

Friday, Barbara

To: Jason Goodwin; 'Heidi Whidden'; 'tdavis@ectinc.com'; Zhang-Torres; Forney.Kathleen@epamail.epa.gov

Cc: Thomas, Bruce X.

Subject: DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185A and PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex

Attachments: Draft Construction Permit Changes.pdf; 1050221-012-AC and 014-AV Combined Public Notice.pdf; 1050221-012-AC TEPD.pdf; 1050221-012-AC&014-AVCombinedWrittenNotice.pdf; 1050221-014-AV - SOB.pdf; 1050221-014-AV Draft Changes.pdf

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: <http://www.adobe.com/products/acrobat/readstep.html>.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

DEP, Bureau of Air Regulation

12/21/2007

Friday, Barbara

From: System Administrator
To: Thomas, Bruce X.; Zhang-Torres
Sent: Friday, December 21, 2007 3:32 PM
Subject: Delivered: DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185A and PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex

Your message

To: 'Jason Goodwin'; 'Heidi Whidden'; 'tdavis@ectinc.com'; Zhang-Torres; 'Forney.Kathleen@epamail.epa.gov'
Cc: Thomas, Bruce X.
Subject: DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185A and PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex
Sent: 12/21/2007 3:32 PM

was delivered to the following recipient(s):

Thomas, Bruce X. on 12/21/2007 3:32 PM
Zhang-Torres on 12/21/2007 3:32 PM

Friday, Barbara

From: Exchange Administrator
Sent: Friday, December 21, 2007 3:32 PM
To: Friday, Barbara
Subject: Delivery Status Notification (Relay)

Attachments: ATT124227.txt; DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185A and PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex



ATT124227.txt
(367 B)



DRAFT Air
onstruction Permit.

This is an automatically generated Delivery Status Notification.

Your message has been successfully relayed to the following recipients, but the requested delivery status notifications may not be generated by the destination.

jgoodwin@calpine.com
HWhidden@calpine.com

Friday, Barbara

From: Exchange Administrator
Sent: Friday, December 21, 2007 3:33 PM
To: Friday, Barbara
Subject: Delivery Status Notification (Relay)

Attachments: ATT124235.txt; DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185A and PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex



ATT124235.txt
(284 B)



DRAFT Air
onstruction Permit .

This is an automatically generated Delivery Status Notification.

Your message has been successfully relayed to the following recipients; but the requested delivery status notifications may not be generated by the destination.

tdavis@ectinc.com

Friday, Barbara

From: Mail Delivery System [MAILER-DAEMON@mseive01.rtp.epa.gov]
Sent: Friday, December 21, 2007 3:32 PM
To: Friday, Barbara
Subject: Successful Mail Delivery Report

Attachments: Delivery report; Message Headers



Delivery report.txt
(489 B)



Message
Headers.txt (2 KB)

This is the mail system at host mseive01.rtp.epa.gov.

Your message was successfully delivered to the destination(s) listed below. If the message was delivered to mailbox you will receive no further notifications. Otherwise you may still receive notifications of mail delivery errors from other systems.

The mail system

<Forney.Kathleen@epamail.epa.gov>: delivery via 127.0.0.1[127.0.0.1]:10025: 250
OK, sent 476C22D3_13090_21636_2

Friday, Barbara

From: Mailer-Daemon@ectinc.com
Sent: Friday, December 21, 2007 3:48 PM
To: Friday, Barbara
Subject: Confirm: 'DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185A and PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex' received

A message which requested delivery confirmation recently arrived at this server. This server honors all delivery confirmation requests whether generated from local mail traffic or from mail received via an outside source (such as SMTP/POP).

Message-ID: <A8D8D78921C1E041BEF0658B0D94AB1889DB0F@tlhexsmb5.floridadep.net>

To : tdavis@ectinc.com
From : Barbara.Friday@dep.state.fl.us
Subject : DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185A and PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex
Date : Fri, 21 Dec 2007 15:32:11 -0500

Receiving Domain: ectinc.com

Friday, Barbara

From: Zhang-Torres
To: Friday, Barbara
Sent: Friday, December 21, 2007 3:38 PM
Subject: Read: DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185A and PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex

Your message

To: 'Jason Goodwin'; 'Heidi Whidden'; 'tdavis@ectinc.com'; Zhang-Torres; 'Forney.Kathleen@epamail.epa.gov'
Cc: Thomas, Bruce X.
Subject: DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185A and PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex
Sent: 12/21/2007 3:32 PM

was read on 12/21/2007 3:38 PM.

Friday, Barbara

From: Jason Goodwin [jgoodwin@calpine.com]
To: undisclosed-recipients
Sent: Friday, December 21, 2007 3:51 PM
Subject: Read: DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185A and PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex

Your message

To: jgoodwin@calpine.com
Subject:

was read on 12/21/2007 3:51 PM.

Friday, Barbara

From: Jason Goodwin [jgoodwin@calpine.com]
Sent: Friday, December 21, 2007 3:52 PM
To: Friday, Barbara
Subject: RE: DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185A and PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex

Got it – thanks.

Thanks,

Jason Goodwin
Calpine Eastern Region
713.570.4795 o
713.332.5168 f
713.252.8064 c

From: Friday, Barbara [mailto:Barbara.Friday@dep.state.fl.us]
Sent: Friday, December 21, 2007 2:32 PM
To: Jason Goodwin; Heidi Whidden; tdavis@ectinc.com; Zhang-Torres; Forney.Kathleen@epamail.epa.gov
Cc: Thomas, Bruce X.
Subject: DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185A and PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

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Thank you,

DEP, Bureau of Air Regulation

The Department of Environmental Protection values your feedback as a customer. DEP Secretary Michael W. Sole is committed to continuously assessing and improving the level and quality of services provided to you. Please take a few minutes to comment on the quality of service you received. Simply click on [this link to the DEP Customer Survey](#). Thank you in advance for completing the survey.

12/27/2007

Friday, Barbara

From: Heidi Whidden [HWhidden@calpine.com]
To: Friday, Barbara
Sent: Friday, December 21, 2007 4:14 PM
Subject: Read: DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185A and PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex

Your message

To: HWhidden@calpine.com
Subject:

was read on 12/21/2007 4:14 PM.

Friday, Barbara

From: Mail Delivery System [MAILER-DAEMON@mseive01.rtp.epa.gov]
Sent: Friday, December 21, 2007 2:23 PM
To: Friday, Barbara
Subject: Successful Mail Delivery Report

Attachments: Delivery report; Message Headers



Delivery report.txt
(489 B)



Message
Headers.txt (2 KB)

This is the mail system at host mseive01.rtp.epa.gov.

Your message was successfully delivered to the destination(s) listed below. If the message was delivered to mailbox you will receive no further notifications. Otherwise you may still receive notifications of mail delivery errors from other systems.

The mail system

<Forney.Kathleen@epamail.epa.gov>: delivery via 127.0.0.1[127.0.0.1]:10025: 250
OK, sent 476C12A3_13094_54768_1

Friday, Barbara

From: Tom Davis [tdavis@ectinc.com]
Sent: Saturday, December 22, 2007 9:00 AM
To: Friday, Barbara
Subject: Re: DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185Aand PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex

-----Original Message-----

From: "Friday, Barbara" <Barbara.Friday@dep.state.fl.us>
 To: "Jason Goodwin" <jgoodwin@calpine.com>, "Heidi Whidden" <HWhidden@calpine.com>, <tdavis@ectinc.com>, "Zhang-Torres" <Cindy.Zhang-Torres@dep.state.fl.us>, <Forney.Kathleen@epamail.epa.gov>
 Cc: "Thomas, Bruce X." <Bruce.X.Thomas@dep.state.fl.us>
 Date: Fri, 21 Dec 2007 15:32:11 -0500
 Subject: DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185A and PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex

Dear Sir/Madam:

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Thank you,
 DEP, Bureau of Air Regulation

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12/27/2007

Friday, Barbara

From: Thomas, Bruce X.
To: Friday, Barbara
Sent: Monday, January 07, 2008 11:23 AM
Subject: Read: DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185A and PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex

Your message

To: 'Jason Goodwin'; 'Heidi Whidden'; 'tdavis@ectinc.com'; Zhang-Torres; 'Forney.Kathleen@epamail.epa.gov'
Cc: Thomas, Bruce X.
Subject: DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185A and PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex
Sent: 12/21/2007 3:32 PM

was read on 1/7/2008 11:23 AM.

Friday, Barbara

From: Forney.Kathleen@epamail.epa.gov
Sent: Monday, January 14, 2008 10:29 AM
To: Friday, Barbara
Subject: Re: DRAFT Air Construction Permit No. 1050221-012-AC(PSD-FL-185A and PSD-FL287A)/1050221-014-AV - Auburndale Energy Complex

We got these files... I don't know if I ever acknowledged this email.
Sorry.
Thanks
Katy

Katy R. Forney
Air Permits Section
EPA - Region 4
61 Forsyth St., SW
Atlanta, GA 30024

Phone: 404-562-9130
Fax: 404-562-9019

"Friday,
Barbara"
<Barbara.Friday@
dep.state.fl.us>

12/21/2007 03:32
PM

To
"Jason Goodwin"
<jgoodwin@calpine.com>, "Heidi
Whidden" <HWhidden@calpine.com>,
<tdavis@ectinc.com>,
"Zhang-Torres"
<Cindy.Zhang-Torres@dep.state.fl.
us>, Kathleen
Forney/R4/USEPA/US@EPA

cc
"Thomas, Bruce X."
<Bruce.X.Thomas@dep.state.fl.us>
Subject
DRAFT Air Construction Permit No.
1050221-012-AC(PSD-FL-185A and
PSD-FL287A)/1050221-014-AV -
Auburndale Energy Complex

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

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Memorandum

Florida Department of Environmental Protection

TO: Trina Vielhauer, Bureau of Air Regulation
THROUGH: Jeff Koerner, Air Permitting North Section
FROM: Bruce Thomas, Air Permitting North Section 
DATE: December 19, 2007
SUBJECT: Project No. 1050221-012-AC (PSD-FL-185A and PSD FL-287A)
Project No. 1050221-014-AV
Auburndale Energy Complex
Combustion Turbine Heat Input Increases

This project is a minor revision to the original air construction permits for these units with a concurrent revision of the Title V air operation permit. Attached for your review are the following items:

- Written Notice of Intent to Issue Air Permit;
- Public Notice of Intent to Issue Air Permit;
- Technical Evaluation and Preliminary Determination;
- Statement of Basis;
- The Draft Title V permit revisions;
- The Draft Air Construction permit revisions; and,
- P.E. Certification.

The Technical Evaluation and Preliminary Determination provide a detailed description of the project and the rationale for issuance. The P.E. certification briefly summarizes the proposed project. I recommend your approval of the attached Draft Permit.

Attachments

P.E. CERTIFICATION STATEMENT

PERMITTEE

Calpine Corporation
717 Texas Avenue
Suite 100
Houston, Texas 77002

Draft Permit No. 1050221-012-AC
Draft Permit No. 1050221-014-AV
Combustion Turbine Heat Input
Increases
Auburndale Energy Complex
Polk County, Florida

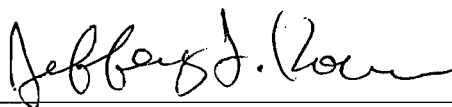
PROJECT DESCRIPTION

The purpose of the project is to revise the original air construction permits (Permit No. 1050221-003-AC and 1050221-004-AC / PSD-FL-185 and Permit No. 1050234-001-AC / PSD-FL-287) and concurrently revise the Title V air operation permit (Permit No. 1050221-013-AV) to allow increases to the heat input rates for the 156 MW combined cycle unit (EU-001) from 1,214 to 1,364 MMBtu per hour when firing natural gas in wet compression mode. The original operating curve submitted with the construction permit to allow wet compression operation does not accurately reflect the actual operation of the wet compression system.

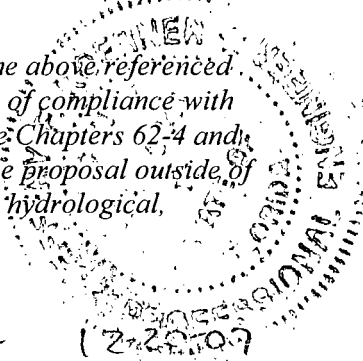
The permit also authorizes heat input increases for the 120 MW simple cycle combustion turbine (EU-006) from 1,591 to 1,776 MMBtu per hour when firing natural gas and from 1,546 to 1,726 MMBtu per hour when firing distillate oil; and a heat input increase for the 540 MW combined cycle turbines (EU-007 and EU-008) from 1,669 to 1,875 MMBtu per hour when firing natural gas. The increases were requested to correct estimates provided by the gas turbine vendor that underestimate the actual performance of the installed turbines.

No physical or operational changes are necessary to realize the requested heat input increases. No increase in the emissions standards (concentrations or mass emissions rates) are requested to accommodate the change. The applicant does not expect any emissions increases nor increased utilization as a result of the change. The emissions units will continue to comply with all applicable provisions of the air construction and operation permits.

***I HEREBY CERTIFY** that the air pollution control engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including, but not limited to, the electrical, mechanical, structural, hydrological, geological, and meteorological features).*



Jeffery F. Koerner, P.E.
Registration No. 49441



12-22-07

(Date)



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

December 20, 2007

Mr. Jason Goodwin
Director, Environmental Health and Safety
Calpine Corporation
717 Texas Avenue
Suite 100
Houston, Texas 77002

Re: Draft Air Construction Permit No. 1050221-012-AC (PSD-FL-185A and PSD-FL-287A)
Draft Title V Air Operation Permit Revision Project No. 1050221-014-AV
Auburndale Energy Complex

Dear Mr. Goodwin:

On September 25, 2007, the Calpine Corporation submitted an application to revise Air Permit No. 1050221-012-AC (PSD-FL-185 and PSD-FL-287) and concurrently revise Title V air operation Permit No. 1050221-013-AV. The project will authorize nominal increases in the heat input rates for the four existing combustion turbines. The turbines are installed at the existing Auburndale Energy Complex, which is located at 1501 Derby Avenue (Auburndale Power Plant and Auburndale Peak Energy Center) and 1651 Derby Avenue (Osprey Energy Center), Auburndale, Florida. Enclosed are the following documents:

- The Written Notice of Intent to Issue Air permits;
- The Public Notice of Intent to Issue Air Permits (the actual notice that you must have published in the legal advertisement section of a newspaper of general circulation in the area affected by this project);
- The Technical Evaluation and Preliminary Determination for the air construction permit revisions;
- The Statement of Basis for the Title V Permit revisions;
- The Draft Air Construction Permit revisions and the Draft Title V Permit revision .

If you have any questions, please contact the Project Engineer, Bruce Thomas, at 850/488-0114.

Sincerely,

Trina Vielhauer, Chief
Bureau of Air Regulation

Enclosures

TLV/jfk/bt

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMITS

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

Calpine Corporation
717 Texas Avenue, Suite 100
Houston, Texas 77002

Authorized Representative:
Mr. Jason Goodwin, Director, Environmental Health and Safety

Project No. 1050221-012-AC
Project No. 1050221-014-AV
Heat Input Increases for
Auburndale Energy Complex
Polk County, Florida

Facility Location: The applicant, Calpine Corporation, operates the existing Auburndale Energy Complex, which is located in Polk County at 1501 Derby Avenue (Auburndale Power Plant and Auburndale Peak Energy Center) and 1651 Derby Avenue (Osprey Energy Center), Auburndale, Florida.

Project: The purpose of the project is to revise the original air construction permits (Permit No. 1050221-003-AC and 1050221-004-AC / PSD-FL-185 and Permit No. 1050234-001 / PSD-FL-287) and concurrently revise the Title V air operation permit (Permit No. 1050221-013-AV) to allow increases to the heat input rates for the 156 MW combined cycle unit (EU-001) from 1,214 to 1,364 MMBtu per hour when firing natural gas in wet compression mode. The original operating curve submitted with the construction permit to allow wet compression operation does not accurately reflect the actual operation of the wet compression system. The permit also authorizes heat input increases for the 120 MW simple cycle combustion turbine (EU-006) from 1,591 to 1,776 MMBtu per hour when firing natural gas and from 1,546 to 1,726 MMBtu per hour when firing distillate oil; and a heat input increase for the 540 MW combined cycle turbines (EU-007 and EU-008) from 1,669 to 1,875 MMBtu per hour when firing natural gas. The increases were requested to correct estimates provided by the gas turbine vendor that underestimate the actual performance of the installed turbines. No physical or operational changes are necessary to realize the requested heat input increases. No increase in the emissions standards (concentrations or mass emissions rates) are requested to accommodate the change. The applicant does not expect any emissions increases nor increased utilization as a result of the change. The emissions units will continue to comply with all applicable provisions of the air construction and operation permits.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). Applications for Title V air operation permits are subject to review in accordance with to provisions of Chapter 403, F.S. and Chapters 62-4, 62-210, and 62-213, F.A.C. The projects are not exempt from the permitting procedures for air construction and Title V air operation permits. The Florida Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Bureau of Air Regulation's physical address is 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Bureau of Air Regulation's phone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above.

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue a renewed Title V air operation permit and a concurrent air construction permit revision for the project described above. The applicant has provided reasonable assurance that operation of the proposed equipment will not adversely

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMITS

impact air quality and that the project will comply with all applicable provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a final air construction permit revision and a proposed Title V air operation permit renewal (and subsequent final Title V air operation permit renewal) in accordance with the conditions of the proposed Draft Permits unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Public Notice: Pursuant to Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Permit (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The newspaper used must meet the requirements of Sections 50.011 and 50.031, F.S. in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Permitting Authority at the address or phone number listed above. Pursuant to Rule 62-110.106(5) and (9), F.A.C., the applicant shall provide proof of publication to the Permitting Authority at the above address within 7 days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

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

Comments on the Draft Title V Air Operation Permit Revision: The Permitting Authority will accept written comments concerning the Draft Permit for a period of 30 days from the date of publication of the Public Notice. Written comments must be post-marked by the close of business (5:00 p.m.), on or before the end of this 30-day period by the Permitting Authority at the above address. As part of his or her comments, any person may also request that the Permitting Authority hold a public meeting on this permitting action. If the Permitting Authority determines there is sufficient interest for a public meeting, it will publish notice of the time, date, and location in the Florida Administrative Weekly and in a newspaper of general circulation in the area affected by the permitting action. For additional information, contact the Permitting Authority at the above address or phone number. If written comments or comments received at a public meeting result in a significant change to the Draft Permit, the Permitting Authority will issue a revised Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 850/245-2241; Fax: 850/245-2303). Petitions filed by the applicant or any of the parties listed below must be filed within 14 days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of the attached Public Notice or within fourteen 14 days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 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

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMITS

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 (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact; (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 including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

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

Mediation: Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.



Trina Vielhauer, Chief
Bureau of Air Regulation

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMITS

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Intent to Issue Air Permit package (including the Written Notice of Intent to Issue Air Permit, the Public Notice of Intent to Issue Air Permit, the Technical Evaluation and Preliminary Determination, and the Draft Permit) was sent by electronic mail with received receipt requested before the close of business on 12/21/07 to the persons listed below.

Mr. Jason Goodwin, Calpine Corporation (jgoodwin@calpine.com)

Ms. Heidi Whidden, Calpine Corporation (hwhidden@calpine.com)

Mr. Thomas Davis, ECT (tdavis@ectinc.com)

Ms. Cindy Zhang-Torres, Southwest District Office (Cindy.Zhang-Torres@dep.state.fl.us)

Ms. Kathleen Forney, EPA Region 4 (forney.kathleen@epa.gov)

Clerk Stamp

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


(Clerk)

12/21/07
(Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMITS

Florida Department of Environmental Protection
Division of Air Resource Management, Bureau of Air Regulation

Draft Air Construction Permit No. 1050221-012-AC, Air Construction Permit Revision
Draft Permit No. 1050221-014-AV, Concurrent Title V Air Operation Permit Revision

Auburndale Energy Complex
Polk County

Applicant: The applicant for this project is Calpine Corporation. The applicant's authorized representative and mailing address is: Mr. Jason Goodwin, 717 Texas Avenue, Suite 100, Houston, Texas 77002.

Facility Location: The Calpine Corporation operates an existing electrical generating power plant in Polk County located at 1501 Derby Avenue (Auburndale Power Plant and Auburndale Peak Energy Center) and 1651 Derby Avenue (Osprey Energy Center), Auburndale, Florida.

Project: The purpose of the project is to revise the original air construction permits and concurrently revise the Title V air operation permit to allow increases to the heat input rates for the 156 MW combined cycle unit (EU-001) from 1,214 to 1,364 MMBtu per hour when firing natural gas in wet compression mode. The original operating curve submitted with the construction permit to allow wet compression operation does not accurately reflect the actual operation of the wet compression system. The permit also authorizes heat input increases for the 120 MW simple cycle combustion turbine (EU-006) from 1,591 to 1,776 MMBtu per hour when firing natural gas and from 1,546 to 1,726 MMBtu per hour when firing distillate oil; and a heat input increase for the 540 MW combined cycle turbines (EU-007 and EU-008) from 1,669 to 1,875 MMBtu per hour when firing natural gas. The increases were requested to correct estimates provided by the gas turbine vendor that underestimate the actual performance of the installed turbines. No physical or operational changes are necessary to realize the requested heat input increases. No increase in the emissions standards (concentrations or mass emissions rates) are requested to accommodate the change. The applicant does not expect any emissions increases nor increased utilization as a result of the change. The emissions units will continue to comply with all applicable provisions of the air construction and operation permits.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212, Florida Administrative Code (F.A.C.). Applications for Title V air operation permits are subject to review in accordance with to provisions of Chapter 403, F.S. and Chapters 62-4, 62-210, and 62-213 F.A.C. The projects are not exempt from the permitting procedures for air construction and Title V air operation permits. The Florida Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Bureau of Air Regulation's physical address is 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Bureau of Air Regulation's phone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above.

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of the proposed equipment will not adversely impact air quality and that the project will comply with all applicable provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

(Public Notice to be Published in the Newspaper)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMITS

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

Comments on the Draft Title V Air Operation Permit Revision: The Permitting Authority will accept written comments concerning the Draft Permit for a period of 30 days from the date of publication of the Public Notice. Written comments must be post-marked by the close of business (5:00 p.m.), on or before the end of this 30-day period by the Permitting Authority at the above address. As part of his or her comments, any person may also request that the Permitting Authority hold a public meeting on this permitting action. If the Permitting Authority determines there is sufficient interest for a public meeting, it will publish notice of the time, date, and location in the Florida Administrative Weekly and in a newspaper of general circulation in the area affected by the permitting action. For additional information, contact the Permitting Authority at the above address or phone number. If written comments or comments received at a public meeting result in a significant change to the Draft Permit, the Permitting Authority will issue a revised Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 850/245-2241; Fax: 850/245-2303). Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 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 (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact; (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 including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Public Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final

(Public Notice to be Published in the Newspaper)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMITS

decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.

Objections to the Draft Title V Air Operation Permit: Finally, pursuant to 42 United States Code (U.S.C.) Section 7661d(b)(2), any person may petition the administrator of the EPA within 60 days of the expiration of the Administrator's 45-day review period as established at 42 U.S.C. Section 7661d(b)(1), to object to issuance of any Title V permit. Any petition shall be based only on objections to the Title V permit that were raised with reasonable specificity during the 30 (thirty) day public comment period provided in this notice, unless the petitioner demonstrates to the administrator of the EPA that it was impracticable to raise such objections within the comment period or unless the grounds for such objection arose after the comment period. Filing of a petition with the Administrator of the EPA does not stay the effective date of any Title V permit properly issued pursuant to the provisions of Chapter 62-213, F.A.C. Petitions filed with the Administrator of EPA must meet the requirements of 42 U.S.C Section 7661d(b)(2), and must be filed with the Administrator of the EPA at: U.S. EPA. 401 M Street, S.W., Washington, D.C. 20460.

PERMITTEE

Calpine Corporation Auburndale Energy Complex
717 Texas Avenue, Suite 1000
Houston, TX 77002

Responsible Official:

Mr. Jason M. Goodwin
Director of Environmental Health & Safety

Draft Permit No. 1050221-012-AC
Auburndale Energy Complex
Facility ID No. 1050221
Combustion Turbine Heat Input
Increases

FACILITY AND LOCATION

This permit revises the original air construction permits (Permit No. 1050221-003-AC and 1050221-004-AC / PSD-FL-185 and Permit No. 1050234-001-AC / PSD-FL-287) and concurrently revises the Title V air operation permit (Permit No. 1050221-013-AV) to allow nominal increases to the heat input rates for the four existing combustion turbines. The turbines are installed at the existing Auburndale Energy Complex, which is located at 1501 Derby Avenue (Auburndale Power Plant and Auburndale Peak Energy Center) and 1651 Derby Avenue (Osprey Energy Center), Auburndale, Florida

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.) and Title 40, Parts 60 and 63 of the Code of Federal Regulations (CFR).

(DRAFT)

Joseph Kahn, Director
Division of Air Resource Management

Effective Date

AIR CONSTRUCTION PERMIT REVISIONS

REVISIONS

This permitting action will revise the following specific conditions in Permit No. PSD-FL-185 as follows:

Permit No. 1050221-003-AC

Specific Conditions

Operating Rates

5. f. Based on the lower heating value (LHV) and International Standards Organization (ISO) conditions, the maximum heat input rate to the combustion turbine is 1,364 MMBtu/hr while firing natural gas with the wet compression system in operation.

Permit No. 1050221-004-AC

Section 3 – Emissions Units Specific Conditions

3. Permitted Capacity. The maximum heat input to the combustion turbine from firing natural gas shall not exceed ~~1594~~ 1,776 MMBtu/hour based on the following: 100% base load, a higher heating value (HHV) for natural gas and a compressor inlet air temperature of 32° F. The maximum heat input to the combustion turbine from firing distillate oil shall not exceed ~~1546~~ 1,726 MMBtu/hour based on the following: 100% base load and a compressor inlet air temperature of 32° F. Heat input rates will vary depending upon ambient conditions and the combustion turbine characteristics. [Design; Rule 62-210.200(PTE), F.A.C. and 1050221-004-AC]

This permitting action will revise the following specific conditions in Permit No. PSD-FL-287 as follows:

Permit No. 1050334-001-AC

Section 3 – Emissions Units Specific Conditions

9. Combustion Turbines Capacity: Based on the lower heating value (LHV) of the fuel at ISO conditions, the maximum heat input rate shall not exceed ~~1669~~ 1,875 MMBtu/hour when firing natural gas without power augmentation. The maximum heat input rate will vary depending upon ambient conditions and the combustion turbine characteristics. Manufacturer's curves corrected for site conditions or equations for correction to other ambient conditions shall be maintained by the plant.

PERMITTEE

Calpine Corporation
717 Texas Avenue, Suite 1000
Houston, TX

PLANT

The Calpine Operating Services Corporation operates the Auburndale Energy Complex, which consists of two locations, three plants and three owners as follows:

- Location: 1501 Derby Avenue, Auburndale, Florida
Auburndale Power Plant owned by the Auburndale Power Partners, L.P.
Auburndale Peak Energy Center owned by the Auburndale Peaker Energy Center, LLC.
- Location: 1651 Derby Avenue, Auburndale, Florida
Osprey Energy Center owned by the Calpine Construction Finance Company, L.P.

PROJECT

Project No. 1050221-014-AV revises Title V air operation Permit No. 1050221-013-AV to incorporate the revisions made in air construction Permit No. 1050221-012-AC and revise the original air construction permits (Permit No. 1050221-003-AC and 1050221-004-AC / PSD-FL-185 and Permit No. 1050234-001 / PSD-FL-287) regarding the maximum heat input rates to emissions units EU-001, EU-006, EU-007, and EU-008.

REVISIONS

This permitting action will revise the following specific conditions in current Title V air operating Permit No. 1050221-013-AV as follows:

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

A.2 Permitted Capacity. Based on the lower heating value (LHV) of each fuel and International Standards Organization (ISO) conditions, the maximum heat input rate to the combustion turbine is 1214 MMBtu/hour while firing natural gas with the wet compression system off or 1,364 MMBtu/hr while firing natural gas with the wet compression system in operation and 1170 MMBtu/hour while firing distillate fuel oil. [Rule 62-210.200(PTE), F.A.C., 1050221-012-AC and PSD-FL-185A]

A.12 Testing Requirements. This emissions unit shall operate between 90% and 100% of permitted capacity during the compliance tests as adjusted for compressor inlet temperature (See attached W501D5 ECONOPAC SYSTEM PERFORMANCE GRAPH.) See Appendix C (Common Conditions) of this permit for notification, testing, record keeping and reporting requirements regarding compliance tests. [Chapter 62-297, F.A.C.]

A.14 Frequency of Compliance Tests: The permittee shall conduct tests on the combustion turbine system to demonstrate compliance with the applicable emissions standards in accordance with the following frequencies.

- a. **Annual Tests:** During each federal fiscal year (October 1 - September 30), the permittee shall have a formal compliance test conducted for CO and visible emissions. Compliance testing is only required during the combustion of natural gas fuel, which is the primary fuel. ~~If distillate is fired for more than 400 hours, an annual compliance test shall also be conducted for PM/PM₁₀ emissions while firing distillate oil.~~

Add the following as Conditions A.16c, B.12h, and C.14d CEMS Data Exclusion – Combustor Tuning. CEMS data collected during initial or other major combustor tuning sessions shall be excluded from the CEMS compliance demonstration for short term emission standards provided the tuning session is performed in

accordance with the manufacturer's specifications. All valid emissions data shall be used to demonstrate compliance with annual emissions caps. A "major tuning session" would occur after completion of initial construction, a combustor change-out, a major repair or maintenance to a combustor, or other similar circumstances. Prior to performing any major tuning session, the permittee shall provide the Department's Southwest District Compliance Authority with advance notice that details the activity and proposed tuning schedule. The notice shall be by telephone, facsimile transmittal, or electronic mail. [Rules 62-4.070(3), 62-212.400(PSD), F.A.C., 62-210.700(5) F.A.C. and PSD-FL-185A]

B.1 Permitted Capacity. The maximum heat input to the combustion turbine from firing natural gas shall not exceed ~~1591~~ 1,776 MMBtu/hour based on the following: 100% base load, a higher heating value (HHV) for natural gas and a compressor inlet air temperature of 32° F. The maximum heat input to the combustion turbine from firing distillate oil shall not exceed ~~1546~~ 1,726 MMBtu/hour based on the following: 100% base load and a compressor inlet air temperature of 32° F. Heat input rates will vary depending upon ambient conditions and the combustion turbine characteristics. [Design; Rule 62-210.200(PTE), F.A.C.; and 1050221-004-AC]

B.2 Authorized Fuels.

- a. The combustion turbine shall fire only natural gas with maximum sulfur content of 2 grains of sulfur per 100 dry standard feet of gas (monthly average) or distillate oil with a maximum sulfur content of 0.05% by weight. [Rules 62-210.200(PTE), F.A.C. and 1050221-004-AC]
- b. The combustion turbine shall fire no more than 2,227,400 MMBtu of natural gas during any consecutive 12-month period (equivalent to approximately 1400 hours/year at base load). ~~The use of wet compression as an alternate means of evaporative cooling is authorized when firing natural gas.~~ The total hours of operation of the combustion turbine while firing distillate fuel oil shall not exceed 400 hours during any consecutive 12-month period. The permittee shall install, calibrate, operate and maintain a monitoring system to measure and accumulate the following for each fuel fired: quantity, heat input rate and hours of operation. [Rules 62-4.160(2) and 62-210.200(PTE), F.A.C.; 1050221-004-AC; and 1050221-006-AC]

B.14 Frequency of Compliance Tests

e. Operating Rate During Testing: 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 (per the approved maximum heat input curve) corrected for the average compressor inlet air temperature during the test. 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. compressor inlet air temperature curve downward by an increment equal to the difference between the maximum permitted heat input (corrected for compressor inlet air 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.

[1050221-004-AC; Rules 62-297.310(7)(a)4 and 9, F.A.C.]

C.2 Permitted Capacity - Combustion Turbines: Based on the lower heating value (LHV) of the fuel at ISO conditions, the maximum heat input rate shall not exceed ~~1669~~ 1,875 MMBtu/hour when firing natural gas without power augmentation. The maximum heat input rate will vary depending upon ambient conditions and the combustion turbine characteristics. Manufacturer's curves corrected for site conditions or equations for correction to other ambient conditions shall be maintained by the plant. [Rule 62-210.200(PTE), F.A.C. and PSD-FL-287A]

DRAFT TITLE V AIR OPERATION PERMIT REVISION

C.17 Frequency of Compliance Tests. The permittee shall conduct the following compliance tests:

- a. *Initial Tests*: Initial tests were required for CO, NO_x, PM, VOC, ammonia and visible emissions.
- b. *Annual Tests*: During each federal fiscal year (October 1 - September 30), the permittee shall have a formal compliance test conducted for CO, NO_x, ammonia and visible emissions. ~~Annual tests for CO shall be conducted at 100% capacity with the duct burners off and at 100% load with power augmentation and the duct burners on.~~ The required annual RATA test data may be used to demonstrate compliance with the annual test requirement for CO and NO_x emissions. Compliance with the CO standards serves as a surrogate for compliance with the VOC standards.

Eliminating the STACK CO TESTS

C.19 SCR and Ammonia Slip. The permittee shall be capable of calculating ammonia slip at the Department's request according to the following procedure.

- a. In accordance with the manufacturer's specifications, the permittee shall calibrate, operate and maintain an ammonia flow meter to measure and record the ammonia injection rate to the SCR system of each unit.
- b. The permittee shall develop performance curves for the appropriate ammonia injection rate versus load based on data collected by the NO_x CEMS and the ammonia flow meter. During periods of CEMS downtime, the permittee shall operate at an ammonia flow rate for the given operating load to ensure compliance with the NO_x standard.

C.17 Frequency of Compliance Tests. The permittee shall conduct the following compliance tests:

- a. *Initial Tests:* Initial tests were required for CO, NO_x, PM, VOC, ammonia and visible emissions.
- b. *Annual Tests:* During each federal fiscal year (October 1 - September 30), the permittee shall have a formal compliance test conducted for CO, NO_x, ammonia and visible emissions. ~~Annual tests for CO shall be conducted at 100% capacity with the duct burners off and at 100% load with power augmentation and the duct burners on.~~ The required annual RATA test data may be used to demonstrate compliance with the annual test requirement for CO and NO_x emissions. Compliance with the CO standards serves as a surrogate for compliance with the VOC standards.

C.19 SCR and Ammonia Slip. The permittee shall be capable of calculating ammonia slip at the Department's request according to the following procedure.

- ~~a.~~ In accordance with the manufacturer's specifications, the permittee shall calibrate, operate and maintain an ammonia flow meter to measure and record the ammonia injection rate to the SCR system of each unit.
- ~~b.~~ For each unit, the permittee shall annually conduct simultaneous stack tests for NO_x and ammonia emissions while operating with power augmentation and duct firing. The ammonia injection rate necessary to comply with the NO_x standard shall be established and reported during each performance test. The permittee shall develop performance curves for the appropriate ammonia injection rate versus load based on data collected by the NO_x CEMS and the ammonia flow meter. During periods of CEMS downtime, the permittee shall operate at an ammonia flow rate for the given operating load to ensure compliance with the NO_x standard.
- ~~c.~~ Similarly, the permittee shall conduct tests for a range of load conditions and shall determine and report the ammonia flow rate required to comply with the ammonia and NO_x standards. During periods of NO_x CEMS downtimes or malfunctions, the permittee shall operate at an acceptable ammonia flow rate as established stack test.
- ~~d.~~ c. Ammonia emissions shall be calculated continuously using inlet and outlet NO_x concentrations from the SCR system and ammonia flow supplied to the SCR system. The calculation procedure shall be provided with the CEMS monitoring plan required by 40CFR Part 75. The following calculation represents one means by which the permittee may demonstrate compliance with this condition:
 - (1) Ammonia Slip (ppmvd @ 15% O₂) = (A - (BC/1,000,000)) (1,000,000/B) (D)
 - (2) Where:
 - (3) A = ammonia injection rate (lb/hour) / 17 lb/lb•mol
 - (4) B = dry gas exhaust flow rate (lb/hour) / 29 lb/lb•mol
 - (5) C = change in measured NO_x (ppmvd @ 15% O₂) across catalyst
 - (6) D = correction factor, derived annually during compliance testing by comparing actual to tested ammonia slip.

The calculation along with each newly determined correction factor shall be submitted with each annual compliance test. Calibration data ("as found" and "as left") shall be provided for each measurement device utilized to make the ammonia emission measurement and submitted with each annual compliance test. The calculation will exclude periods of startup and shutdown when determining the ammonia slip limit. The permittee shall notify the Department within 2 business days if the calculated ammonia emissions exceed 9.0 ppmvd corrected to 15% O₂ over a 3-hour block average. The notification shall include a corrective action plan to reduce ammonia emissions below 9 ppmvd corrected to 15% O₂ over a 3-hour block average. Upon specific request by the Department, a special re-test shall occur as described in the previous

DRAFT TITLE V AIR OPERATION PERMIT REVISION

conditions concerning annual test requirements to demonstrate compliance with all NO_x and ammonia slip related permit limits. [PSD-FL-287]

STATEMENT OF BASIS

Project Information

Draft Permit No. 1050221-014-AV
Title V Air Operation Permit Revision

Auburndale Energy Complex
Facility ID No. 1050221

The entire facility is known as the Auburndale Energy Complex, which consists of two locations, three plants and three owners:

Location: 1501 Derby Avenue, Auburndale, Florida
Auburndale Power Plant owned by the Auburndale Power Partners, L.P.
Auburndale Peak Energy Center owned by the Auburndale Peaker Energy Center, LLC.

Location: 1651 Derby Avenue, Auburndale, Florida
Osprey Energy Center owned by the Calpine Construction Finance Company, L.P.

Calpine Operating Services Company, Inc. operates all of the units at the plants. The nominal generating capacity of the plant is 816 megawatts (MW).

Facility Description

The Auburndale Energy Complex consists of the following emissions units:

EU No.	Brief Description
Auburndale Power Plant	
001	Nominal 156 MW combined cycle unit consisting of a nominal 121 MW combustion turbine-electrical generator set, an unfired heat recovery steam generator (HRSG) and a nominal 35 MW steam-electrical generator set.
002	Fuel oil storage tanks
003	Emergency generators
004	Heating units and engines
005	Surface coating operations
Auburndale Peak Energy Center	
006	Nominal 120 MW simple cycle combustion turbine-electrical generator set
Osprey Energy Center	
007	Nominal 170 MW combustion turbine-electrical generator set; part of a combined cycle unit*
008	Nominal 170 MW combustion turbine-electrical generator set; part of a combined cycle unit*
009	HRSG equipped with 250 MMBtu per hour duct burner system; part of a combined cycle unit*
010	HRSG equipped with 250 MMBtu per hour duct burner system; part of a combined cycle unit*
011	Cooling tower; part of a combined cycle unit*

* Emissions Units 007 – 011 comprise a nominal 540 MW combined cycle unit consisting of two combustion turbines, two HRSG with duct burner systems, and one shared nominal 200 MW steam-electrical generator set.

The facility also operates other miscellaneous unregulated and insignificant emissions units and activities.

STATEMENT OF BASIS

Regulatory Classifications

The facility is subject to the following primary regulatory classifications and applicable state regulations of the Florida Administrative Code (F.A.C.) as well as the federal New Source Performance Standards (NSPS) in the Code of Federal Regulations (CFR).

- The facility is a Title V major source in accordance with Chapter 62-213, F.A.C. *62-213*
- The facility is a major stationary source pursuant to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD).
- The facility operates units subject to Phase II of the federal Acid Rain Program.
- The facility is subject to power plant site certification.
- The facility is not a major source of hazardous air pollutants.
- The four combustion turbines are regulated under the NSPS Subpart A (General Provisions) and Subpart GG (Standards of Performance for Stationary Gas Turbines) in 40 CFR 60.
- The two HRSG with duct burner systems are subject to NSPS Subpart A (General Provisions) and Subpart Da (Standards of Performance for Electric Utility Steam Generating Units) in 40 CFR 60.
- Although the combustion turbines use add-on wet injection systems to control nitrogen oxide (NO_x) emissions when firing oil, Compliance Assurance Monitoring (CAM) plans are not required because each unit demonstrates compliance with the NO_x standards by data collected from the continuous emissions monitoring systems.

Also included in this permit are miscellaneous unregulated and insignificant activities.

Project Review

Purpose

On September 25, 2007, the applicant submitted an application to revise the original air construction permits (Permit No. 1050221-003-AC / PSD-FL-185 and Permit No. 1050234-001 / PSD-FL-287) and concurrently revise the Title V air operation permit (Permit No. 1050221-013-AV) for the following items.

III
Section ~~3~~, Condition A.2: Revise the maximum heat input to 1,364 MMBtu/hr using a lower heating value (LHV) while firing natural gas with the wet compression system in operation.

III
Section ~~3~~, Condition A.12: Added language clarifying compliance test should occur between 90% and 100% of permitted capacity as adjusted for compressor inlet temperature.

Section ~~3~~, Condition A.14a.: Clarified that annual compliance testing is only required when firing natural gas.

Section ~~3~~, Conditions A.16c, B.12h, and C.14d: Added a condition to clarify CEMS data exclusions when conducting major combustor tuning.

III
Section ~~3~~, Condition B.2: (Revise the maximum heat input to 1,776 MMBtu/hr using a lower heating value *?* *HHV*) while firing natural gas and 1,726 MMBtu/hr when firing distillate oil.) Deleted reference to wet compression system as this operation is no longer applicable. *B2*

Section ~~3~~, Condition B.14e: Added language clarifying the operating rate during compliance testing.

Section ~~3~~, Condition C.2: Revise the maximum heat input to 1,875 MMBtu/hr using a lower heating value *LHV* while firing natural gas.

Section ~~3~~, Condition C.17: Incorporated conditions from Permit No. 1050334-007-AC allowing carbon monoxide (CO) CEMS data from the annual RATA testing to substitute for annual CO stack test requirements.

spell out also

STATEMENT OF BASIS

Regulatory Classifications

The facility is subject to the following primary regulatory classifications and applicable state regulations of the Florida Administrative Code (F.A.C.) as well as the federal New Source Performance Standards (NSPS) in the Code of Federal Regulations (CFR).

- The facility is a Title V major source in accordance with Chapter 62-213, F.A.C.
- The facility is a major stationary source pursuant to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD).
- The facility operates units subject to Phase II of the federal Acid Rain Program.
- The facility is subject to power plant site certification.
- The facility is not a major source of hazardous air pollutants.
- The four combustion turbines are regulated under the NSPS Subpart A (General Provisions) and Subpart GG (Standards of Performance for Stationary Gas Turbines) in 40 CFR 60.
- The two HRSG with duct burner systems are subject to NSPS Subpart A (General Provisions) and Subpart Da (Standards of Performance for Electric Utility Steam Generating Units) in 40 CFR 60.
- Although the combustion turbines use add-on wet injection systems to control nitrogen oxide (NO_x) emissions when firing oil, Compliance Assurance Monitoring (CAM) plans are not required because each unit demonstrates compliance with the NO_x standards by data collected from the continuous emissions monitoring systems.

Also included in this permit are miscellaneous unregulated and insignificant activities.

Project Review

Purpose

On September 25, 2007, the applicant submitted an application to revise the original air construction permits (Permit No. 1050221-003-AC / PSD-FL-185 and Permit No. 1050234-001 / PSD-FL-287) and concurrently revise the Title V air operation permit (Permit No. 1050221-013-AV) for the following items.

Section III, Condition A.2: Revise the maximum heat input to 1,364 MMBtu/hr using a lower heating value (LHV) while firing natural gas with the wet compression system in operation.

Section III, Condition A.12: Added language clarifying compliance test should occur between 90% and 100% of permitted capacity as adjusted for compressor inlet temperature.

Section III, Condition A.14a.: Clarified that annual compliance testing is only required when firing natural gas.

Section III, Conditions A.16c, B.12h, and C.14d: Added a condition to clarify CEMS data exclusions when conducting major combustor tuning.

Section III, Condition B.2: Revise the maximum heat input to 1,776 MMBtu/hr using a higher heating value (HHV) while firing natural gas and 1,726 MMBtu/hr when firing distillate oil. Deleted reference to wet compression system as this operation is no longer applicable.

Section III, Condition B.14e: Added language clarifying the operating rate during compliance testing.

Section III, Condition C.2: Revise the maximum heat input to 1,875 MMBtu/hr using a LHV while firing natural gas.

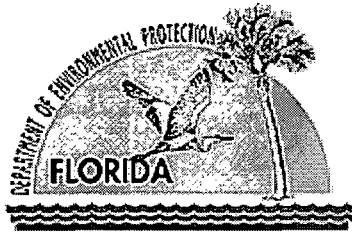
Section III, Condition C.17: Incorporated conditions from Permit No. 1050334-007-AC allowing carbon monoxide (CO) continuous emissions monitoring system (CEMS) data from the annual RATA testing to substitute for annual CO stack test requirements.

STATEMENT OF BASIS

Secton III, Condition C.19b: Revised language to clarify ammonia flow rate requirements during periods of NOx CEMS downtime or malfunction.

Conclusion

Based on reasonable assurances of compliance provided by the applicant and the Responsible Official's certification of compliance, the Department will issue the Title V air operation permit under the provisions of Chapter 403, Florida Statutes (F.S.) and F.A.C. Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-214, 62-296 and 62-297. The permit authorizes operation of the facility shown on the application and approved drawings, plans, and other documents, attached hereto or on file with the permitting authority, in accordance with the terms and conditions of this permit.



**TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION**

APPLICANT

Calpine Corporation
717 Texas Avenue
Suite 100
Houston, Texas 77002

Auburndale Energy Complex
ARMS Facility ID No. 1050221

PROJECT

Draft Permit No. 1050221-012-AC
Combustion Turbine Heat Input Increases

COUNTY

Polk County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation
Air Permitting North Section
2600 Blair Stone Road, MS#5505
Tallahassee, Florida 32399-2400

1. GENERAL PROJECT INFORMATION

Facility Description and Location

Calpine Operating Services Company, Inc. operates a nominal 816 megawatt (MW) electric generation facility located in Polk County. The entire facility is known as the Auburndale Energy Complex, which consists of two locations, three plants and three owners:

Location: 1501 Derby Avenue, Auburndale, Florida
Auburndale Power Plant owned by the Auburndale Power Partners, L.P.
Auburndale Peak Energy Center owned by the Auburndale Peaker Energy Center, LLC.

Location: 1651 Derby Avenue, Auburndale, Florida
Osprey Energy Center owned by the Calpine Construction Finance Company, L.P.

The Auburndale Power Plant consists of a nominal 156 MW combined cycle unit, emergency generators, heating units and engines. The Auburndale Peak Energy Center consists of a nominal 120 MW simple cycle combustion turbine-electrical generator set. The Osprey Energy Center includes a nominal 540 MW combined cycle unit consisting of two combustion turbines, two HRSG with duct burner systems, one shared nominal 200 MW steam-electrical generator set and a cooling tower. The facility also operates other miscellaneous unregulated and insignificant emissions units and activities.

The reference UTM Coordinates are Zone 17, 420.8 km East and 3103.3 km North. Zone 17, 405.02 km East and 3057.18 km North. The existing electrical generating power plant has a Standard Industrial Classification Code of SIC No. 4911.

Primary Regulatory Categories

- The facility is a Title V major source in accordance with Chapter 62-213, F.A.C.
- The facility is a major stationary source pursuant to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD).
- The facility operates units subject to Phase II of the federal Acid Rain Program.
- The facility is subject to power plant site certification.
- The facility is not a major source of hazardous air pollutants.

Project Description

The applicant requests a heat input rate increase for the 156 MW combined cycle unit (EU-001) from 1,214 to 1,364 MMBtu per hour when firing natural gas in wet compression mode. The original operating curve submitted with the construction permit to allow wet compression operation does not accurately reflect the actual operation of the wet compression system.

The applicant also requests heat input increases for the 120 MW simple cycle combustion turbine (EU-006) from 1,591 to 1,776 MMBtu per hour when firing natural gas and from 1,546 to 1,726 MMBtu per hour when firing distillate oil; and a heat input increase for the 540 MW combined cycle turbines (EU-007 and EU-008) from 1,669 to 1,875 MMBtu per hour when firing natural gas. The increases are requested to correct estimates provided by the gas turbine vendor that underestimate the actual performance of the installed turbines.

No physical or operational changes are necessary to realize the requested heat input increases. No increase in the emissions standards (concentrations or mass emissions rates) are requested to accommodate the change. The applicant does not expect any emissions increases nor increased utilization as a result of the change. The emissions units will continue to comply with all applicable provisions of the air construction and operation permits.

Processing Schedule

September 25, 2007 Department received the application, application complete.

2. APPLICABLE REGULATIONS

State Regulations

This project is subject to the applicable rules and regulations defined in the following F.A.C. Chapters: 62-4 (Permitting Requirements); 62-204 (Ambient Air Quality Requirements, PSD Increments, and Federal Regulations Adopted by Reference); 62-210 (Permits Required, Public Notice, Reports, Stack Height Policy, Circumvention, Excess Emissions, and Forms); 62-212 (Preconstruction Review, PSD Review and BACT, and Non-attainment Area Review and LAER); 62-213 (Title V Air Operation Permits for Major Sources of Air Pollution); 62-296 (Emission Limiting Standards); and 62-297 (Test Methods and Procedures, Continuous Monitoring Specifications, and Alternate Sampling Procedures). PSD applicability and the preconstruction review requirements of Rule 62-212.400, F.A.C. are discussed in Section 3 of this report. This project will not result in any newly applicable state regulations.

Federal Regulations

The Environmental Protection Agency establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 identifies New Source Performance Standards (NSPS) for a variety of industrial activities. Part 61 specifies National Emissions Standards for Hazardous Air Pollutant (NESHAP) based on specific pollutants. Part 63 specifies NESHAP provisions based on the Maximum Achievable Control Technology (MACT) for given source categories. Federal regulations are adopted in Rule 62-204.800, F.A.C. This project will not result in any newly applicable federal regulations.

3. PSD APPLICABILITY REVIEW

General PSD Applicability

The Department regulates major stationary sources in accordance with Florida's PSD program pursuant to Rule 62-212.400, F.A.C. PSD preconstruction review is required in areas that are currently in attainment with the state and federal Ambient Air Quality Standards (AAQS) or areas designated as "unclassifiable" for these regulated pollutants. As defined in Rule 62-210.200, F.A.C., a facility is considered a "major stationary source" if it emits or has the potential to emit 5 tons per year of lead, 250 tons per year or more of any PSD pollutant, or 100 tons per year or more of any PSD pollutant and the facility belongs to one of the 28 listed PSD major facility categories. PSD pollutants include: carbon monoxide (CO); nitrogen oxides (NO_x); sulfur dioxide (SO₂); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less (PM₁₀); volatile organic compounds (VOC); lead (Pb); Fluorides (Fl); sulfuric acid mist (SAM); hydrogen sulfide (H₂S); total reduced sulfur (TRS), including H₂S; reduced sulfur compounds, including H₂S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO₂ and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as nonmethane organic compounds (NMOC); and mercury (Hg).

For major stationary sources, PSD applicability is based on emissions thresholds known as the "significant emission rates" as defined in Rule 62-210.200, F.A.C. Emissions of PSD pollutants from the project exceeding these rates are considered "significant" and the Best Available Control Technology (BACT) must be employed to minimize emissions of each PSD pollutant. Although a facility may be "major" for only one PSD pollutant, a project must include BACT controls for any PSD pollutant that exceeds the corresponding significant emission rate. In addition, applicants must provide an Air Quality Analysis for each PSD pollutant.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

PSD Applicability for the Project

The project is located in Polk County, which is in an area that is currently in attainment with the state and federal AAQS or otherwise designated as unclassifiable. The existing plant emits or has the potential to emit 250 tons per year or more of at least one PSD pollutant. Therefore, the facility is a major stationary source and the project is subject to a PSD applicability review.

The applicant provided the following Table to summarize the projected emissions increases based on the current/requested heat input limit and the NO_x concentration limit:

Emission Unit	NO _x Permit Limit (TPY)	Projected Increase (TPY)
EU-001, 156 MW Combined Cycle Unit	177	0
EU-006, 120 MW Simple Cycle Unit	115	0
EU-007, 170 MW Combined Cycle Unit	95	11.8
EU-008, 170 MW Combined Cycle Unit	95	11.8

For the simple cycle unit (EU-006), the Department agrees that the small change in heat input rate will not result in increased utilization. Increased utilization would be the result of demand increase and not a result of this project. Therefore, the project results in no net emissions increase for the simple cycle unit.

For the combined cycle units, the Department reviewed emissions test data for the last three years conducted at 100% or more of the current maximum heat input rates. The following table summarizes the projected CO and NO_x emissions increases based on this data, and the requested heat input rate increase and 8760 hours per year of operation.

Emission Unit	NO _x Test Data (lb/MMBtu)	CO Test Data lb/MMBtu	Requested Heat Input Increase (MMBtu)	Potential NO _x Increase (TPY)	Potential CO Increase (TPY)
EU-001, 156 MW Combined Cycle Unit	0.010	0.0001	150	6.6	.08
EU-007, 170 MW Combined Cycle Unit	0.012	0.010	206	11.0	9.0
EU-008, 170 MW Combined Cycle Unit	0.012	0.008	206	11.0	7.3

The estimated potential emissions increases for NO_x and CO of 28.6 and 16.4 tons per year, respectively, are

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

well below the PSD significant emissions rates for NO_x (40 tons/year) and CO (100 tons/year). The use of pipeline natural gas as the primary fuel source with No. 2 distillate fuel oil serving as a backup fuel will ensure emissions of PM/PM₁₀/PM_{2.5}, SO₂ and VOC will be less than these pollutants and any potential increases would also be well below the PSD significant emissions rates. Based on this review, the Department does not believe the project will result in significant net emissions increases. Therefore, the draft permit will authorize the requested revised heat input rates.

PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the Draft Permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the Draft Permit. Bruce Thomas is the project engineer responsible for reviewing the application and drafting the permit changes. Additional details of this analysis may be obtained by contacting the project engineer at the Department's Bureau of Air Regulation at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.