO EMIT

The following table summarizes the maximum potential to emit (PTE) for the subject project without controls:

Pollutant	PSD Threshold (TPY)	CT Emission Rate (lb/hr)		Annual CT Emissions (lb/year)	Tons per year for 2 CT's	Emergency Generator TPY	TPY Total	PSD Applies?
		OIL	GAS					
NO _x	40	72.9	43.1	370,904	370.8	1.62	372.4	Yes
CO	100	15.8	43.2	142,688	142.7	0.62	143.3	Yes
SO ₂	40	10.31	1.13	43,319	43.4	0.04	43.4	Yes
PM ₁₀	15	14.94	2.45	64,268	64.2	0.04	64.2	Yes
VOC	40	4.43	1.78	20,995	21	0.24	21.2	No
SAM	7	9.66	1.15	40,756	40.8	Neg.	40.8	Yes

Note: Assumed 4000 hours of oil operation and 1840 hours of natural gas operation.

In summary, a PSD Review and BACT Determination are required for NO_x, CO, SO₂, SAM and PM₁₀. Additionally, the LM6000's are subject to the NESHAP (which is currently "stayed") for which a MACT based standard of 91 ppb exists. The applicant suggests that the AP-42 formaldehyde emission factor (3,100 lb/10¹² Btu for all loads) is inappropriate and recommends a value which is approximately 10% of that value. Given the

TECHNICAL EVALUATION AND FINAL BACT DETERMINATION

conservative nature of a PSD and MACT analysis, the Department finds inadequate reason to reject the higher (3,100 lb/10¹²) emission factor and has applied it within its analysis, resulting in an uncontrolled formaldehyde emission rate of approximately 1.38 lb/hr.

4.2 APPLICANT'S PROPOSAL

NO_x: The applicant provided a vendor estimate of a packaged SCR/Oxidation Catalyst system (including Direct Installation Cost, or DAC) of \$2.48M. Based upon information from the supplier, the City has indicated that 60% of this cost is required for the SCR system and the remaining 40% for the OC system. Accordingly, total capital costs are calculated at \$1.49M for the installation of a high temperature SCR. Although the Department does not completely accept the analysis of cost effectiveness the applicant has estimated it at \$6700 per ton of NO_x removed (based upon 4000 hours of annual oil operation) which is acceptable.

CO: The applicant indicated that since the NESHAP applies to this application, an oxidation catalyst is proposed. As a result, the applicant did not calculate cost-effectiveness for purposes of BACT. However, the capital costs including direct installation are 40% of the SCR/OC system or \$990k, and the CO removed will be 26 TPY per CT.

PM₁₀: 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."

SO₂/SAM: The applicant indicates that fuel quality is the only technically feasible method of controlling SO₂ and SAM emissions. As a result, the applicant contends that pipeline natural gas and 0.05% sulfur distillate represent BACT.

4.3 SUMMARY OF APPLICANT'S PROPOSAL AFTER CONTROLS

Pollutant	PSD Threshold (TPY)	CT Emission Rate (lb/hr)		Annual CT Emissions (lb/year)	Tons per year for 2 CT's	Emergency Generator TPY	TPY Total	PSD Applies?
		OIL	GAS					
NO _x	40	8.67	8.62	50,541	50.5	1.62	52.2	Yes
CO	100	6.35	6.27	36,937	36.9	0.62	37.5	No
SO ₂	40	10.31	1.13	43,319	43.4	0.04	43.4	Yes
PM ₁₀	15	14.94	2.45	64,268	64.2	0.04	64.2	Yes
VOC	40	2.66	1.79	13,934	13.9	0.24	14.1	No
SAM	7	9.66	1.15	40,756	40.8	Neg.	40.8	Yes

Note: Assumed 4000 hours of oil operation and 1840 hours of natural gas operation.

The Department will make a determination of BACT for NO_x, PM₁₀ and SO₂/SAM.

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.

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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 first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically unfeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

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_x @ 15% O₂ (assuming 25 percent efficiency) and 150 ppmvd SO₂ @ 15% O₂ (or <0.8% sulfur in fuel). The BACT proposed by the City of Tallahassee is well within the NSPS limit.

5.1 NO_x CONTROL

Much has been made through the years of the detrimental effects of combusting liquid fuels and the corresponding application of SCR. Often-times, applicants will cite either the limited domestic experience which is available, or the removal of an SCR at the PREPA project in San Juan, Puerto Rico (see: <http://www.epa.gov/Region2/news/2000/00048.htm>). Conversely, the Department has long been aware of the successful application of SCR on liquid fired applications in Japan and Europe, as well as the documentation available by such organizations as the European Power Plant Suppliers Association (see: http://www.epps.org/BAT_LCP/BAT_LCP_Draft_2/BAT_LCP_Draft_2_CH_06.pdf) and the European Integrated Pollution Prevention and Control Bureau (see: <http://www.eel.nl/index9.htm>). Furthermore, consultants which have been hired by the Department confirm that the application of SCR is now commercially available and likely cost-effective for nearly any fuel, including synthetic gas (syngas) whether generated from coal, petroleum products or even biomass; MSW, kerosene, naphtha or even biomass, presuming that the flue gas characteristics can be adequately defined.

For this project, the applicant provided a vendor estimate of \$1.49M (which included the Direct Installation Cost, or DAC) for the installation of a high temperature SCR. Considering all other potential expenses, a total annualized cost of \$1.08M at an annual removal of 160 TPY of NO_x was estimated. The TPY was based upon reducing NO_x from 42 ppmvd while firing oil (the predominant fuel) and from 25 ppmvd while firing gas to 5 ppm for either fuel. The overall cost effectiveness is well below \$10,000 per ton of NO_x, and therefore properly considered as reasonable. The Department concurs with the applicant's proposal and agrees that a reduction of NO_x by 90% (from 42 ppm to 5 ppm) for firing distillate oil represents BACT. In this regard, the Department sees no reason to believe that the application of an SCR will yield NO_x emissions while firing natural gas any higher than 3.5 ppmvd (an 85% reduction from 25 ppm), but due to the limited *state-wide* experience with high-temperature SCR, the requested BACT emission rate of NO_x (5 ppmvd) for natural gas as well as an ammonia slip rate of 10 ppmvd will be allowed.

5.2 PM₁₀ CONTROL

PM₁₀: 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 that the combustion of clean fuels is BACT for this combustion turbine.

5.3 SO₂/SAM CONTROL

SO₂/SAM: The applicant indicates that fuel quality is the only technically feasible method of controlling SO₂ 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 SO₂ emission (PTE) of this project (43.3 TPY), 0.05% sulfur oil and pipeline natural gas are accepted as BACT for this project.

TECHNICAL EVALUATION AND FINAL BACT DETERMINATION

6. AIR QUALITY IMPACT ANALYSIS

6.1 INTRODUCTION

The proposed project will increase emissions of four pollutants at levels in excess of PSD significant amounts: NO_x, PM₁₀ and SO₂ and sulfuric acid mist (SAM). NO_x, PM₁₀ and SO₂ are criteria pollutants and have national and state ambient air quality standards (AAQS), PSD increments, and significant impact levels defined for them. There are no applicable PSD increments, AAQS or *de minimus* monitoring levels for SAM; the BACT determination will limit maximum potential SAM emissions.

The applicant's initial NO_x, PM₁₀ and SO₂ air quality impact analyses for this project predicted no significant impacts in the Class II area in the vicinity of the project; therefore, further applicable AAQS and PSD increment impact analyses for these pollutants were not required in the vicinity of the project. The nearest PSD Class I areas are the Bradwell Bay and St. Marks National Wilderness Areas (NWA) located approximately 28 and 38 km, respectively from the project site. The applicant's PSD Class I air quality analysis showed no significant impacts due to the project. Therefore, a cumulative PSD Class I increment analysis was not required for these pollutants. Also, the maximum predicted impacts for all pollutants were below their respective *de minimus* ambient impact levels. Therefore, pre-construction monitoring at the proposed site was not required for this project. Based on the preceding discussion the air quality analyses required by the PSD regulations for this project are the following:

- A significant impact analysis for NO_x, PM₁₀ and SO₂;
- A significant impact analysis for PM₁₀, SO₂, and NO₂ in the Bradwell Bay and St Marks NWA;
- An analysis of impacts on soils, vegetation, visibility, and of growth-related air quality modeling impacts.

Based on these required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, 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.

6.2 MODELS AND METEOROLOGICAL DATA USED

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project in the Class II area in the vicinity of the project, and in the portions of the Bradwell Bay and St. Marks NWA PSD Class I areas less than 50 km from the proposed facility. 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 satisfy 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 National Weather Service (NWS) stations at Tallahassee and Apalachicola, Florida (surface and upper air data). The 5-year period of meteorological data was from 1986 through 1990. These NWS stations were selected for use in the study because they are the closest primary weather stations to the study area and are most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

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For determining potential plume visibility effects in the portions of the St. Marks NWA that are within 50 km of the project, the VISCSCREEN model was used. The VISCSCREEN model can be used to calculate potential plume impact of specific pollutant emissions for specific transport and meteorological dispersion conditions.

Since portions of the Bradwell Bay and St. Marks NWA PSD Class I areas are greater than 50 km from the proposed facility, long-range transport modeling was required for the Class I increment impact assessment and for regional haze and nitrogen and sulfur deposition impacts. The California Puff (CALPUFF) dispersion model, Version 5.7 (EPA, 2003) was used to evaluate the potential impact of the proposed pollutant emissions on the PSD Class I increments. 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.

6.3 AMBIENT MONITORING REQUIREMENTS

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. When available, the use of existing representative monitoring data may satisfy the monitoring requirement. An exemption to the monitoring requirement may be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimus concentration. The table below shows that predicted ambient impacts from the power plant are substantially less than the respective de minimus levels; therefore, preconstruction ambient air quality monitoring is not required for any pollutant.

**PREDICTED MAXIMUM AIR QUALITY IMPACTS FROM THE PROJECT
COMPARED TO THE DE MINIMIS AMBIENT IMPACT LEVELS**

Pollutant	Averaging Time	Max Predicted Impact (ug/m ³)	De Minimus Level (ug/m ³)	Impact Greater Than De Minimus?
PM ₁₀	24-hour	2	10	No
NO ₂	Annual	0.05	14	No
SO ₂	24-hour	1	13	No

6.4 SIGNIFICANT IMPACT ANALYSIS

Initially, the applicant conducts modeling using only the proposed project's emissions at worst load conditions. In order to determine worst load conditions the ISCST3 model was used to evaluate dispersion of emissions from the simple cycle facility for three loads (50, 75% and 100%) and three seasonal operating conditions (summer, winter, and average) for each fuel type. Once the worst-case loads are identified, the applicant utilizes the ISCST3 model to evaluate impacts at these loads, and compares the results to the significant impact levels. If modeling at worst load conditions shows significant impacts, additional multi-facility modeling is required to determine the project's impacts on existing air quality and any applicable AAQS or PSD increments.

TECHNICAL EVALUATION AND FINAL BACT DETERMINATION

Receptors were placed around the facility, which is located in a PSD Class II area. The receptor grid for predicting maximum concentrations in the vicinity of the project was a discrete receptor grid that extended along the property boundary and out to 10 km. Receptor spacing along the property boundary was 50 m. For each pollutant subject to PSD and also subject to PSD increment and/or AAQS analyses, this modeling compares maximum predicted impacts due to the project with PSD significant impact levels to determine whether significant impacts due to the project are predicted in the vicinity of the facility. For the Class I analysis, the maximum concentrations were predicted by CALPUFF modeling at 233 receptors in the Bradwell Bay and St. Marks NWA PSD Class I areas. These receptors have been provided by the federal land manager. The table below shows the results of the significant impact modeling.

**MAXIMUM PROJECT AIR QUALITY IMPACTS FOR COMPARISON TO THE
PSD CLASS II SIGNIFICANT IMPACT LEVELS IN THE VICINITY OF THE FACILITY**

Pollutant	Averaging Time	Max. Predicted Impact (ug/m ³)	Significant Impact Level (ug/m ³)	Significant Impact?
SO ₂	Annual	0.05	1	NO
	24-hour	1	5	NO
	3-hour	5	25	NO
PM ₁₀	Annual	0.1	1	NO
	24-hour	2	5	NO
NO ₂	Annual	0.05	1	NO

**MAXIMUM PROJECT AIR QUALITY IMPACTS FOR COMPARISON TO
THE PSD CLASS I SIGNIFICANT IMPACT LEVELS ST.MARKS AND BRADWELL BAY NWA**

Pollutant	Averaging Time	Max. Predicted Class I Impact Area (ug/m ³)	Proposed EPA Significant Impact Level (ug/m ³)	Significant Impact?
SO ₂	Annual	0.01	0.1	NO
	24-hour	0.12	0.2	NO
	3-hour	0.35	1.0	NO
PM ₁₀	Annual	0.02	0.2	NO
	24-hour	0.18	0.3	NO
NO ₂	Annual	0.01	0.1	NO

The results of the significant impact modeling show that there are no significant impacts predicted due to the emissions from this project.

6.5 ADDITIONAL IMPACTS ANALYSIS

Impacts on Soils, Vegetation, and Wildlife

Very low emissions are expected from these natural gas-fired/low sulfur fuel oil combustion turbines in comparison with a conventional power plant generating equal power. Emissions of acid rain and ozone precursors will be very low. The maximum ground-level concentrations predicted to occur for SO₂, PM₁₀, CO and NO_x, 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 less than the significant impact levels, which are in

TECHNICAL EVALUATION AND FINAL BACT DETERMINATION

turn 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 maximum predicted total nitrogen and sulfur depositions predicted for the project in the Bradwell Bay and St. Marks NWA are less than the federal land manager's recommended significant impact levels.

Impact on Visibility

Natural gas and low sulfur distillate fuel oil are clean fuels and produce little ash. This will minimize smoke formation. The low NO_x and SO₂ emissions will also minimize plume opacity. Because no add-on control equipment and no reagents are required, there will be no steam plume or tendency to form ammoniated particulate species.


A regional haze analysis that used the CALPUFF modeling system was performed and showed a maximum predicted change in visibility, which is less than the NPS threshold of 5%. Therefore, the proposed project is not predicted to have an adverse impact on visibility and regional haze in the St. Marks NWA.

Growth-Related Air Quality Impacts

There will be short-term increases in the labor force to construct the project. These temporary increases will not result in significant commercial and residential growth in the vicinity of the project. Operation of the additional unit will require few new permanent employees, which will cause no significant impact on the local area.

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 final 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

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

- 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]

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.

Memorandum

Florida Department of Environmental Protection

TO: Michael G. Cooke

THRU: Trina Vielhauer *TV*
J. K. Pennington

FROM: Michael P. Halpin *MH*

DATE: October 20, 2004

SUBJECT: City of Tallahassee
Arvah B. Hopkins Generating Station

Attached for approval and signature is a construction permit for the subject facility. The permit authorizes the installation and operation of 2 gas/oil fired combustion turbine-generator sets rated at approximately 50 MW (each) of output.

This project exceeded several PSD thresholds and was therefore subject to a BACT Determination. I am pleased to report that this project will yield the first application of SCR and Oxidation Catalyst on a simple cycle combustion turbine in Florida. Of further significance, 4000 of the 5840 requested hours of operation are for the firing of oil, whereas the utility industry had previously maintained that oil-firing yielded an unacceptable failure potential to SCR catalysts.

The project was noticed in the Tallahassee Democrat on September 19, 2004 and no comments were received from the public. EPA Region IV had no adverse comments.

I recommend your approval and signature.

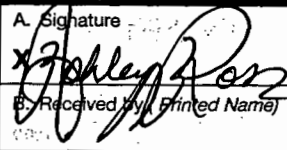
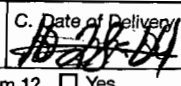
Attachments

/mph

mike,

*We should consider a
press release on this one.*

Mike

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> ■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. ■ Print your name and address on the reverse so that we can return the card to you. ■ Attach this card to the back of the mailpiece, or on the front if space permits. 		A. Signature  <input type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee	
1. Article Addressed to: Mr. Robert E. McGarrah City of Tallahassee Arvah B. Hopkins Generating Station 1125 Geddies Road (C.R. 1585) Tallahassee, Florida 32304		B. Received by (Printed Name) C. Date of Delivery 	
		D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
		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.	
		4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes	
2. Article Number (Transfer from service label)		7000 1670 0013 3109 8635	
PS Form 3811, August 2001		102595-02-M-1540	

U.S. Postal Service CERTIFIED MAIL RECEIPT (Domestic Mail Only; No Insurance Coverage Provided)											
<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> 5E98 607E E100 0297 0002 </div> <div> <table border="1"> <tr> <td>Postage</td> <td>\$</td> </tr> <tr> <td>Certified Fee</td> <td></td> </tr> <tr> <td>Return Receipt Fee (Endorsement Required)</td> <td></td> </tr> <tr> <td>Restricted Delivery Fee (Endorsement Required)</td> <td></td> </tr> <tr> <td>Total Postage & Fees</td> <td>\$</td> </tr> </table> </div> <div> Postmark Here </div> </div>		Postage	\$	Certified Fee		Return Receipt Fee (Endorsement Required)		Restricted Delivery Fee (Endorsement Required)		Total Postage & Fees	\$
Postage	\$										
Certified Fee											
Return Receipt Fee (Endorsement Required)											
Restricted Delivery Fee (Endorsement Required)											
Total Postage & Fees	\$										
Sent To Mr. Robert E. McGarrah City of Tallahassee 1125 Geddies Road (C.R. 1585) Tallahassee, Florida 32304 Arvah B. Hopkins Generating Station											
PS Form 3800, May 2000 See Reverse for Instructions											

Facsimile Cover Sheet

Environmental Resources

City of Tallahassee
Your Own Utilities™



To:	Jim Pennington Michael Halpin
Organization:	Florida Department of Environmental Protection
Fax:	921-9533

From:	John K. Powell, P.E.
Organization:	City of Tallahassee Utilities
Phone:	(850) 891-8851 <i>If you have a disability requiring accommodations call: FRS TDD, 1-800-955-8771</i>
Fax:	(850) 891-8277
E-mail	powellj@talgov.com

Date:	September 24, 2004
Re:	Proof of Publication Public Notice of Intent to Issue PSD Permit <u>DEP File No. 0730003-005-AC; (PA 74-03)</u>
Pages including cover:	3

Comments:

Please find attached proof of publication of the *Public Notice of Intent to Issue PSD Permit* for the City of Tallahassee's Resource Addition Project (FDEP File No. 0730003-005-AC). A hard copy will follow by U.S. Certified Mail No.: **70010360000207628585**. Please do not hesitate to contact me if you have any questions or require additional information. Thanks

TALLAHASSEE DEMOCRAT
PUBLISHED DAILY
TALLAHASSEE-LEON-FLORIDA

STATE OF FLORIDA COUNTY OF LEON:

Before the undersigned authority personally appeared Brenda Herring, who on oath says that she is Legal Advertising Representative of the Tallahassee Democrat, a daily newspaper published at Tallahassee in Leon County, Florida; that the attached copy of advertising being a Legal Ad in the matter of

RECEIVED

SEP 27 2004

BUREAU OF AIR REGULATION

NOTICE OF PUBLIC INTENT

in the Second Judicial Circuit Court was published in said newspaper in the issues of:

SEPTEMBER 19, 2004

Affiant further says that the said Tallahassee Democrat is a newspaper published at Tallahassee, in the said Leon County, Florida, and that the said newspaper has heretofore been continuously published in said Leon County, Florida each day and has been entered as second class mail matter at the post office in Tallahassee, in said Leon County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she has never paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this publication in the said newspaper.

BRNDA HERRING

LEGAL ADVERTISING REPRESENTATIVE

Sworn To or Affirmed and Subscribed Before Me.

This 24th Day of Sept 2004, by

Brenda Herring, Brenda Herring

Personally Known X

OR Produced Identification _____

Type of Identification Produced _____

(SEAL)

Notary Public
State of Florida



PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEP File No. 0730003-005-AC (PA 74-03)
City of Tallahassee
Arval B. Hopkins Generating Station
Leon County

The Department of Environmental Protection (Department) gives notice of its intent to issue a PSD Permit for Arval B. Hopkins Generating Station, located west of Tallahassee, Leon County. The permit allows for the installation of two combustion turbines, operating in simple cycle mode and for 5840 hours per year each. The LM6000 Sprint CT's are intended to be operated with 0.05% sulfur distillate oil for 4000 hours per year and pipeline natural gas for the remaining 1840 hours. This is an existing facility, which currently combusts natural gas, distillate oil and residual fuel oil. A Determination of Best Available Control Technology (BACT) was required. The applicant's mailing address is: 2602 Jackson Bluff Road, Tallahassee FL 32301.

The applicant has indicated that the installation of 2 combustion turbines (CT's), rated at approximately 50 MW each is required in order to accommodate projected peak load demands, an ancillary emergency generator is also requested. Based upon the equipment selected, anticipated fuel usage and planned operation, the City of Tallahassee has proposed to install selective catalytic reduction systems on each CT (for the reduction of NOX emissions) as well as oxidation catalysts for the reduction of carbon monoxide (CO), Volatile Organic Compounds (VOC's), formaldehyde and Non-Methane/Non-Ethane emissions. As a result, the regulated emission limit for NOX will be 5 ppmvd @ 15% O2 and the regulated emission limit for CO will be 6 ppmvd @ 15% O2. Based upon the Department's review, the applicant's proposal meets the Department's BACT requirements. A summary of the emission totals is included below:

Pollutant	PSD Threshold (TPY)	CT Emission Rate (lb/hr)	Annual CT Emissions (lb/year)	Tons per year for 2 CT's	Emergency Generator TPY	TPY Total	PSD Applies?
		OIL GAS					
NOX	40	8.67 8.62	50,541	50.5	1.62	52.2	Yes
CO	100	6.35 6.27	36,937	36.9	0.62	37.5	No
SO2	40	10.31 1.13	43,319	43.4	0.04	43.4	Yes
PM10	15	14.94 2.45	64,268	64.2	0.04	64.2	Yes
VOC	40	2.66 1.79	13,934	13.9	0.24	14.1	No
SAM	7	9.00 1.15	40,756	40.8	Neg	40.8	Yes

An air quality impact analysis was required and conducted. Emissions from the facility will not contribute to or cause a violation of any state or federal ambient air quality standards. Additionally, the project has no significant impact on the PSD Class I St. Marks NWR.

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

The Department will accept written comments concerning the proposed permit issuance action for a period of 30 (thirty) days from the date of publication of this Public Notice of Intent to Issue PSD Permit. Written comments should be provided to the Department's Bureau of Air Regulation at 2500 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

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

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 is filed by a substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3).

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

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

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

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

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

Florida Department of Environmental Protection

Bureau of Air Regulation

111 S. Magnolia Drive, Suite 4

Tallahassee, Florida, 32301

Telephone: (850) 488-1344

Fax: (850) 922-6979

Florida Department of Environmental Protection

Northwest District

160 Governmental Center

Pensacola, Florida 32501

Telephone: (850) 595-8300

The complete project file includes the application, Draft permit, and the information submitted by the Responsible Official, exclusive of confidential records under Section 403.111, F.S. Interested persons may review specific details of this project by contacting the Administrator, North Permitting Section, at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114, for additional information.

SEPTEMBER 19, 2004

City of Tallahassee
Your Own Utilities™



300 South Adams Street
Tallahassee, FL 32301

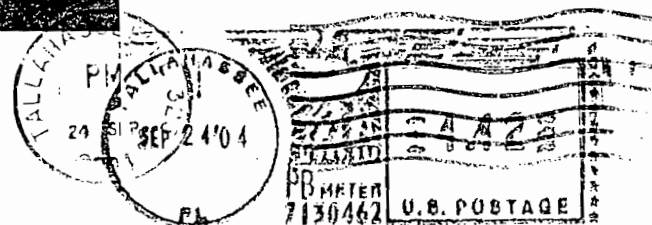
**RETURN RECEIPT
REQUESTED**

CERTIFIED MAIL



7001 0360 0002 0762 8585

Jim Pennington
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Mail Station #5505
Tallahassee, Florida 32399-2400



32399+2400 

Memorandum

Florida Department of Environmental Protection

TO: Trina Vielhauer

THRU: J. K. Pennington *JKP*

FROM: M. P. Halpin *MPH*

DATE: September 9, 2004

SUBJECT: City Of Tallahassee – Arvah B. Hopkins Station
Addition of two combustion turbines (CT's)
DEP File No. 0730003-005-AC

Attached is the public notice package for the subject project. The City of Tallahassee has proposed to make a permanent increase to their existing Hopkins Generating Station, west of Tallahassee. Their proposal is to install two LM6000 combustion turbines, generating about 50MW each. Of significance, these CT's are each intended to fire 0.05% sulfur oil for 4000 hours per year with natural gas as a backup. Also of significance, the City proposes to install SCR and oxidation catalyst on each CT.

I've enclosed the Draft Permit for your review and signature. As drafted, these combustion turbines will have the lowest permitted NO_x emission rate (5 ppmvd @ 15%O₂) of any simple cycle CT in the state of Florida, and perhaps the southeast. Overall emissions for this facility addition have no significant impact to Class II or Class I areas.

I recommend your approval.

JKP/mph

Attachments

P.E. Certification Statement

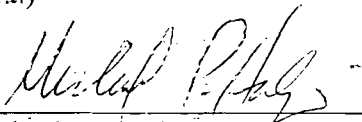
City of Tallahassee
Arvah B. Hopkins Generating Station
Leon County

DEP File No.: PA 74-03 (0730003-05-AC)
Facility ID No.: 0730003

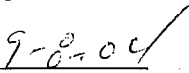
Project: Air Construction Permit – Addition of two LM6000 combustion turbines

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



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



Jeb Bush
Governor

Department of Environmental Protection

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

Colleen M. Castille
Secretary

September 9, 2004

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Robert E. McGarrah
Manager – Power Production, City of Tallahassee
2602 Jackson Bluff Road
Tallahassee, Florida 32304

Re: DEP File No. 0730003-005-AC; (PA 74-03)
Arvah B. Hopkins Station CT Addition / Leon County

Dear Mr. McGarrah:

Enclosed is one copy of the Draft PSD Permit relative to the City of Tallahassee's request for the installation of two LM6000 Combustion Turbines. The above facility is located west of Tallahassee in Leon County.

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

Please submit any written comments you wish to have considered concerning the Department's proposed action to J. K. Pennington, P.E., Administrator, North Permitting Section at the above letterhead address. If you have any other questions, please contact Michael P. Halpin, P.E. at 850/921-9519.

Sincerely,

Trina Vielhauer, Chief
Bureau of Air Regulation

TV/mph

Enclosures

In the Matter of an
Application for Permit by:

Robert E. McGarrah, Manager – Power Production
City of Tallahassee
2602 Jackson Bluff Road
Tallahassee, Florida 32304

DEP File No. 0730003-005-AC
PSD-FL-343 (PA 74-03)

INTENT TO ISSUE PSD PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue a PSD Permit (copy of Draft permit attached) for the proposed project, detailed in the application specified above and for the reasons stated below.

The applicant, Robert E. McGarrah, Manager – Power Production, City of Tallahassee, applied on August 13, 2004, to the Department for a PSD Permit at its Arvah B. Hopkins Generating Station, located west of Tallahassee, Leon County. The request is for the installation of two combustion turbines, operating in simple cycle mode and for 5840 hours per year each. The LM6000 Sprint CT's are intended to be operated with 0.05% sulfur distillate oil for 4000 hours per year and pipeline natural gas for the remaining 1840 hours.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, 62-212 and 40 CFR 52.21. The above actions are not exempt from permitting procedures. The Department has determined that a PSD Permit is required relative to temporary power installations.

The Department intends to issue this PSD Permit based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. and 40 CFR 52.21.

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

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

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

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

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 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.

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

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

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

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above. Mediation is not available in this proceeding.

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

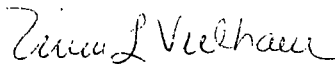
The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number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

by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

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

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

Executed in Tallahassee, Florida.



Trina Vielhauer, Chief
Bureau of Air Regulation

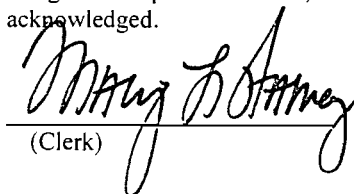
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Intent to Issue PSD Permit (including the Public Notice of Intent to Issue PSD Permit and the Draft PSD Permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 9/13/04 to the person(s) listed:

Robert E. McGarrah, City of Tallahassee *
Jennette Curtis, C.P.M., City of Tallahassee
Gregg Worley, EPA
John Bunyak, NPS
Sandra Veazey, NWD
Gerry Neubauer, NWD
Ken Kosky, Golder
Hamilton S. Oven, DEP-Siting

Clerk Stamp

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

 9/13/04
(Clerk) (Date)

PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File No. 0730003-005-AC (PA 74-03)

City of Tallahassee
Arvah B. Hopkins Generating Station
Leon County

The Department of Environmental Protection (Department) gives notice of its intent to issue a PSD Permit for Arvah B. Hopkins Generating Station, located west of Tallahassee, Leon County. The permit allows for the installation of two combustion turbines, operating in simple cycle mode and for 5840 hours per year each. The LM6000 Sprint CT's are intended to be operated with 0.05% sulfur distillate oil for 4000 hours per year and pipeline natural gas for the remaining 1840 hours. This is an existing facility, which currently combusts natural gas, distillate oil and residual fuel oil. A Determination of Best Available Control Technology (BACT) was required. The applicant's mailing address is: 2602 Jackson Bluff Road, Tallahassee FL 32301.

The applicant has indicated that the installation of 2 combustion turbines (CT's), rated at approximately 50 MW each is required in order to accommodate projected peak load demands; an ancillary emergency generator is also requested. Based upon the equipment selected, anticipated fuel usage and planned operation, the City of Tallahassee has proposed to install selective catalytic reduction systems on each CT (for the reduction of NO_x emissions) as well as oxidation catalysts for the reduction of carbon monoxide (CO), Volatile Organic Compounds (VOC's), formaldehyde and Non-Methane/Non-Ethane emissions. As a result, the regulated emission limit for NO_x will be 5 ppmvd @ 15% O₂ and the regulated emission limit for CO will be 6 ppmvd @ 15% O₂. Based upon the Department's review, the applicant's proposal meets the Department's BACT requirements. A summary of the emission totals is included below:

Pollutant	PSD Threshold (TPY)	CT Emission Rate (lb/hr)		Annual CT Emissions (lb/year)	Tons per year for 2 CT's	Emergency Generator TPY	TPY Total	PSD Applies?
		OIL	GAS					
NO _x	40	8.67	8.62	50,541	50.5	1.62	52.2	Yes
CO	100	6.35	6.27	36,937	36.9	0.62	37.5	No
SO ₂	40	10.31	1.13	43,319	43.4	0.04	43.4	Yes
PM ₁₀	15	14.94	2.45	64,268	64.2	0.04	64.2	Yes
VOC	40	2.66	1.79	13,934	13.9	0.24	14.1	No
SAM	7	9.66	1.15	40,756	40.8	Neg.	40.8	Yes

An air quality impact analysis was required and conducted. Emissions from the facility will not contribute to or cause a violation of any state or federal ambient air quality standards. Additionally, the project has no significant impact on the PSD Class I St. Marks NWR.

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

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

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

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

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 is filed by a substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3).

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

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

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

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

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

Florida Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida, 32301
Telephone: (850) 488-1344
Fax: (850) 922-6979

Florida Department of Environmental Protection
Northwest District
160 Governmental Center
Pensacola, Florida 32501
Telephone: (850) 595-8300

The complete project file includes the application, Draft permit, and the information submitted by the Responsible Official, exclusive of confidential records under Section 403.111, F.S. Interested persons may review specific details of this project by contacting the Administrator, North Permitting Section, at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114, for additional information.

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

**TECHNICAL EVALUATION AND
PRELIMINARY BACT DETERMINATION**

**TECHNICAL EVALUATION
AND
PRELIMINARY BACT DETERMINATION**

City of Tallahassee Arvah B. Hopkins Station

Combustion Turbine Addition

Leon County

0730003-005-AC



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

September 9, 2004

TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

1. GENERAL INFORMATION

1.1 APPLICANT NAME AND ADDRESS

City Of Tallahassee
Arvah B. Hopkins Generating Station
1125 Geddie Road
Tallahassee, Florida 32310

Authorized Representative: Robert E. McGarrah, Manager – Power Production, City of Tallahassee

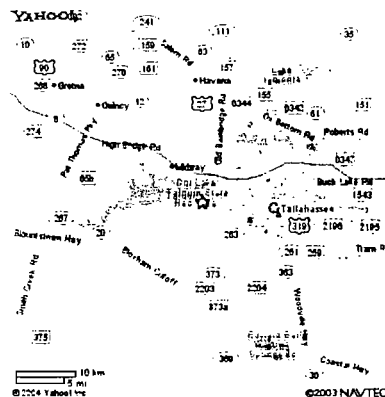
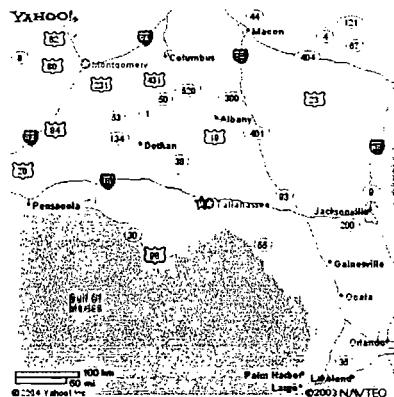
1.2 REVIEWING AND PROCESS SCHEDULE

August 13, 2004 Received permit application
August 13, 2004 Application complete

2. FACILITY INFORMATION

2.1 FACILITY LOCATION

The City of Tallahassee Arvah B. Hopkins Station is located approximately 7 miles west of downtown Tallahassee and 25 miles north of the St. Marks NWR, a Class I Area. UTM coordinates for this facility are Zone 16; 749.53 km E; 3371.7 km N.



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

This facility consists of two fossil fuel-fired steam generators and two fossil fuel-fired combustion turbines. The two steam generators are Phase II Acid Rain Units. Boiler Number 2 is regulated under the Florida Electrical Power Plant Siting Act. The total (nominal) combined electrical generating capacity from the facility is 356.27 megawatts electric (MW), of which, 313 MW are provided by the steam generators and 43.27 MW are provided by the combustion turbines. The fuels used at this facility are natural gas, fuel oil and on-specification used oil.

Based on the Title V permit renewal application, this facility is a major 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/PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), 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-

TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

212.400, 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

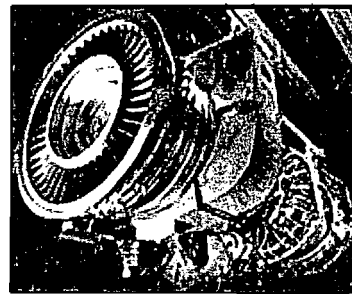
This project will add two nominal 50 megawatt GE LM6000 CT's and one 750 KW emergency (diesel) generator.

Emissions Unit No.	Emissions Unit Description
031 - 032	General Electric LM 6000PC Sprint Combustion Turbines
033	750KW Emergency Diesel Generator

The applicant proposes that these generators will be operated in simple cycle mode (only) with the hours of operation limited to 5840 per CT per year. Of the 5840 hours per year, the applicant proposes to fire 0.05% sulfur oil for up to 4000 hours per year and pipeline natural gas for the remaining 1840 hours per year. A review and P.T.E. analysis follow.

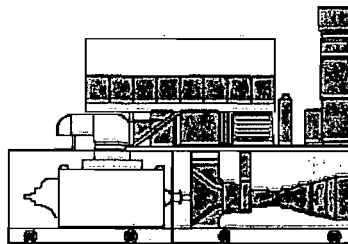
4. PROJECT DETAILS

Two GE LM6000 Sprint Combustion Turbines will be installed at the Hopkins plant. Each unit is expected to have an approximate maximum heat input of 445 MMBtu/hr based upon LHV natural gas. The below images represent the approximate appearance of such units, and the table indicates GE advertised specifications.



SPRINT 60-Hz Generator Sets

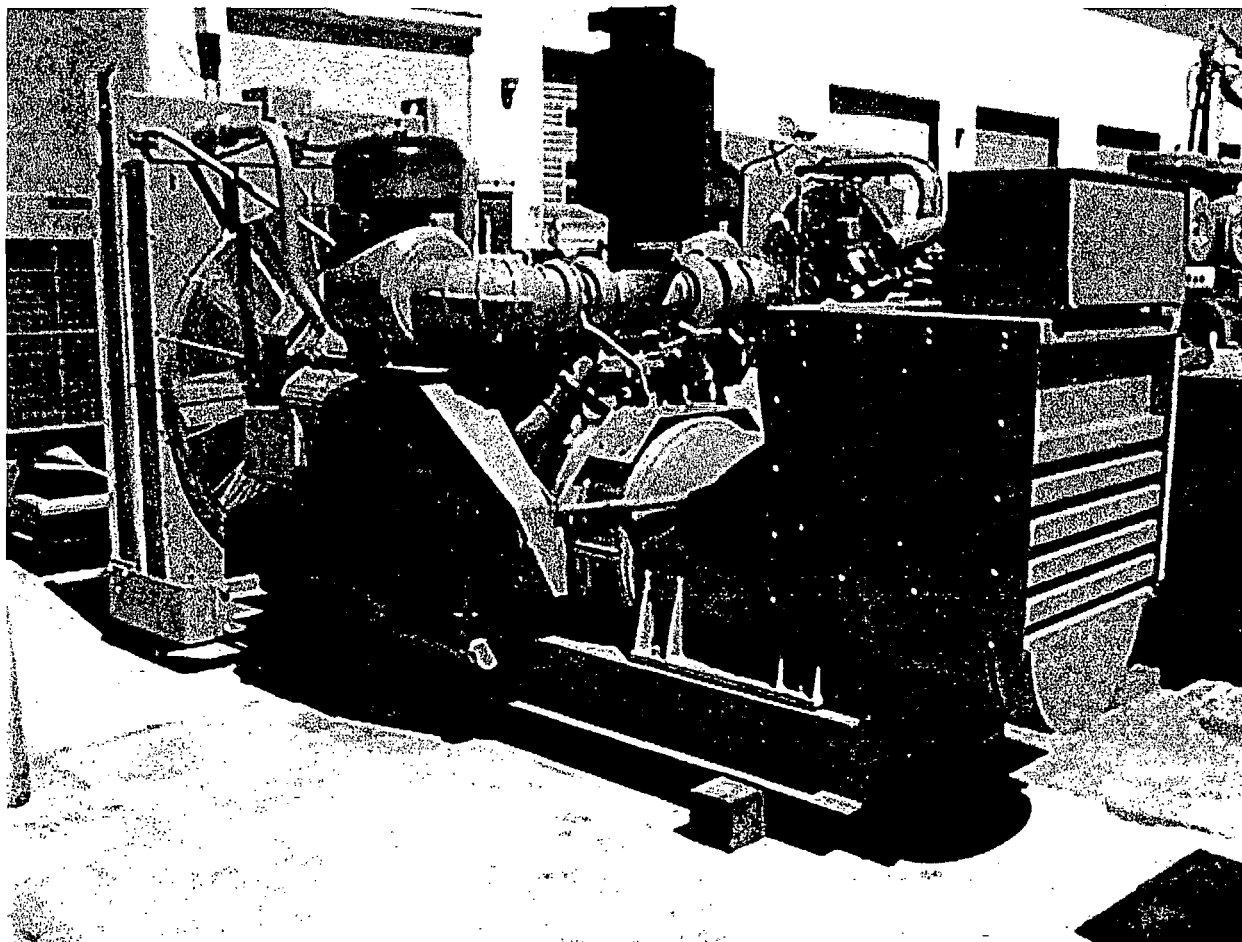
Base Plate Length	56' 6"	(17.22 m)
Base Plate Width	13' 6"	(4.11 m)
Enclosure Height	14' 6"	(4.42 m)
Overall Length	56' 9"	(17.30 m)
Overall Width*	49' 9"	(15.16 m)
Overall Height*	36' 2"	(11.02 m)
Base Plate Foundation Load*	476,000 lb	(214,200 kg)



	Power kW	Heat Rate Btu/kWh LHV	Heat Rate kJ/kWh LHV	No. Shafts	Pressure Ratio	Shaft Speed rpm	Exhaust Flow lb/s	Exhaust Flow kg/s	Exhaust Temp. °F	Exhaust Temp. °C
LM6000PC SPRINT*	50080	8434	8916	2	30.9	3600	295	134	826	441
LM6000PC	43417	8112	8549	2	29.1	3600	281	127	831	444
LM6000PD SPRINT	46824	8235	8688	2	30.7	3600	290	131	837	447
LM6000PD	42336	8308	8765	2	29.3	3600	278	126	846	452
LM6000PD (liquid fuel)	40212	8415	8878	2	28.1	3600	268	122	857	458
LM2500PK	30676	8834	9300	2	23.6	3600	192	87.1	958	514
LM2500PV	30463	8854	9069	2	22.6	6100	186	84.3	931	499
LM2500PH**	27763	8391	8775	2	20.2	3600	167	75.9	926	497
LM2500PE	22719	9311	9789	2	19.1	3600	153	69.4	992	533

TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

The emergency diesel generator will likely appear as follows (Caterpillar 3412TA):



4.1 MAXIMUM POTENTIAL TO EMIT

The following table summarizes the maximum potential to emit (PTE) for the subject project without controls:

Pollutant	PSD Threshold (TPY)	CT Emission Rate (lb/hr)		Annual CT Emissions (lb/year)	Tons per year for 2 CT's	Emergency Generator TPY	TPY Total	PSD Applies?
		OIL	GAS					
NO _x	40	72.9	43.1	370,904	370.8	1.62	372.4	Yes
CO	100	15.8	43.2	142,688	142.7	0.62	143.3	Yes
SO ₂	40	10.31	1.13	43,319	43.4	0.04	43.4	Yes
PM ₁₀	15	14.94	2.45	64,268	64.2	0.04	64.2	Yes
VOC	40	4.43	1.78	20,995	21	0.24	21.2	No
SAM	7	9.66	1.15	40,756	40.8	Neg.	40.8	Yes

Note: Assumed 4000 hours of oil operation and 1840 hours of natural gas operation.

In summary, a PSD Review and BACT Determination are required for NO_x, CO, SO₂, SAM and PM₁₀. Additionally, the LM6000's are subject to the NESHAP (which is currently "stayed") for which a MACT based standard of 91 ppb exists. The applicant suggests that the AP-42 formaldehyde emission factor (3,100 lb/10¹² Btu for all loads) is inappropriate and recommends a value which is approximately 10% of that value. Given the

TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

conservative nature of a PSD and MACT analysis, the Department finds inadequate reason to reject the higher (3,100 lb/10¹²) emission factor and has applied it within its analysis, resulting in an uncontrolled formaldehyde emission rate of approximately 1.38 lb/hr.

4.2 APPLICANT'S PROPOSAL

NO_x: The applicant provided a vendor estimate of a packaged SCR/Oxidation Catalyst system (including Direct Installation Cost, or DAC) of \$2.48M. Based upon information from the supplier, the City has indicated that 60% of this cost is required for the SCR system and the remaining 40% for the OC system. Accordingly, total capital costs are calculated at \$1.49M for the installation of a high temperature SCR. Although the Department does not completely accept the analysis of cost effectiveness the applicant has estimated it at \$6700 per ton of NO_x removed (based upon 4000 hours of annual oil operation) which is acceptable.

CO: The applicant indicated that since the NESHAP applies to this application, an oxidation catalyst is proposed. As a result, the applicant did not calculate cost-effectiveness for purposes of BACT. However, the capital costs including direct installation are 40% of the SCR/OC system or \$990k, and the CO removed will be 26 TPY per CT.

PM₁₀: 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."

SO₂/SAM: The applicant indicates that fuel quality is the only technically feasible method of controlling SO₂ and SAM emissions. As a result, the applicant contends that pipeline natural gas and 0.05% sulfur distillate represent BACT.

4.3 SUMMARY OF APPLICANT'S PROPOSAL AFTER CONTROLS

Pollutant	PSD Threshold (TPY)	CT Emission Rate (lb/hr)		Annual CT Emissions (lb/year)	Tons per year for 2 CT's	Emergency Generator TPY	TPY Total	PSD Applies?
		OIL	GAS					
NO _x	40	8.67	8.62	50,541	50.5	1.62	52.2	Yes
CO	100	6.35	6.27	36,937	36.9	0.62	37.5	No
SO ₂	40	10.31	1.13	43,319	43.4	0.04	43.4	Yes
PM ₁₀	15	14.94	2.45	64,268	64.2	0.04	64.2	Yes
VOC	40	2.66	1.79	13,934	13.9	0.24	14.1	No
SAM	7	9.66	1.15	40,756	40.8	Neg.	40.8	Yes

Note: Assumed 4000 hours of oil operation and 1840 hours of natural gas operation.

The Department will make a determination of BACT for NO_x, PM₁₀ and SO₂/SAM.

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.

TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

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 first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically unfeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

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_x @ 15% O₂ (assuming 25 percent efficiency) and 150 ppmvd SO₂ @ 15% O₂ (or <0.8% sulfur in fuel). The BACT proposed by the City of Tallahassee is well within the NSPS limit.

5.1 NO_x CONTROL

Much has been made through the years of the detrimental effects of combusting liquid fuels and the corresponding application of SCR. Often-times, applicants will cite either the limited domestic experience which is available, or the removal of an SCR at the PREPA project in San Juan, Puerto Rico (see: <http://www.epa.gov/Region2/news/2000/00048.htm>). Conversely, the Department has long been aware of the successful application of SCR on liquid fired applications in Japan and Europe, as well as the documentation available by such organizations as the European Power Plant Suppliers Association (see: http://www.epps.org/BAT_LCP/BAT_LCP_Draft_2/BAT_LCP_Draft_2_CH_06.pdf) and the European Integrated Pollution Prevention and Control Bureau (see: <http://www.eel.nl/index9.htm>). Furthermore, consultants which have been hired by the Department confirm that the application of SCR is now commercially available and likely cost-effective for nearly any fuel, including synthetic gas (syngas) whether generated from coal, petroleum products or even biomass; MSW, kerosene, naphtha or even biomass, presuming that the flue gas characteristics can be adequately defined.

For this project, the applicant provided a vendor estimate of \$1.49M (which included the Direct Installation Cost, or DAC) for the installation of a high temperature SCR. Considering all other potential expenses, a total annualized cost of \$1.08M at an annual removal of 160 TPY of NO_x was estimated. The TPY was based upon reducing NO_x from 42 ppmvd while firing oil (the predominant fuel) and from 25 ppmvd while firing gas to 5 ppm for either fuel. The overall cost effectiveness is well below \$10,000 per ton of NO_x, and therefore properly considered as reasonable. The Department concurs with the applicant's proposal and agrees that a reduction of NO_x by 90% (from 42 ppm to 5 ppm) for firing distillate oil represents BACT. In this regard, the Department sees no reason to believe that the application of an SCR will yield NO_x emissions while firing natural gas any higher than 3.5 ppmvd (an 85% reduction from 25 ppm), but due to the limited *state-wide* experience with high-temperature SCR, the requested BACT emission rate of NO_x (5 ppmvd) for natural gas as well as an ammonia slip rate of 10 ppmvd will be allowed.

5.2 PM₁₀ CONTROL

PM₁₀: 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 that the combustion of clean fuels is BACT for this combustion turbine.

5.3 SO₂/SAM CONTROL

SO₂/SAM: The applicant indicates that fuel quality is the only technically feasible method of controlling SO₂ 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 SO₂ emission (PTE) of this project (43.3 TPY), 0.05% sulfur oil and pipeline natural gas are accepted as BACT for this project.

TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

6. AIR QUALITY IMPACT ANALYSIS

6.1 INTRODUCTION

The proposed project will increase emissions of four pollutants at levels in excess of PSD significant amounts: NO_x, PM₁₀ and SO₂ and sulfuric acid mist (SAM). NO_x, PM₁₀ and SO₂ are criteria pollutants and have national and state ambient air quality standards (AAQS), PSD increments, and significant impact levels defined for them. There are no applicable PSD increments, AAQS or *de minimus* monitoring levels for SAM; the BACT determination will limit maximum potential SAM emissions.

The applicant's initial NO_x, PM₁₀ and SO₂ air quality impact analyses for this project predicted no significant impacts in the Class II area in the vicinity of the project; therefore, further applicable AAQS and PSD increment impact analyses for these pollutants were not required in the vicinity of the project. The nearest PSD Class I areas are the Bradwell Bay and St. Marks National Wilderness Areas (NWA) located approximately 28 and 38 km, respectively from the project site. The applicant's PSD Class I air quality analysis showed no significant impacts due to the project. Therefore, a cumulative PSD Class I increment analysis was not required for these pollutants. Also, the maximum predicted impacts for all pollutants were below their respective *de minimus* ambient impact levels. Therefore, pre-construction monitoring at the proposed site was not required for this project. Based on the preceding discussion the air quality analyses required by the PSD regulations for this project are the following:

- A significant impact analysis for NO_x, PM₁₀ and SO₂;
- A significant impact analysis for PM₁₀, SO₂, and NO₂ in the Bradwell Bay and St Marks NWA;
- An analysis of impacts on soils, vegetation, visibility, and of growth-related air quality modeling impacts.

Based on these required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, 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.

6.2 MODELS AND METEOROLOGICAL DATA USED

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project in the Class II area in the vicinity of the project, and in the portions of the Bradwell Bay and St. Marks NWA PSD Class I areas less than 50 km from the proposed facility. 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 satisfy 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 National Weather Service (NWS) stations at Tallahassee and Apalachicola, Florida (surface and upper air data). The 5-year period of meteorological data was from 1986 through 1990. These NWS stations were selected for use in the study because they are the closest primary weather stations to the study area and are most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

For determining potential plume visibility effects in the portions of the St. Marks NWA that are within 50 km of the project, the VISCREEN model was used. The VISCREEN model can be used to calculate potential plume impact of specific pollutant emissions for specific transport and meteorological dispersion conditions.

Since portions of the Bradwell Bay and St. Marks NWA PSD Class I areas are greater than 50 km from the proposed facility, long-range transport modeling was required for the Class I increment impact assessment and for regional haze and nitrogen and sulfur deposition impacts. The California Puff (CALPUFF) dispersion model, Version 5.7 (EPA, 2003) was used to evaluate the potential impact of the proposed pollutant emissions on the PSD Class I increments. 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.

6.3 AMBIENT MONITORING REQUIREMENTS

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. When available, the use of existing representative monitoring data may satisfy the monitoring requirement. An exemption to the monitoring requirement may be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimus concentration. The table below shows that predicted ambient impacts from the power plant are substantially less than the respective de minimus levels; therefore, preconstruction ambient air quality monitoring is not required for any pollutant.

**PREDICTED MAXIMUM AIR QUALITY IMPACTS FROM THE PROJECT
COMPARED TO THE DE MINIMIS AMBIENT IMPACT LEVELS**

Pollutant	Averaging Time	Max Predicted Impact ($\mu\text{g}/\text{m}^3$)	De Minimus Level ($\mu\text{g}/\text{m}^3$)	Impact Greater Than De Minimus?
PM ₁₀	24-hour	2	10	No
NO ₂	Annual	0.05	14	No
SO ₂	24-hour	1	13	No

6.4 SIGNIFICANT IMPACT ANALYSIS

Initially, the applicant conducts modeling using only the proposed project's emissions at worst load conditions. In order to determine worst load conditions the ISCST3 model was used to evaluate dispersion of emissions from the simple cycle facility for three loads (50, 75% and 100%) and three seasonal operating conditions (summer, winter, and average) for each fuel type. Once the worst-case loads are identified, the applicant utilizes the ISCST3 model to evaluate impacts at these loads, and compares the results to the significant impact levels. If modeling at worst load conditions shows significant impacts, additional multi-facility modeling is required to determine the project's impacts on existing air quality and any applicable AAQS or PSD increments.

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Receptors were placed around the facility, which is located in a PSD Class II area. The receptor grid for predicting maximum concentrations in the vicinity of the project was a discrete receptor grid that extended along the property boundary and out to 10 km. Receptor spacing along the property boundary was 50 m. For each pollutant subject to PSD and also subject to PSD increment and/or AAQS analyses, this modeling compares maximum predicted impacts due to the project with PSD significant impact levels to determine whether significant impacts due to the project are predicted in the vicinity of the facility. For the Class I analysis, the maximum concentrations were predicted by CALPUFF modeling at 233 receptors in the Bradwell Bay and St. Marks NWA PSD Class I areas. These receptors have been provided by the federal land manager. The table below shows the results of the significant impact modeling.

**MAXIMUM PROJECT AIR QUALITY IMPACTS FOR COMPARISON TO THE
PSD CLASS II SIGNIFICANT IMPACT LEVELS IN THE VICINITY OF THE FACILITY**

Pollutant	Averaging Time	Max. Predicted Impact (ug/m ³)	Significant Impact Level (ug/m ³)	Significant Impact?
SO ₂	Annual	0.05	1	NO
	24-hour	1	5	NO
	3-hour	5	25	NO
PM ₁₀	Annual	0.1	1	NO
	24-hour	2	5	NO
NO ₂	Annual	0.05	1	NO

**MAXIMUM PROJECT AIR QUALITY IMPACTS FOR COMPARISON TO
THE PSD CLASS I SIGNIFICANT IMPACT LEVELS ST.MARKS AND BRADWELL BAY NWA**

Pollutant	Averaging Time	Max. Predicted Class I Impact Area (ug/m ³)	Proposed EPA Significant Impact Level (ug/m ³)	Significant Impact?
SO ₂	Annual	0.01	0.1	NO
	24-hour	0.12	0.2	NO
	3-hour	0.35	1.0	NO
PM ₁₀	Annual	0.02	0.2	NO
	24-hour	0.18	0.3	NO
NO ₂	Annual	0.01	0.1	NO

The results of the significant impact modeling show that there are no significant impacts predicted due to the emissions from this project.

6.5 ADDITIONAL IMPACTS ANALYSIS

Impacts on Soils, Vegetation, and Wildlife

Very low emissions are expected from these natural gas-fired/low sulfur fuel oil combustion turbines in comparison with a conventional power plant generating equal power. Emissions of acid rain and ozone precursors will be very low. The maximum ground-level concentrations predicted to occur for SO₂, PM₁₀, CO and NO_x, 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 less than the significant impact levels, which are in

TECHNICAL EVALUATION AND PRELIMINARY BACT DETERMINATION

turn 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 maximum predicted total nitrogen and sulfur depositions predicted for the project in the Bradwell Bay and St. Marks NWA are less than the federal land manager's recommended significant impact levels.

Impact on Visibility

Natural gas and low sulfur distillate fuel oil are clean fuels and produce little ash. This will minimize smoke formation. The low NO_x and SO₂ emissions will also minimize plume opacity. Because no add-on control equipment and no reagents are required, there will be no steam plume or tendency to form ammoniated particulate species.

A regional haze analysis that used the CALPUFF modeling system was performed and showed a maximum predicted change in visibility, which is less than the NPS threshold of 5%. Therefore, the proposed project is not predicted to have an adverse impact on visibility and regional haze in the St. Marks NWA.

Growth-Related Air Quality Impacts

There will be short-term increases in the labor force to construct the project. These temporary increases will not result in significant commercial and residential growth in the vicinity of the project. Operation of the additional unit will require few new permanent employees, which will cause no significant impact on the local area.

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

DRAFT

PERMITTEE:

City of Tallahassee.
Arvah B. Hopkins Generating Station
1125 Geddie Road
Tallahassee, FL 32310

Authorized Representative:

Mr. Robert E. McGarrah
Production Superintendent

ARMS Permit No.	0730003-005-AC
PSD Permit No.	PSD-FL-343
Facility ID No.	0730003
SIC No.	4911
Expires:	July 31, 2006 [PA 74-03]

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 two simple cycle, inlet-chilled combustion turbines, complete with electrical generator sets. The gas turbines are capable of producing a nominal 100 MW of electricity. This project additionally authorizes the installation of a 750 KW (or smaller) emergency generator set to be fired on distillate oil.

The project will be located at the Arvah B. Hopkins Station, located approximately 7 miles west of downtown Tallahassee and 25 miles north of the St. Marks NWR, a Class I Area. UTM coordinates for this facility are Zone 16; 749.53 km E; 3371.7 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

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 two new electric power generators capable of providing a nominal 100 MW of electrical power.

NEW EMISSIONS UNITS

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

Emissions Unit No.	Emissions Unit Description
031 - 032	General Electric LM 6000 Sprint Combustion Turbines with inlet chilling to 48°F
033	750KW Emergency Diesel Generator

REGULATORY CLASSIFICATION

HAPs: This facility is a major source of hazardous air pollutants (Title III).

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_x, PM₁₀ and SO₂/SAM 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 and is therefore not subject to BACT.

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.

NESHAP: The combustion turbines are also subject to 40 CFR 63, Subpart YYYYY, compliance with which has currently been stayed.

RELEVANT DOCUMENTS

- Permit application received on 08/13/04
- Intent to Issue Permit package mailed on 09/09/04
- Public Notice published in _____ on xx/xx/xx
- Proof of publication received yy/yy/yy

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 Northwest District Office, Florida Department of Environmental Protection, 160 Governmental Center, Pensacola, Florida 32502-5794. The phone number is 850/595-8300 and the fax number is 850/595-4417.
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 52, 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. [40 CFR 52.21(r)(2)]
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. and 40 CFR 52.166(j)(4)]
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]

SECTION II. ADMINISTRATIVE REQUIREMENTS

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.]

13. Exemption for Emergency Generators: One or more emergency generators located within a single facility {are exempt from permitting} provided:
- a. None of the emergency generators is subject to the Federal Acid Rain Program; and
 - b. Total fuel consumption by all such emergency generators within the facility is limited to 32,000 gallons per year of diesel fuel, 4,000 gallons per year of gasoline, 4.4 million standard cubic feet per year of natural gas or propane, or an equivalent prorated amount if multiple fuels are used.

Additionally, an emissions unit or pollutant-emitting activity that is not entitled to a categorical exemption pursuant to paragraph 62-210.300(3)(a), F.A.C., shall be exempt from the permitting requirements of this chapter, Chapters 62-212 and 62-4, F.A.C., if it meets all of the following criteria:

- a. It would be subject to no unit-specific applicable requirement.
- b. It would neither emit nor have the potential to emit:
 - (i) 500 pounds per year or more of lead and lead compounds expressed as lead;
 - (ii) 1,000 pounds per year or more of any hazardous air pollutant;
 - (iii) 2,500 pounds per year or more of total hazardous air pollutants; or
 - (iv) 5.0 tons per year or more of any other regulated pollutant.
- c. Its emissions, in combination with the emissions of other units and activities at the facility, would not cause the facility to emit or have the potential to emit any pollutant in such amount as to make the facility a Title V source.
- d. In the case of a proposed new emissions unit at an existing facility, the emissions of such unit, in combination with the emissions of any other proposed new or modified units and activities at the facility, would not result in a modification subject to the preconstruction review requirements of subparagraph 62-204.800(10)(d)2., Rule 62-212.400 or 62-212.500, F.A.C.
- e. In the case of a proposed new pollutant-emitting activity, such activity would not constitute a modification of any existing non-exempt emissions unit at a non-Title V source or any existing non-insignificant emissions unit at a Title V source.

[Rule 62-210.300(3)(a)20 and Rule 62-210.300(3)(b)1, 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
031 - 032	General Electric LM 6000 Sprint Combustion Turbines with inlet chilling to 48°F

APPLICABLE STANDARDS AND REGULATIONS

1. BACT Determinations: The emission unit addressed in this section is subject to a Best Available Control Technology (BACT) determination for nitrogen oxides (NO_x), sulfur dioxide (SO₂), sulfuric acid mist (SAM) and particulate matter (PM₁₀). [Rule 62-212.400, F.A.C.]
2. NSPS Requirements: The combustion turbine 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 two new inlet chilled combustion turbines with electrical generator sets (General Electric Model LM6000PC SPRINT). Each unit is designed to produce approximately 50 MW of electrical power. [Applicant Request]
4. Permitted Capacity: The heat input to the combustion turbine from firing natural gas shall not exceed 445 MMBtu per hour based on the following: 100% base load, a lower heating value (HHV) for natural gas and a compressor inlet air temperature of 29° F. The heat input to the combustion turbine from firing No. 2 fuel oil shall not exceed 434 MMBtu per hour based on the following: 100% base load and a compressor inlet air temperature of 29° 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 ambient conditions and the combustion turbine characteristics. [Design, Rule 62-210.200, F.A.C. (Definition - PTE)]
5. Simple Cycle, Intermittent Operation: The 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 shall 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: The combustion turbine shall only be fired with pipeline-quality natural gas containing no more than 2 grams 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: The combustion turbine shall operate no more than 5840 hours during any consecutive 12-month period, 4000 of which may be on distillate fuel oil. The permittee shall install, calibrate, operate and maintain a monitoring system to measure and accumulate the amount of natural gas as well as fuel oil fired and the hours of operation. [Rule 62-212.400, F.A.C. (BACT); 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 turbine 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 Technology: The permittee shall install, calibrate, tune, operate, and maintain a water injection system for the unit. The system shall be designed and operated so as to ensure that NO_x emissions prior to the SCR do not exceed 42 ppmvd @15% O₂ while firing fuel oil. [Applicant request; Rule 62-4.070(3); Rule 62-212.400, F.A.C. (BACT)]
12. SCR/Oxidation Catalyst: To control NO_x and CO emissions, the combustion turbine shall include an SCR system, complete with an oxidation catalyst. The catalyst systems shall be designed in order to achieve the following emissions, regardless of fuel being combusted: 5 ppmvd NO_x @ 15% O₂ and 6 ppmvd CO @ 15% O₂. [Design and Rule 62-212.400, F.A.C.]
13. 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

14. Summary: The following table summarizes the emissions standards and totals specified in this permit.

Pollutant	Emission Standard	CT Emissions (lb/hr)		One CT (lb/year)	TPY for 2 CT's
		OIL	GAS		
NO _x	5 ppmvd @ 15% O ₂	8.67	8.62	50,541	50.5
CO	6 ppmvd @ 15% O ₂	6.35	6.27	36,937	36.9
SO ₂	pipeline NG & 0.05% oil	10.31	1.13	43,319	43.4
PM ₁₀	VE	14.94	2.45	64,268	64.2
VOC	3 ppmvd @ 15% O ₂	2.66	1.79	13,934	13.9
SAM	lb/hr rates →	9.66	1.15	40,756	40.8

Note: Annual emissions are based on 4000 hours of oil operation and 1840 hours of natural gas operation.

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

15. Carbon Monoxide (CO):

CO emissions from the combustion turbine shall not exceed 6.0 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, F.A.C. (PSD Avoidance)]

16. Nitrogen Oxides (NO_x):

NO_x emissions from the combustion turbine shall not exceed 5.0 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 20 and based on a 24-hour block average for data collected from the continuous emissions monitor. The ammonia slip rate shall be limited to 10 ppmvd @ 15% O₂. [Rule 62-212.400, F.A.C. (BACT)]

17. Particulate Matter (PM/PM₁₀), Sulfuric Acid Mist (SAM) and Sulfur Dioxides (SO₂)

(a) Fuel Specifications. Emissions of PM, PM₁₀, SAM, and SO₂ shall be limited by the use of pipeline-quality natural gas containing no more than 2 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 the combustion turbine shall not exceed 10% opacity, based on a 6-minute average. This work practice standard is established as a means of ensuring the non-applicability of BACT. 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)]

18. Volatile Organic Compounds (VOC):

VOC emissions from the combustion turbine shall not exceed 3.0 ppmvd corrected to 15% oxygen for each fuel. The VOC emissions shall be measured and reported in terms of methane. The permittee shall demonstrate compliance with these standards by conducting initial tests in accordance with EPA Methods 25 and/or 25A and the performance testing requirements of this permit. Optional testing in accordance with EPA Method 18 may be conducted to account for the actual methane fraction of the measured VOC emissions. [Application, Design, Rule 62-4.070(3), F.A.C.]

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_x 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 up to 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. 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. [Design; Rules 62-210.700(1), (5), and 62-4.130, F.A.C.]

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

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 20 - Determination of Oxides of Nitrogen Oxide, Sulfur Dioxide and Diluent Emissions from Stationary Gas Turbines;
 - (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 SlipNo 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 permitted capacity, but not later than 180 days after initial operation of the emissions unit. Initial performance tests shall be conducted for CO, NO_x, VOC, ammonia slip and visible emissions while combusting each fuel. Initial NO_x 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_x, CO, ammonia slip and visible emissions from the combustion turbine for each fuel. If conducted at permitted capacity, NO_x emissions data collected during the annual NO_x 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 1st to September 30th). In the event that the operation of the CT is less than 400 hours per year on the back-up fuel (natural gas), annual testing on natural gas is not required for that year. [Rule 62-297.310(7)(a), 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_x, VOC, ammonia slip and visible emissions from the combustion turbine. 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 Substantial Modifications: All performance tests required for initial startup shall also be conducted after any substantial modification and appropriate shake-down period of air pollution control equipment. Shakedown periods shall not exceed 100 days after re-starting the combustion turbine. [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

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

stationary gas turbines. Other required performance tests for compliance with standards specified in this permit shall be conducted with the 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_x CEMS: The permittee shall install, calibrate, operate, and maintain a CEMS to measure and record NO_x and oxygen concentrations in the combustion turbine exhaust stack. A monitor for carbon dioxide may be used

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

in place of the oxygen monitor, but the system shall be capable of correcting the emissions to 15% oxygen. The NO_x monitoring devices shall comply with the certification requirements, quality assurance procedures, and all other provisions of Performance Specifications 2 and 3 as defined in Appendix B of 40 CFR 60 and the Acid Rain monitoring requirements of 40 CFR Part 75. 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_x 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 Appendix F of 40 CFR 60.
- (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, and zero 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 limit for natural gas specified in this permit by maintaining records of the sulfur content of the natural gas being supplied for each month of operation. Methods for determining the sulfur content of the natural gas shall be ASTM methods D4084-82, D3246-81 or equivalent methods. These methods shall be used to determine the sulfur content of the natural gas fired in accordance with any EPA-approved custom fuel monitoring schedule or natural gas supplier data or the natural gas sulfur content referenced in 40 CFR 75 Appendix D. The analysis may be performed by the permittee, a service contractor retained by the permittee, the fuel vendor, or any other qualified agency pursuant to 40 CFR 60.335(e). However, the permittee is responsible for ensuring that the procedures in 40 CFR 60.335 or 40 CFR 75 are used to determine the fuel sulfur content for compliance with the 40 CFR 60.333 SO₂ standard. [Rules 62-4.070(3) and 62-4.160(15), F.A.C.]
- 37. Alternate Monitoring Plan: Subject to EPA approval, the following alternate monitoring may be used to demonstrate compliance.

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

- (a) When requested by the Department, the CEMS emission rates for NO_x on this unit shall be corrected to ISO conditions to demonstrate compliance with the NO_x standard established in 40 CFR 60.332.
 - (b) Data collected from the NO_x CEM shall be used to report excess emissions in accordance with 40 CFR 60.334(c)(1) of NSPS, Subpart GG.
38. 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 the combustion turbine. 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. All hours of operation shall be included in the demonstration of compliance with the 12-month fuel usage limitations. 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

39. 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.].
40. Quarterly Excess Emissions Reports: If excess NO_x 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, 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 quarter, the permittee shall submit a report on any periods of excess emissions that occurred during the previous calendar quarter to the Compliance Authority. [Rules 62-4.130, 62-204.800, 62-210.700(6), F.A.C., and 40 CFR 60.7]
41. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

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

- 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]

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.

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<p>■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p>	<p>A. Signature <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>X </p>
<p>1. Article Addressed to:</p> <p>Mr. Robert E. McGarrah Manager Power Production, City of Tallahassee 2602 Jackson Bluff Road Tallahassee, Florida 32304</p>	<p>B. Received by (Printed Name) _____</p> <p>C. Date of Delivery _____</p>
<p>2. Article Number</p> <p>(Transfer from service label) 7000 1670 0013 3110 3303</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>
<p>Domestic Return Receipt 102595-02-M-1540</p>	

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Sept To Mr. Robert E. McGarrah, Manager

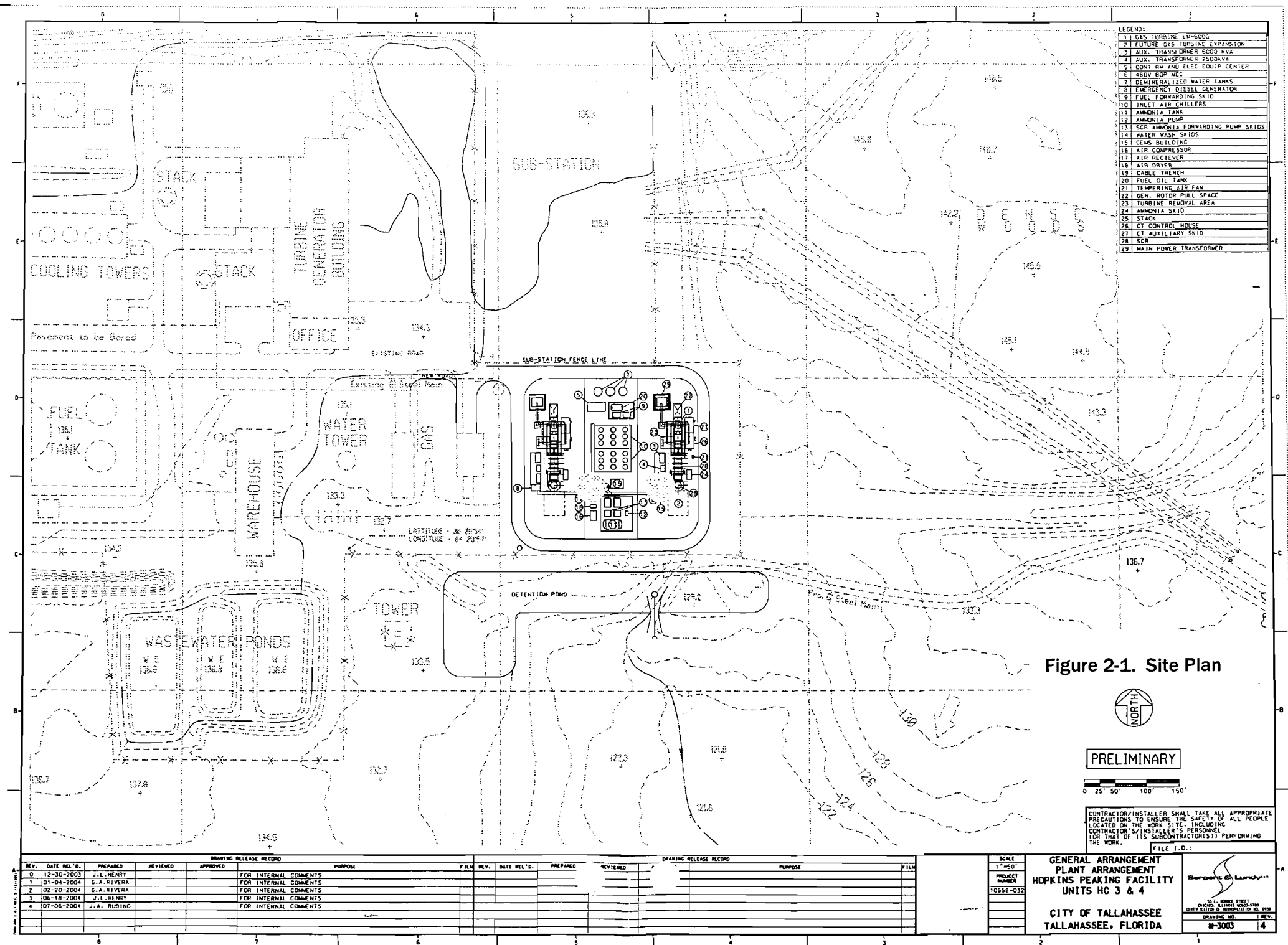
Power Production, City of Tallahassee

2602 Jackson Bluff Road

Tallahassee, Florida 32304

PS Form 3800, May 2000

See Reverse for Instructions





0 Jeb Bush
Governor

Department of Environmental Protection

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

Colleen M. Castille
Secretary

August 18, 2004

Mr. Gregg M. Worley, Chief
Air Permits Section
U.S. EPA, Region 4
61 Forsyth Street
Atlanta, Georgia 30303-8960

RE: City of Tallahassee
Arvah B. Hopkins Generating Station
0730003-005-AC, PSD-FL-343

Dear Mr. Worley:

Enclosed for your review and comment is a PSD application submitted by the City of Tallahassee to construct two combustion turbines at the Hopkins Generating Station, in Tallahassee, Leon County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/921-9533. If you have any questions, please contact me at 850/921-9515.

Sincerely,

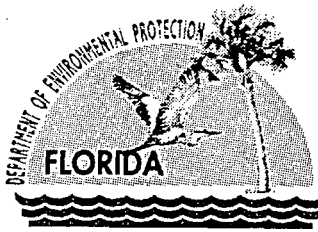
Patricia Adams
for James K. Pennington, P.E.
Administrator
North Permitting Section

JKP/pa

Enclosure

"More Protection, Less Process"

Printed on recycled paper.



Jeb Bush
Governor

Department of Environmental Protection

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

David B. Struhs
Secretary

August 18, 2004

Mr. John Bunyak, Chief
Policy, Planning & Permit Review Branch
NPS – Air Quality Division
12795 W. Alameda Parkway
Lakewood, Colorado 80228

RE: City of Tallahassee
Arvah B. Hopkins Generating Station
0730003-005-AC, PSD-FL-343

Dear Mr. Bunyak:

Enclosed for your review and comment is a PSD application submitted by the City of Tallahassee to construct two combustion turbines at the Hopkins Generating Station, in Tallahassee, Leon County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/921-9533. If you have any questions, please contact me at 850/921-9515.

Sincerely,

Patty Adams

for

James K. Pennington, P.E.
Administrator
North Permitting Section

JKP/pa

Enclosure

"More Protection, Less Process"

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March 28, 2006

Certified Mail No.: 70041160000059423907

RECEIVED

MAR 30 2006

BUREAU OF AIR REGULATION

Trina Vielhauer
Chief, Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road, M.S. 5000
Tallahassee, Florida 32399

Re: Request to Perform Supplemental Air Testing
Combustion Turbine Unit Nos. HC3 (EU-031) and HC4 (EU-032)
Arvah B. Hopkins Electric Generating Station
Air Construction Permit No. 0730003-005-AC

Dear Ms. Vielhauer:

It was a pleasure speaking with you on March 15, 2006, regarding oxides of nitrogen (NOx) levels associated with operation of the Arvah B. Hopkins Electric Generating Station Combustion Turbine Unit Nos. HC3 (EU-031) and HC4 (EU-032). In accordance with our telephone conversation, the City of Tallahassee (City) is requesting authorization to perform additional testing for purposes of improving the performance of the above referenced turbines.

As you are aware, the City has been working closely with Deltak, the manufacturer of the Selective Catalytic Reduction (SCR) system, through General Electric, to fine tune the SCR system in an effort to further reduce the levels of NOx emitted.

General Electric has recently submitted a proposal to the City to perform this additional testing (*see attached*). The testing will result in the addition of four ammonia injection curves to the SCR control system, and add the turbine operation status signals from the turbine control panel. Upon completion, the SCR should be able to choose between the four curves based on such operating factors as the fuel type and whether the Sprint water injection system has been activated.

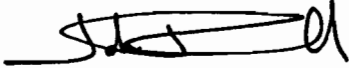
The on-site testing is scheduled to take place over a period of approximately two weeks. During this two week period, levels of NOx above applicable permitted limits may be experienced for short durations of time. The City will take all reasonable precautions to minimize the duration of this supplemental air testing and associated elevated NOx levels. The City will notify the Florida Department of Environmental Protection (Department) at least seven days in advance of the start of the proposed testing.

An additional two weeks of in-house programming must be completed prior to initiation of the field testing work being proposed. The City has recently released General Electric to begin the in-house programming work. Upon receipt of the Department's concurrence, the City will authorize General Electric to begin the proposed field testing work.



Thank you again for your assistance with this matter. Please do not hesitate to contact me at (850) 891-8851, if you have any questions or would like additional information regarding this proposal.

Sincerely,

A handwritten signature in black ink, appearing to read 'John K. Powell', with a stylized flourish at the end.

John K. Powell, P.E.

Attachment

cc: Jeff Koerner, FDEP
Greg DeAngelo, FDEP
Sandra Veazey, FDEP
Rick Bradburn, FDEP
Rob McGarrah, COT
Triveni Singh, COT
Phil Bucci, COT
Karl Bauer, COT
Cyrinda DeMontmollin, COT
Jennette Curtis, COT

GE Energy

RECEIVED
CITY OF TALLAHASSEE



Sandra Nickerson
Sr. Project Manager
Project Execution

06 MAR 24 AM 11:21

ELECTRIC UTILITIES ()
GAS UTILITIES ()
WATER UTILITIES ()

GE Energy
Aero Energy
16415 Jacintoport Blvd.
Houston, TX 77015
Tel. 281-864-2712 DC 8*326-2712
Fax 281-864-2116
E-mail: Sandra.nickerson@ge.com

March 22, 2006

Subject: Work Scope for Re-tuning SCR

Dear Mr. McGarrah:

Work Scope

The following details the proposal for improvement for the Hopkins Generating Station Units HC-3 and HC-4.

Deltak proposes to provide additional ammonia injection curves to the SCR control, and add the turbine operation status signals from the turbine control panel. The SCR control system will choose between the various curves based on turbine operating conditions. The ammonia injection at each point on the curve would be programmed based on turbine power level. Ramp rate tuning will take place after the curves are established. This would insure that ammonia injection closely followed the curves and the PID control only "trimmed" the injection level, resulting in faster response to operating changes.

The additional points on the curves will improve SCR response based on turbine operation on gas fuel, liquid fuel with and without enhanced sprint.

Schedule

The in-house reprogramming work can be complete in 2 weeks from notice to proceed.

The fieldwork is based on duration of two weeks from the start of site testing/plotting. We will need two weeks notice before the start of testing to coordinate the site work.

Qualifications:

Because these curves have not been implemented on this type of turbine with this operating design the final impact of these changes cannot be predicted with absolute certainty. But on past projects with a different turbine this method of correction has improved the range of control.

imagination at work

This SCR adjustment also represents a significant departure from Addendum #4 Information date August 20, 2003 and operation below 50% load is not part of the Contract guarantees.

The schedule is based on the site providing all the turbine operations and all other required items to operate at a steady state for all curves plot points within the two-week period from start to finish on both units. Emissions can be expected to exceed permit levels for short durations during the testing and implementation.

Regards,
GE PACKAGED POWER, INC

A handwritten signature in cursive script, reading "Sandra J. Nickerson".

Sandra J. Nickerson, P.E.
Sr. Project Manager

Cc: Stephanie Barth
Mark Hunt
Michael Phillips

Attach: NOTICE TO PROPOSERS, Addendum No.4

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
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1. Article Addressed to:
Mr. Robert E. McGarrah
Manager
Power Production, City of
Tallahassee
2602 Jackson Bluff Road
Tallahassee, Florida 32304

2. Article Number
(Transfer from service label)

7000 1670 0013 3110 3308

PS Form 3811, August 2001

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature  ☐ Agent
☒ Addressee

B. Received by (Printed Name) C. Date of Delivery

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

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

4. Restricted Delivery? (Extra Fee) ☐ Yes

U.S. Postal Service
CERTIFIED MAIL RECEIPT
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OFFICIAL USE

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$

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Sent To
Mr. Robert E. McGarrah, Manager
Power Production, City of Tallahassee
2602 Jackson Bluff Road
City, State, ZIP+4
Tallahassee, Florida 32304

PS Form 3800, May 2000

See Reverse for Instructions

7000 1670 0013 3110 3308

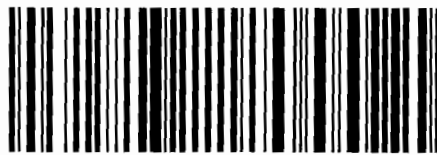
City of Tallahassee
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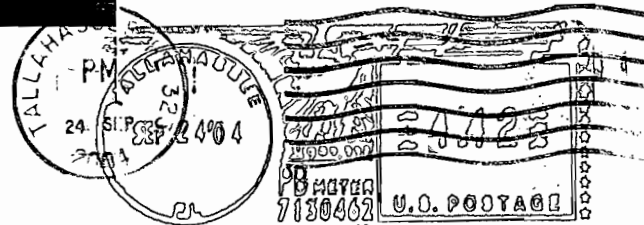
**RETURN RECEIPT
REQUESTED**

CERTIFIED MAIL



7001 0360 0002 0762 8585

Jim Pennington
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Mail Station #5505
Tallahassee, Florida 32399-2400



32399+2400



SENDER: COMPLETE THIS SECTION

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1. Article Addressed to:
Mr. Robert E. McGarrah
City of Tallahassee
Arvah B. Hopkins Generating
Station
1125 Geddie Road (C.R. 1585)
Tallahassee, Florida 32304

2. Article Number
(Transfer from service label)

PS Form 3811, August 2001

COMPLETE THIS SECTION ON DELIVERY

A. Signature

Robert E. McGarrah

☐ Agent

☒ Addressee

B. Received by (Printed Name)

C. Date of Delivery

10-28-04

D. Is delivery address different from item 1? ☐ Yes

If YES, enter delivery address below: ☐ No

3. Service Type

☒ Certified Mail

☐ Express Mail

☐ Registered

☐ Return Receipt for Merchandise

☐ Insured Mail

☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

7000 1670 0013 3109 8635

102595-02-M-1540

U.S. Postal Service**CERTIFIED MAIL RECEIPT**

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OFFICIAL USE

Postage \$

Certified Fee

Return Receipt Fee
(Endorsement Required)

Restricted Delivery Fee
(Endorsement Required)

Total Postage & Fees \$

Mr. Robert E. McGarrah

City of Tallahassee

1125 Geddie Road (C.R. 1585)

Tallahassee, Florida 32304

Arvah B. Hopkins Generating Station

PS Form 3800, May 2000

See Reverse for Instructions

5898 6078 ET00 0270 0000 7000

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

OFFICIAL USE

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$

Postmark
Here

Sent To	Mr. Robert R. McGarrah, Production
Street, Apt. or P.O. Box	Superintendent
City, State, ZIP+4	City of Tallahassee
	1125 Geddie Road

PS Form 3800, May 2002 See Reverse for Instructions

7000 1670 0013 3109 8448

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF FINAL PERMIT

In the Matter of an
Application for Permit by:


City of Tallahassee
Arvah B. Hopkins Generating Station
1125 Geddie Rd. (C.R. 1585)
Tallahassee, Florida 32304

DEP File No. 0730003-005-AC
Leon County

Enclosed is Final Permit Number 0730003-005-AC. This permit authorizes the City of Tallahassee to install two, General Electric LM6000 Turbine-Generator sets firing oil or natural gas, at the Arvah B. Hopkins Generating Station. This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order has the right to seek judicial review of it under section 120.68 of the Florida Statutes, by filing a notice of appeal under rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within thirty days after this order is filed with the clerk of the Department.

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 Notice of Final Permit (including the Final permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 10/26/04 to the person(s) listed:

Robert E. McGarrah, City of Tallahassee *
Jennette Curtis, C.P.M., City of Tallahassee
Gregg Worley, EPA
John Bunyak, NPS
Sandra Veazey, NWD
Gerry Neubauer, NWD
Ken Kosky, Golder
Hamilton S. Oven, DEP-Siting

Clerk Stamp

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



(Clerk)

10/26/04
(Date)



Jeb Bush
Governor

Department of Environmental Protection

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

Colleen M. Castille
Secretary

PERMITTEE:

City of Tallahassee.
Arvah B. Hopkins Generating Station
1125 Geddie Road
Tallahassee, FL 32310

Authorized Representative:

Mr. Robert E. McGarrah
Production Superintendent

ARMS Permit No.	0730003-005-AC
PSD Permit No.	PSD-FL-343
Facility ID No.	0730003
SIC No.	4911
Expires:	July 31, 2007
	[PA 74-03]

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 two simple cycle, inlet-chilled combustion turbines, complete with electrical generator sets. The gas turbines are capable of producing a nominal 100 MW of electricity. This project additionally authorizes the installation of a 750 KW (or smaller) emergency generator set to be fired on distillate oil.

The project will be located at the Arvah B. Hopkins Generating Station, located approximately 7 miles west of downtown Tallahassee and about 24 miles north of the Bradwell Bay NWA and about 17.5 miles north of the St. Marks NWA, PSD Class I Areas. UTM coordinates for this facility are Zone 16; 749.53 km E; 3371.7 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

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 two new electric power generators capable of providing a nominal 100 MW of electrical power.

NEW EMISSIONS UNITS

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

Emissions Unit No.	Emissions Unit Description
031 - 032	General Electric LM 6000 Sprint Combustion Turbines capable of inlet chilling to 48°F
033	750KW Emergency Diesel Generator

REGULATORY CLASSIFICATION

HAPs: This facility is a major source of hazardous air pollutants (Title III).

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_x, PM₁₀ and SO₂/SAM 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 and is therefore not subject to BACT.

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.

NESHAP: The combustion turbines may also subject to 40 CFR 63, Subpart YYYYY, compliance with which has currently been stayed.

RELEVANT DOCUMENTS

- Permit application received on 08/13/04
- Intent to Issue Permit package mailed on 09/09/04
- Public Notice published in Tallahassee Democrat on 09/19/04
- Proof of publication received 09/24/04

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 Northwest District Office, Florida Department of Environmental Protection, 160 Governmental Center, Pensacola, Florida 32502-5794. The phone number is 850/595-8300 and the fax number is 850/595-4417.
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]

SECTION II. ADMINISTRATIVE REQUIREMENTS

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.]
13. Exemption for Emergency Generators: One or more emergency generators located within a single facility {are exempt from permitting} provided:
- a. None of the emergency generators is subject to the Federal Acid Rain Program; and
 - b. Total fuel consumption by all such emergency generators within the facility is limited to 32,000 gallons per year of diesel fuel, 4,000 gallons per year of gasoline, 4.4 million standard cubic feet per year of natural gas or propane, or an equivalent prorated amount if multiple fuels are used.
- Additionally, an emissions unit or pollutant-emitting activity that is not entitled to a categorical exemption pursuant to paragraph 62-210.300(3)(a), F.A.C., shall be exempt from the permitting requirements of this chapter, Chapters 62-212 and 62-4, F.A.C., if it meets all of the following criteria:
- a. It would be subject to no unit-specific applicable requirement.
 - b. It would neither emit nor have the potential to emit:
 - (i) 500 pounds per year or more of lead and lead compounds expressed as lead;
 - (ii) 1,000 pounds per year or more of any hazardous air pollutant;
 - (iii) 2,500 pounds per year or more of total hazardous air pollutants; or
 - (iv) 5.0 tons per year or more of any other regulated pollutant.
 - c. Its emissions, in combination with the emissions of other units and activities at the facility, would not cause the facility to emit or have the potential to emit any pollutant in such amount as to make the facility a Title V source.
 - d. In the case of a proposed new emissions unit at an existing facility, the emissions of such unit, in combination with the emissions of any other proposed new or modified units and activities at the facility, would not result in a modification subject to the preconstruction review requirements of subparagraph 62-204.800(10)(d)2., Rule 62-212.400 or 62-212.500, F.A.C.
 - e. In the case of a proposed new pollutant-emitting activity, such activity would not constitute a modification of any existing non-exempt emissions unit at a non-Title V source or any existing non-insignificant emissions unit at a Title V source.

[Rule 62-210.300(3)(a)20 and Rule 62-210.300(3)(b)1, 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
031 - 032	General Electric LM 6000 Sprint Combustion Turbines capable of inlet chilling to 48°F

APPLICABLE STANDARDS AND REGULATIONS

1. **BACT Determinations:** The emission unit addressed in this section is subject to a Best Available Control Technology (BACT) determination for nitrogen oxides (NO_x), sulfur dioxide (SO₂), sulfuric acid mist (SAM) and particulate matter (PM₁₀). [Rule 62-212.400, F.A.C.]
2. **NSPS Requirements:** The combustion turbine 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 two new inlet chilled combustion turbines with electrical generator sets (General Electric Model LM6000PC SPRINT). Each unit is designed to produce approximately 50 MW of electrical power. [Applicant Request]
4. **Permitted Capacity:** The heat input to each combustion turbine from firing natural gas shall not exceed 445 MMBtu per hour based on the following: 100% base load, a lower heating value (LHV) for natural gas and a compressor inlet air temperature of 29° F. The heat input to each combustion turbine from firing No. 2 fuel oil shall not exceed 434 MMBtu per hour based on the following: 100% base load, LHV and a compressor inlet air temperature of 29° 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 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 2 grains 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 5840 hours during any consecutive 12-month period, 4000 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. [Rule 62-212.400, F.A.C. (BACT); 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 turbine 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 Technology: The permittee shall install, calibrate, tune, operate, and maintain a water injection system for the unit. The system shall be designed and operated so as to ensure that NO_x emissions prior to the SCR are sufficient to achieve the NO_x emission limits in Condition III. 12 [Applicant request; Rule 62-4.070(3); Rule 62-212.400, F.A.C. (BACT)]
12. SCR/Oxidation Catalyst: To control NO_x and CO emissions, the combustion turbine shall include an SCR system and an oxidation catalyst. The catalyst systems shall be designed in order to achieve the following emissions, regardless of fuel being combusted: 5 ppmvd NO_x @ 15% O₂ and 6 ppmvd CO @ 15% O₂. [Design and Rule 62-212.400, F.A.C.]
13. 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

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

Pollutant	Emission Standard	CT Emissions (lb/hr)		One CT (lb/year)	TPY for 2 CT's
		OIL	GAS		
NO _x	5 ppmvd @ 15% O ₂	8.67	8.62	50,541	50.5
CO	6 ppmvd @ 15% O ₂	6.35	6.27	36,937	36.9
SO ₂	NG & 0.05% S oil	10.31	1.13	43,319	43.4
PM ₁₀	VE	14.94	2.45	64,268	64.2
PM	VE	14.94	2.45	64,268	64.2
VOC	3 ppmvd @ 15% O ₂	2.66	1.79	13,934	13.9
SAM	NG & 0.05% S oil	9.66	1.15	40,756	40.8

Note: Annual emissions, for the purposes of this table only, are based on 4000 hours of oil operation and 1840 hours of natural gas operation.

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

15. Carbon Monoxide (CO):

CO emissions from the combustion turbine shall not exceed 6.0 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, F.A.C. (PSD Avoidance)]

16. Nitrogen Oxides (NO_x):

NO_x emissions from the combustion turbine shall not exceed 5.0 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 40 CFR Part 60 Subpart GG and based on a 24-hour block average for data collected from the continuous emissions monitor. The ammonia slip rate shall be limited to 10 ppmvd @ 15% O₂. [Rule 62-212.400, F.A.C. (BACT)]

17. Particulate Matter (PM/PM₁₀), Sulfuric Acid Mist (SAM) and Sulfur Dioxides (SO₂)

(a) Fuel Specifications. Emissions of PM, PM₁₀, SAM, and SO₂ shall be limited by the use of pipeline-quality natural gas containing no more than 2 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 the combustion turbine shall not exceed 10% opacity, based on a 6-minute average. This work practice standard is established as a means of ensuring the non-applicability of BACT. 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)]

18. Volatile Organic Compounds (VOC):

VOC emissions from the combustion turbine shall not exceed 3.0 ppmvd corrected to 15% oxygen for each fuel. The VOC emissions shall be measured and reported in terms of methane. The permittee shall demonstrate compliance with these standards by conducting initial tests in accordance with EPA Methods 25 and/or 25A and the performance testing requirements of this permit. Optional testing in accordance with EPA Method 18 may be conducted to account for the actual methane fraction of the measured VOC emissions. [Application, Design, Rule 62-4.070(3), F.A.C.]

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_x 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

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

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 SlipNo 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 permitted capacity, but not later than 180 days after initial operation of the emissions unit. Initial performance tests shall be conducted for CO, NO_x, VOC, ammonia slip and visible emissions while combusting each fuel. Initial NO_x 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_x, CO, and visible emissions from the combustion turbine for each fuel. 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_x emissions data collected during the annual NO_x 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 1st to September 30th). 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_x, and visible emissions from the combustion turbine. VOC emission tests are not required prior to permit renewal provided the CO emission standards are met. Testing for ammonia slip meeting the requirements of Condition 25, Annual Performance Tests will meet 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 the 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

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

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_x CEMS: The permittee shall install, calibrate, operate, and maintain a CEMS to measure and record NO_x 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_x 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_x 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, and zero 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.]

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

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 the combustion turbine. 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. All hours of operation shall be included in the demonstration of compliance with the 12-month fuel usage limitations. 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_x 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 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. [Rule 62-210.370(2), F.A.C.]

**TECHNICAL EVALUATION AND
FINAL BACT DETERMINATION**

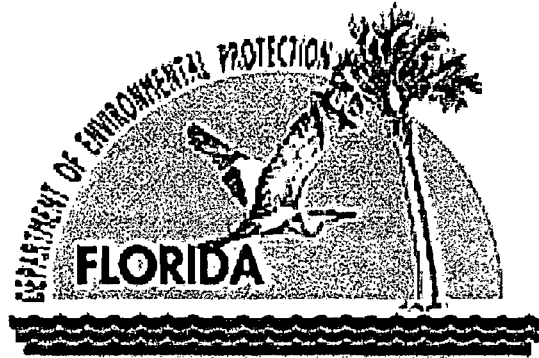
**TECHNICAL EVALUATION
AND
FINAL BACT DETERMINATION**

City of Tallahassee Arvah B. Hopkins Station

Combustion Turbine Addition

Leon County

0730003-005-AC



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

October 20, 2004

TECHNICAL EVALUATION AND FINAL BACT DETERMINATION

1. GENERAL INFORMATION

1.1 APPLICANT NAME AND ADDRESS

City Of Tallahassee
Arvah B. Hopkins Generating Station
1125 Geddie Road
Tallahassee, Florida 32310

Authorized Representative: Robert E. McGarrah, Manager – Power Production, City of Tallahassee

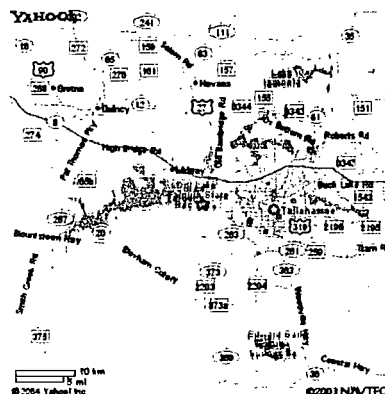
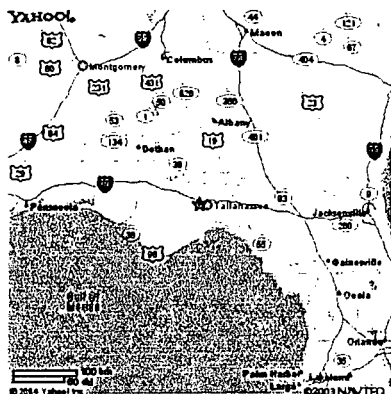
1.2 REVIEWING AND PROCESS SCHEDULE

August 13, 2004 Received permit application
August 13, 2004 Application complete

2. FACILITY INFORMATION

2.1 FACILITY LOCATION

The City of Tallahassee Arvah B. Hopkins Station is located approximately 7 miles west of downtown Tallahassee and 25 miles north of the St. Marks NWR, a Class I Area. UTM coordinates for this facility are Zone 16; 749.53 km E; 3371.7 km N.



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

This facility consists of two fossil fuel-fired steam generators and two fossil fuel-fired combustion turbines. The two steam generators are Phase II Acid Rain Units. Boiler Number 2 is regulated under the Florida Electrical Power Plant Siting Act. The total (nominal) combined electrical generating capacity from the facility is 356.27 megawatts electric (MW), of which, 313 MW are provided by the steam generators and 43.27 MW are provided by the combustion turbines. The fuels used at this facility are natural gas, fuel oil and on-specification used oil.

Based on the Title V permit renewal application, this facility is a major 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/PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), 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-

TECHNICAL EVALUATION AND FINAL BACT DETERMINATION

212.400, 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

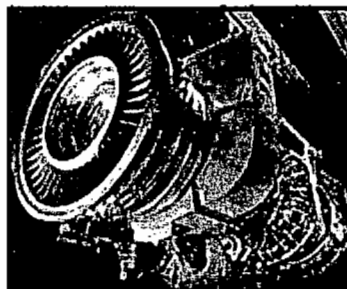
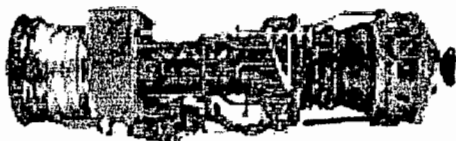
This project will add two nominal 50 megawatt GE LM6000 CT's and one 750 KW emergency (diesel) generator.

Emissions Unit No.	Emissions Unit Description
031 - 032	General Electric LM 6000PC Sprint Combustion Turbines
033	750KW Emergency Diesel Generator

The applicant proposes that these generators will be operated in simple cycle mode (only) with the hours of operation limited to 5840 per CT per year. Of the 5840 hours per year, the applicant proposes to fire 0.05% sulfur oil for up to 4000 hours per year and pipeline natural gas for the remaining 1840 hours per year. A review and P.T.E. analysis follow.

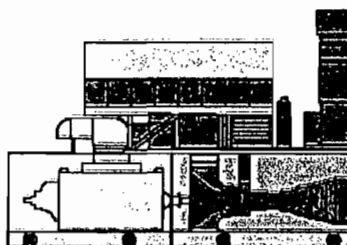
4. PROJECT DETAILS

Two GE LM6000 Sprint Combustion Turbines will be installed at the Hopkins plant. Each unit is expected to have an approximate maximum heat input of 445 MMBtu/hr based upon LHV natural gas. The below images represent the approximate appearance of such units, and the table indicates GE advertised specifications.



SPRINT 60-Hz Generator Sets

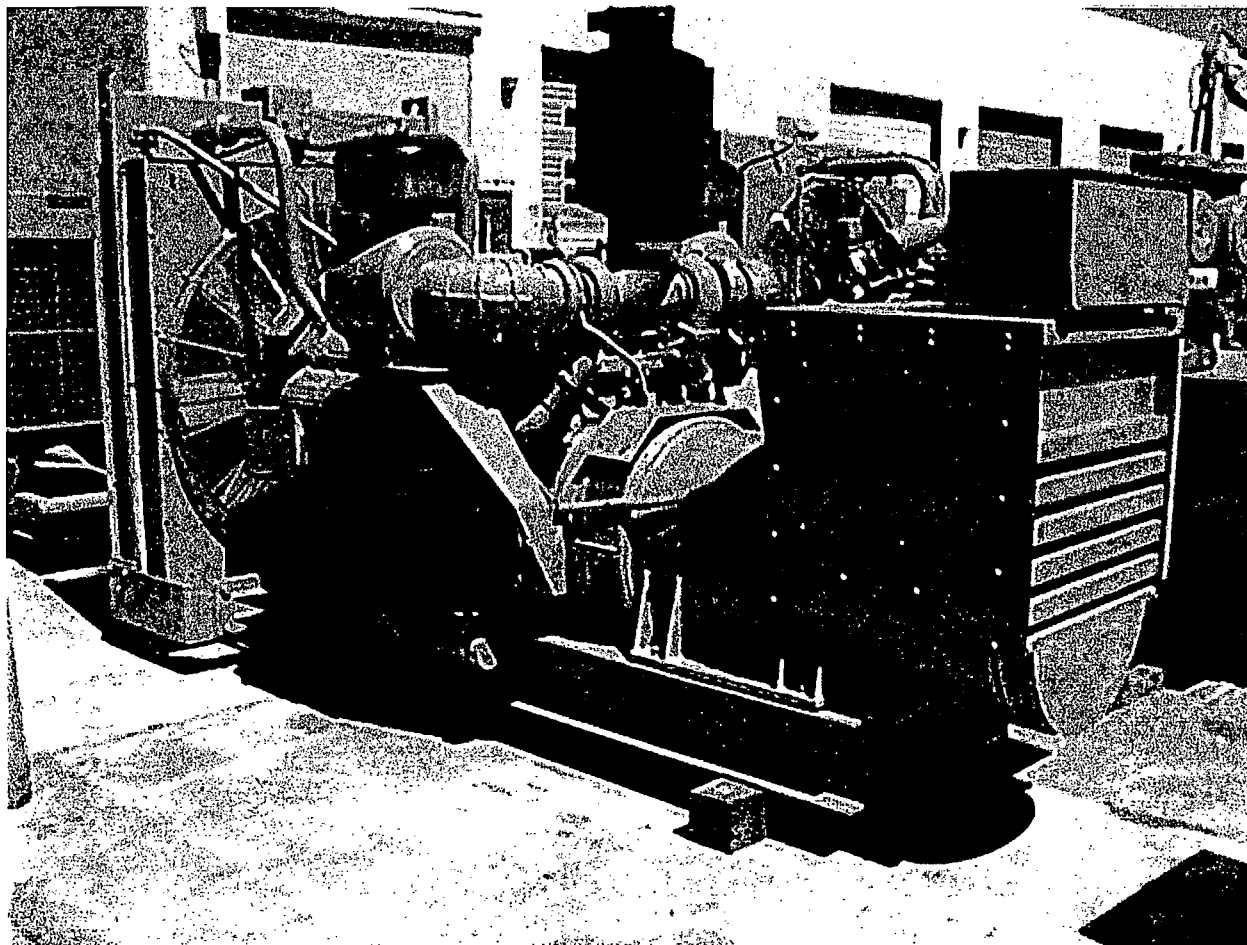
Base Plate Length	56' 6"	(17.22 m)
Base Plate Width	13' 6"	(4.11 m)
Enclosure Height	14' 6"	(4.42 m)
Overall Length	56' 9"	(17.30 m)
Overall Width*	49' 9"	(15.16 m)
Overall Height*	36' 2"	(11.02 m)
Base Plate Foundation Load*	476,000 lb	(214,200 kg)



	Power kW	Heat Rate Btu/kWh LHV	kJ/kWh LHV	No. Shafts	Pressure Ratio	Shaft Speed rpm	Exhaust Flow lb/s	kg/s	Exhaust Temp. °F	°C
LM6000PC SPRINT*	50080	8434	8916	2	30.9	3600	295	134	826	441
LM6000PC	43417	8112	8549	2	29.1	3600	281	127	831	444
LM6000PD SPRINT	46824	8235	8688	2	30.7	3600	290	131	837	447
LM6000PD	42336	8308	8765	2	29.3	3600	278	126	846	452
LM6000PD (liquid fuel)	49212	8415	8878	2	28.1	3600	268	122	857	458
LM2500PK	30676	8834	9300	2	23.6	3600	192	87.1	958	514
LM2500PV	39463	8854	9069	2	22.6	6100	186	84.3	931	499
LM2500PH**	27763	8391	8775	2	20.2	3600	167	75.9	926	497
LM2500PE	22719	9311	9789	2	19.1	3600	153	69.4	992	533

TECHNICAL EVALUATION AND FINAL BACT DETERMINATION

The emergency diesel generator will likely appear as follows (Caterpillar 3412TA):



4.1 MAXIMUM POTENTIAL TO EMIT

The following table summarizes the maximum potential to emit (PTE) for the subject project without controls:

Pollutant	PSD Threshold (TPY)	CT Emission Rate (lb/hr)		Annual CT Emissions (lb/year)	Tons per year for 2 CT's	Emergency Generator TPY	TPY Total	PSD Applies?
		OIL	GAS					
NO _x	40	72.9	43.1	370,904	370.8	1.62	372.4	Yes
CO	100	15.8	43.2	142,688	142.7	0.62	143.3	Yes
SO ₂	40	10.31	1.13	43,319	43.4	0.04	43.4	Yes
PM ₁₀	15	14.94	2.45	64,268	64.2	0.04	64.2	Yes
VOC	40	4.43	1.78	20,995	21	0.24	21.2	No
SAM	7	9.66	1.15	40,756	40.8	Neg.	40.8	Yes

Note: Assumed 4000 hours of oil operation and 1840 hours of natural gas operation.

In summary, a PSD Review and BACT Determination are required for NO_x, CO, SO₂, SAM and PM₁₀. Additionally, the LM6000's are subject to the NESHAP (which is currently "stayed") for which a MACT based standard of 91 ppb exists. The applicant suggests that the AP-42 formaldehyde emission factor (3,100 lb/10¹² Btu for all loads) is inappropriate and recommends a value which is approximately 10% of that value. Given the

TECHNICAL EVALUATION AND FINAL BACT DETERMINATION

conservative nature of a PSD and MACT analysis, the Department finds inadequate reason to reject the higher (3,100 lb/10¹²) emission factor and has applied it within its analysis, resulting in an uncontrolled formaldehyde emission rate of approximately 1.38 lb/hr.

4.2 APPLICANT'S PROPOSAL

NO_x: The applicant provided a vendor estimate of a packaged SCR/Oxidation Catalyst system (including Direct Installation Cost, or DAC) of \$2.48M. Based upon information from the supplier, the City has indicated that 60% of this cost is required for the SCR system and the remaining 40% for the OC system. Accordingly, total capital costs are calculated at \$1.49M for the installation of a high temperature SCR. Although the Department does not completely accept the analysis of cost effectiveness the applicant has estimated it at \$6700 per ton of NO_x removed (based upon 4000 hours of annual oil operation) which is acceptable.

CO: The applicant indicated that since the NESHAP applies to this application, an oxidation catalyst is proposed. As a result, the applicant did not calculate cost-effectiveness for purposes of BACT. However, the capital costs including direct installation are 40% of the SCR/OC system or \$990k, and the CO removed will be 26 TPY per CT.

PM₁₀: 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."

SO₂/SAM: The applicant indicates that fuel quality is the only technically feasible method of controlling SO₂ and SAM emissions. As a result, the applicant contends that pipeline natural gas and 0.05% sulfur distillate represent BACT.

4.3 SUMMARY OF APPLICANT'S PROPOSAL AFTER CONTROLS

Pollutant	PSD Threshold (TPY)	CT Emission Rate (lb/hr)		Annual CT Emissions (lb/year)	Tons per year for 2 CT's	Emergency Generator TPY	TPY Total	PSD Applies?
		OIL	GAS					
NO _x	40	8.67	8.62	50,541	50.5	1.62	52.2	Yes
CO	100	6.35	6.27	36,937	36.9	0.62	37.5	No
SO ₂	40	10.31	1.13	43,319	43.4	0.04	43.4	Yes
PM ₁₀	15	14.94	2.45	64,268	64.2	0.04	64.2	Yes
VOC	40	2.66	1.79	13,934	13.9	0.24	14.1	No
SAM	7	9.66	1.15	40,756	40.8	Neg.	40.8	Yes

Note: Assumed 4000 hours of oil operation and 1840 hours of natural gas operation.

The Department will make a determination of BACT for NO_x, PM₁₀ and SO₂/SAM.

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.

TECHNICAL EVALUATION AND FINAL BACT DETERMINATION

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 first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically unfeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

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_x @ 15% O₂ (assuming 25 percent efficiency) and 150 ppmvd SO₂ @ 15% O₂ (or <0.8% sulfur in fuel). The BACT proposed by the City of Tallahassee is well within the NSPS limit.

5.1 NO_x CONTROL

Much has been made through the years of the detrimental effects of combusting liquid fuels and the corresponding application of SCR. Often-times, applicants will cite either the limited domestic experience which is available, or the removal of an SCR at the PREPA project in San Juan, Puerto Rico (see: <http://www.epa.gov/Region2/news/2000/00048.htm>). Conversely, the Department has long been aware of the successful application of SCR on liquid fired applications in Japan and Europe, as well as the documentation available by such organizations as the European Power Plant Suppliers Association (see: http://www.epps.org/BAT_LCP/BAT_LCP_Draft_2/BAT_LCP_Draft_2_CH_06.pdf) and the European Integrated Pollution Prevention and Control Bureau (see: <http://www.eel.nl/index9.htm>). Furthermore, consultants which have been hired by the Department confirm that the application of SCR is now commercially available and likely cost-effective for nearly any fuel, including synthetic gas (syngas) whether generated from coal, petroleum products or even biomass; MSW, kerosene, naphtha or even biomass, presuming that the flue gas characteristics can be adequately defined.

For this project, the applicant provided a vendor estimate of \$1.49M (which included the Direct Installation Cost, or DAC) for the installation of a high temperature SCR. Considering all other potential expenses, a total annualized cost of \$1.08M at an annual removal of 160 TPY of NO_x was estimated. The TPY was based upon reducing NO_x from 42 ppmvd while firing oil (the predominant fuel) and from 25 ppmvd while firing gas to 5 ppm for either fuel. The overall cost effectiveness is well below \$10,000 per ton of NO_x, and therefore properly considered as reasonable. The Department concurs with the applicant's proposal and agrees that a reduction of NO_x by 90% (from 42 ppm to 5 ppm) for firing distillate oil represents BACT. In this regard, the Department sees no reason to believe that the application of an SCR will yield NO_x emissions while firing natural gas any higher than 3.5 ppmvd (an 85% reduction from 25 ppm), but due to the limited *state-wide* experience with high-temperature SCR, the requested BACT emission rate of NO_x (5 ppmvd) for natural gas as well as an ammonia slip rate of 10 ppmvd will be allowed.

5.2 PM₁₀ CONTROL

PM₁₀: 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 that the combustion of clean fuels is BACT for this combustion turbine.

5.3 SO₂/SAM CONTROL

SO₂/SAM: The applicant indicates that fuel quality is the only technically feasible method of controlling SO₂ 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 SO₂ emission (PTE) of this project (43.3 TPY), 0.05% sulfur oil and pipeline natural gas are accepted as BACT for this project.

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6. AIR QUALITY IMPACT ANALYSIS

6.1 INTRODUCTION

The proposed project will increase emissions of four pollutants at levels in excess of PSD significant amounts: NO_x, PM₁₀ and SO₂ and sulfuric acid mist (SAM). NO_x, PM₁₀ and SO₂ are criteria pollutants and have national and state ambient air quality standards (AAQS), PSD increments, and significant impact levels defined for them. There are no applicable PSD increments, AAQS or *de minimus* monitoring levels for SAM; the BACT determination will limit maximum potential SAM emissions.

The applicant's initial NO_x, PM₁₀ and SO₂ air quality impact analyses for this project predicted no significant impacts in the Class II area in the vicinity of the project; therefore, further applicable AAQS and PSD increment impact analyses for these pollutants were not required in the vicinity of the project. The nearest PSD Class I areas are the Bradwell Bay and St. Marks National Wilderness Areas (NWA) located approximately 28 and 38 km, respectively from the project site. The applicant's PSD Class I air quality analysis showed no significant impacts due to the project. Therefore, a cumulative PSD Class I increment analysis was not required for these pollutants. Also, the maximum predicted impacts for all pollutants were below their respective *de minimus* ambient impact levels. Therefore, pre-construction monitoring at the proposed site was not required for this project. Based on the preceding discussion the air quality analyses required by the PSD regulations for this project are the following:

- A significant impact analysis for NO_x, PM₁₀ and SO₂;
- A significant impact analysis for PM₁₀, SO₂, and NO₂ in the Bradwell Bay and St Marks NWA;
- An analysis of impacts on soils, vegetation, visibility, and of growth-related air quality modeling impacts.

Based on these required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, 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.

6.2 MODELS AND METEOROLOGICAL DATA USED

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project in the Class II area in the vicinity of the project, and in the portions of the Bradwell Bay and St. Marks NWA PSD Class I areas less than 50 km from the proposed facility. 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 satisfy 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 National Weather Service (NWS) stations at Tallahassee and Apalachicola, Florida (surface and upper air data). The 5-year period of meteorological data was from 1986 through 1990. These NWS stations were selected for use in the study because they are the closest primary weather stations to the study area and are most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

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For determining potential plume visibility effects in the portions of the St. Marks NWA that are within 50 km of the project, the VISCSCREEN model was used. The VISCSCREEN model can be used to calculate potential plume impact of specific pollutant emissions for specific transport and meteorological dispersion conditions.

Since portions of the Bradwell Bay and St. Marks NWA PSD Class I areas are greater than 50 km from the proposed facility, long-range transport modeling was required for the Class I increment impact assessment and for regional haze and nitrogen and sulfur deposition impacts. The California Puff (CALPUFF) dispersion model, Version 5.7 (EPA, 2003) was used to evaluate the potential impact of the proposed pollutant emissions on the PSD Class I increments. 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.

6.3 AMBIENT MONITORING REQUIREMENTS

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. When available, the use of existing representative monitoring data may satisfy the monitoring requirement. An exemption to the monitoring requirement may be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimus concentration. The table below shows that predicted ambient impacts from the power plant are substantially less than the respective de minimus levels; therefore, preconstruction ambient air quality monitoring is not required for any pollutant.

**PREDICTED MAXIMUM AIR QUALITY IMPACTS FROM THE PROJECT
COMPARED TO THE DE MINIMIS AMBIENT IMPACT LEVELS**

Pollutant	Averaging Time	Max Predicted Impact (ug/m ³)	De Minimus Level (ug/m ³)	Impact Greater Than De Minimus?
PM ₁₀	24-hour	2	10	No
NO ₂	Annual	0.05	14	No
SO ₂	24-hour	1	13	No

6.4 SIGNIFICANT IMPACT ANALYSIS

Initially, the applicant conducts modeling using only the proposed project's emissions at worst load conditions. In order to determine worst load conditions the ISCST3 model was used to evaluate dispersion of emissions from the simple cycle facility for three loads (50, 75% and 100%) and three seasonal operating conditions (summer, winter, and average) for each fuel type. Once the worst-case loads are identified, the applicant utilizes the ISCST3 model to evaluate impacts at these loads, and compares the results to the significant impact levels. If modeling at worst load conditions shows significant impacts, additional multi-facility modeling is required to determine the project's impacts on existing air quality and any applicable AAQS or PSD increments.

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Receptors were placed around the facility, which is located in a PSD Class II area. The receptor grid for predicting maximum concentrations in the vicinity of the project was a discrete receptor grid that extended along the property boundary and out to 10 km. Receptor spacing along the property boundary was 50 m. For each pollutant subject to PSD and also subject to PSD increment and/or AAQS analyses, this modeling compares maximum predicted impacts due to the project with PSD significant impact levels to determine whether significant impacts due to the project are predicted in the vicinity of the facility. For the Class I analysis, the maximum concentrations were predicted by CALPUFF modeling at 233 receptors in the Bradwell Bay and St. Marks NWA PSD Class I areas. These receptors have been provided by the federal land manager. The table below shows the results of the significant impact modeling.

**MAXIMUM PROJECT AIR QUALITY IMPACTS FOR COMPARISON TO THE
PSD CLASS II SIGNIFICANT IMPACT LEVELS IN THE VICINITY OF THE FACILITY**

Pollutant	Averaging Time	Max. Predicted Impact (ug/m ³)	Significant Impact Level (ug/m ³)	Significant Impact?
SO ₂	Annual	0.05	1	NO
	24-hour	1	5	NO
	3-hour	5	25	NO
PM ₁₀	Annual	0.1	1	NO
	24-hour	2	5	NO
NO ₂	Annual	0.05	1	NO

**MAXIMUM PROJECT AIR QUALITY IMPACTS FOR COMPARISON TO
THE PSD CLASS I SIGNIFICANT IMPACT LEVELS ST.MARKS AND BRADWELL BAY NWA**

Pollutant	Averaging Time	Max. Predicted Class I Impact Area (ug/m ³)	Proposed EPA Significant Impact Level (ug/m ³)	Significant Impact?
SO ₂	Annual	0.01	0.1	NO
	24-hour	0.12	0.2	NO
	3-hour	0.35	1.0	NO
PM ₁₀	Annual	0.02	0.2	NO
	24-hour	0.18	0.3	NO
NO ₂	Annual	0.01	0.1	NO

The results of the significant impact modeling show that there are no significant impacts predicted due to the emissions from this project.

6.5 ADDITIONAL IMPACTS ANALYSIS

Impacts on Soils, Vegetation, and Wildlife

Very low emissions are expected from these natural gas-fired/low sulfur fuel oil combustion turbines in comparison with a conventional power plant generating equal power. Emissions of acid rain and ozone precursors will be very low. The maximum ground-level concentrations predicted to occur for SO₂, PM₁₀, CO and NO_x, 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 less than the significant impact levels, which are in

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turn 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 maximum predicted total nitrogen and sulfur depositions predicted for the project in the Bradwell Bay and St. Marks NWA are less than the federal land manager's recommended significant impact levels.

Impact on Visibility

Natural gas and low sulfur distillate fuel oil are clean fuels and produce little ash. This will minimize smoke formation. The low NO_x and SO₂ emissions will also minimize plume opacity. Because no add-on control equipment and no reagents are required, there will be no steam plume or tendency to form ammoniated particulate species.


A regional haze analysis that used the CALPUFF modeling system was performed and showed a maximum predicted change in visibility, which is less than the NPS threshold of 5%. Therefore, the proposed project is not predicted to have an adverse impact on visibility and regional haze in the St. Marks NWA.

Growth-Related Air Quality Impacts

There will be short-term increases in the labor force to construct the project. These temporary increases will not result in significant commercial and residential growth in the vicinity of the project. Operation of the additional unit will require few new permanent employees, which will cause no significant impact on the local area.

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 final 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

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

- 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.

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

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.