Friday, Barbara

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

Cc: Thomas, Bruce X.; Koerner, Jeff

Subject: PROPOSED Title V Permit Revision No.: 1050221-014-AV - Auburndale Energy Complex

Attachments: 1050221014ProposedCoverLetter&ProposedDetermination.pdf; 1050221-014-AV - Appendices.pdf; 1050221-014-AV - Proposed Permit.pdf; 1050221-014-AV - SOB.pdf; 1050221-014-AV Proposed Changes.pdf

Dear Sir/Madam:

A copy of the "PROPOSED PERMIT DETERMINATION" and the related permit documents for the above referenced facility are attached. This e-mail is being provided as a courtesy to inform you that the DRAFT permit has become a PROPOSED permit, and that the PROPOSED permit has been transmitted to the USEPA for their review.

Pursuant to Section 403.0872(6), Florida Statutes, if no objection to the PROPOSED permit is made by the USEPA within 45 days, the PROPOSED permit will become a FINAL permit no later than 55 days after the date on which the PROPOSED permit was mailed (posted) to USEPA. If USEPA has an objection to the PROPOSED permit, the FINAL permit will not be issued until the permitting authority receives written notice that the objection is resolved or withdrawn.

The attached document(s) is(are) 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

Friday, Barbara

From: System Administrator
To: Thomas, Bruce X.; Zhang-Torres; Koerner, Jeff
Sent: Tuesday, February 19, 2008 2:39 PM
Subject: Delivered:PROPOSED Title V Permit Revision No.: 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.; Koerner, Jeff
Subject:	PROPOSED Title V Permit Revision No.: 1050221-014-AV - Auburndale Energy Complex
Sent:	2/19/2008 2:39 PM

was delivered to the following recipient(s):

Thomas, Bruce X. on 2/19/2008 2:39 PM
Zhang-Torres on 2/19/2008 2:39 PM
Koerner, Jeff on 2/19/2008 2:39 PM

Friday, Barbara

From: Exchange Administrator
Sent: Tuesday, February 19, 2008 2:39 PM
To: Friday, Barbara
Subject: Delivery Status Notification (Relay)

Attachments: ATT124543.txt; PROPOSED Title V Permit Revision No.: 1050221-014-AV - Auburndale Energy Complex

ATT124543.txt (284 B)

PROPOSED Title V Permit Revisi...

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: Exchange Administrator
Sent: Tuesday, February 19, 2008 2:40 PM
To: Friday, Barbara
Subject: Delivery Status Notification (Relay)

Attachments: ATT124613.txt; PROPOSED Title V Permit Revision No.: 1050221-014-AV - Auburndale Energy Complex

ATT124613.txt (367 B)

PROPOSED Title V Permit Revisi...

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: Mail Delivery System [MAILER-DAEMON@mseive01.rtp.epa.gov]
Sent: Tuesday, February 19, 2008 2:40 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 47BB3087_21452_20343_9
```

Friday, Barbara

From: Jason Goodwin [jgoodwin@calpine.com]
To: undisclosed-recipients
Sent: Tuesday, February 19, 2008 2:42 PM
Subject: Read: PROPOSED Title V Permit Revision No.: 1050221-014-AV - Auburndale Energy Complex

Your message

To: jgoodwin@calpine.com
Subject:

was read on 2/19/2008 2:42 PM.

Friday, Barbara

From: Mailer-Daemon@ectinc.com
Sent: Tuesday, February 19, 2008 2:42 PM
To: Friday, Barbara
Subject: Confirm: 'PROPOSED Title V Permit Revision No.: 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: <771B35D8D1641F49A264F36B4249DC1D0103FF5C@tlhexsmb5.floridadep.net>
To : tdavis@ectinc.com
From : Barbara.Friday@dep.state.fl.us
Subject : PROPOSED Title V Permit Revision No.: 1050221-014-AV - Auburndale Energy Complex
Date : Tue, 19 Feb 2008 14:39:04 -0500

Receiving Domain: ectinc.com

Friday, Barbara

From: Zhang-Torres
To: Friday, Barbara
Sent: Tuesday, February 19, 2008 3:14 PM
Subject: Read: PROPOSED Title V Permit Revision No.: 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.; Koerner, Jeff
Subject:	PROPOSED Title V Permit Revision No.: 1050221-014-AV - Auburndale Energy Complex
Sent:	2/19/2008 2:39 PM

was read on 2/19/2008 3:14 PM.

Friday, Barbara

From: Thomas, Bruce X.
To: Friday, Barbara
Sent: Wednesday, February 20, 2008 9:04 AM
Subject: Read: PROPOSED Title V Permit Revision No.: 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.; Koerner, Jeff
Subject:	PROPOSED Title V Permit Revision No.: 1050221-014-AV - Auburndale Energy Complex
Sent:	2/19/2008 2:39 PM

was read on 2/20/2008 9:04 AM.

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

February 18, 2008

Mr. Jason M. Goodwin
Calpine Corporation
717 Texas Avenue, Suite 1000
Houston, TX 77002

Re: Title V Air Operation Permit Revision
Proposed Permit Project No. 1050221-014-AV
Auburndale Energy Complex

Dear Mr. Goodwin:

One copy of the Proposed Determination for the Title V Air Operation Permit Renewal for the Auburndale Energy Complex located at 1501 and 1651 Derby Avenue in Auburndale, Polk County, is enclosed. This letter is only a courtesy to inform you that the Draft Permit has become a Proposed Permit. An electronic version of this determination has been posted on the Division of Air Resources Management's web site for the United States Environmental Protection Agency (USEPA) Region 4 office's review. The web site address is: "http://www.dep.state.fl.us/air/eproducts/ards/default.asp". Pursuant to Section 403.0872(6), Florida Statutes, if no objection to the Proposed Permit is made by the USEPA within 45 days, the Proposed Permit will become a Final Permit no later than 55 days after the date on which the Proposed Permit was mailed (posted) to USEPA. If USEPA has an objection to the Proposed Permit, the Final Permit will not be issued until the permitting authority receives written notice that the objection is resolved or withdrawn.

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

Sincerely,

Trina Vielhauer, Chief
Bureau of Air Regulation

TLV/jfk/bt

Enclosures

Copy furnished to:
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)

I. Public Notice.

An Intent to Issue a Title V Air Operation Permit Revision to Vandolah Power Company L.L.C., which is located in Polk County at the existing Auburndale Energy Complex, 1501 Derby Avenue (Auburndale Power Plant and Auburndale Peak Energy Center) and 1651 Derby Avenue (Osprey Energy Center), Auburndale, was clerked on December 21, 2007. The project will revise Title V Air Operation Permit No. 1050221-013-AV. The Public Notice of Intent to Issue Title V Air Operation Permit Revision was published in The Ledger on January 5, 2008. The Draft Permit was available for public inspection at the Southwest District in Temple Terrace and the permitting authority's office in Tallahassee. Proof of publication of the Public Notice of Intent to Issue Title V Air Operation Permit Revision was received on January 7, 2008.

II. Comments.

No comments on the Draft Permit were received from the public or the Department's Southwest District Office. On January 2 and January 31, 2008 the applicant submitted comments which are summarized below with the Department's corresponding response.

1. *Comment:* The applicant requested the NO_x limit for EU-001 in Section 3, Condition A.8a. be defined as a 12 month *equivalent* average consistent with the definition and calculation of the 12 month rolling NO_x average in Condition A.8.e.

Response: Section 3, Condition A.8a. has been modified as follows:

a. *Natural Gas*: 15 ppmvd corrected to 15% oxygen based on a 24-hour block average as defined below; 9 ppmvd corrected to 15% oxygen based on a 12-month rolling equivalent average as defined below; 78.6 lb/hour; and 177 tons/year based on a 12-month rolling total for the combined total of natural gas and distillate fuel oil firing.

2. *Comment:* The applicant requested clarifying language stating the span and range requirements for the EU-006 NO_x and O_2 monitor shall be based on the 40 CFR 75 requirements.

Response: Section 3, Condition B.12a. has been modified as follows:

The NO_X monitor shall be certified pursuant to 40 CFR Part 75 and shall be operated and maintained in accordance with the applicable requirements of 40 CFR Part 75, Subparts B and C. Record keeping and reporting shall be conducted pursuant to 40 CFR Part 75, Subparts F and G. ~~The span for the lower range shall not be greater than 30 ppmvd corrected to 15% oxygen and the span for the and upper range shall not be greater than 100 ppmvd corrected to 15% oxygen.~~ Annual RATA tests required for the NO_X monitor shall be performed using EPA Method 20 or 7E in Appendix A of 40 CFR 60. The permittee shall conduct an annual RATA test at 100% output in accordance with the applicable CEMS requirements. The NO_X monitor shall be a dual range monitor.

3. *Comment:* The applicant requested EU-006 be exempt from the annual CO RATA testing if the unit runs less than 400 hours per year, or requested language that would require testing in conjunction with the 40 CFR 75 NO_x RATA requirements.

Response: Section 3, Condition B.14d. has been modified as follows:

d. If the unit does not combust natural gas for greater than 400 hours during the federal fiscal year, the annual compliance tests are not required, and the annual CO RATA test shall be conducted in conjunction with the next required Part 75 NO_x RATA. Annual RATA testing at 100% output may be utilized to satisfy the annual testing requirements for CO and NO_X. No other methods may be used for compliance testing without prior written approval from the Department.

4. *Comment:* The applicant requested we add language to the fuel sulfur monitoring requirements in Section 3, Conditions A.15 and B.15 to clarify the methods used must be in accordance with

the approved 40 CFR 75 methods.

Response: Section 3, Conditions A.15 and B.15 have been modified as follows:

A.15 Fuel Sulfur Monitoring. The permittee shall determine compliance with the sulfur content standard of 0.05% by weight for liquid fuels as follows: ASTM D129-91, D1552-90, D2280-71, D2880-96, D2622-92, D4292, D4294-90, D5453, ~~or~~ the latest editions, or in accordance with approved 40 CFR Part 75 methods. The permittee shall determine compliance with the sulfur content standard of gaseous fuels as follows: ~~shall be used to determine the sulfur content of liquid fuels; and~~ ASTM D1072-80/90/94, D3031-81/86, D3246-81/92, D4084-82/94, D4468-85, D5504-94, ~~or~~ the latest editions, or in accordance with approved 40 CFR Part 75 methods. ~~shall be used to determine the sulfur content of gaseous fuels.~~ The applicable ranges of some ASTM methods mentioned above are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the approval of the Administrator. [40 CFR 60.335 and PSD-FL-185]

B.15 Fuel Sulfur Monitoring. The permittee shall demonstrate compliance with the fuel sulfur limit for natural gas specified in this permit by maintaining records of the average sulfur content of the natural gas being supplied for each month of operation in accordance with the following methods: ASTM D1072-80/90/94, D3031-81/86, D3246-81/92, D4084-82/94, D4468-85, D5504-94, ~~or~~ the latest editions, or in accordance with approved 40 CFR Part 75 methods. The owner or operator shall determine compliance with the sulfur content standard of 0.05% by weight for distillate oil in accordance with the following methods: ASTM D129-91, D1552-90, D2280-71, D2880-96, D2622-92, D4292, D4294-90, ~~or~~ the latest editions, or in accordance with approved 40 CFR Part 75 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. 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 SO_2 standard. [Rules 62-4.070(3) and 62-4.160(15); and 1050221-004-AC]

5. *Comment:* The applicant has requested greater flexibility in determing the ammonia injection flowrate to EU-008 and EU-009 during periods of NO_x CEMS downtimes or malfunctions. The applicant has requested we include language to allow the ammonia injection rate to be based on the previous quarter's operating hours for NO_x, ammonia flow and load during periods of NO_x CEMS downtimes or malfunctions, and adjust the ammonia flow rate as necessary to comply with NOx standard.

Response: Section 3, Condition C.19c. has been modified as follows:

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 adjust the ammonia injection rate based on the previous quarter's operating hours for NO_x, ammonia flow and load and adjust the ammonia flow rate as necessary to comply with NO_x standard. ~~operate at an acceptable ammonia flow rate as established stack test.~~

III. Conclusion.

Since only the minor revisions were made to the Draft permit, the Draft Permit becomes the Proposed Permit with the changes described above.

Project Information

Proposed 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.

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 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.

Section 3, Condition A.8a: Added language clarifying the definition of a 12 month rolling average.

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, Condition A.15 and B.15: Added language to the fuel sulfur monitoring requirements to clarify the methods used must be in accordance with the approved 40 CFR 75 methods.

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

Section 3, Condition B.1: 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 3, Condition B.2: Deleted reference to wet compression operation as this operation is no longer applicable.

Section 3, Condition B.12a: Deleted language clarifying that operation and maintenance of the NO_x monitor shall be in accordance with the applicable requirements of 40 CFR 75.

Section 3, Condition B.14d Added language allowing the annual CO RATA test to be conducted in conjunction with the next required NO_x RATA when EU-006 operates less than 400 hours per year.

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 LHV while firing natural gas.

Section 3, 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.

Section 3, 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.

PERMITTEE

Calpine Corporation
717 Texas Avenue, Suite 1000
Houston, TX 77002

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 regarding the maximum heat input rates to emissions units EU-001, EU-006, EU-007, and EU-008, and minor changes requested by the applicant as described in the Proposed Determination.

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.8 NOx Standards. NO_X emissions shall not exceed the following:

a. *Natural Gas*: 15 ppmvd corrected to 15% oxygen based on a 24-hour block average as defined below; 9 ppmvd corrected to 15% oxygen based on a 12-month rolling equivalent average as defined below; 78.6 lb/hour; and 177 tons/year based on a 12-month rolling total for the combined total of natural gas and distillate fuel oil firing.

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/PM_{10} emissions while firing distillate oil.~~

A.15 Fuel Sulfur Monitoring. The permittee shall determine compliance with the sulfur content standard of 0.05% by weight for liquid fuels as follows: ASTM D129-91, D1552-90, D2280-71, D2880-96, D2622-92, D4292, D4294-90, D5453, ~~or~~ the latest editions, or in accordance with approved 40 CFR Part 75 methods. The permittee shall determine compliance with the sulfur content standard of gaseous fuels as follows: ~~shall be used to determine the sulfur content of liquid fuels; and~~ ASTM D1072-80/90/94, D3031-81/86, D3246-81/92, D4084-82/94, D4468-85, D5504-94, ~~or~~ the latest editions, or in accordance with approved 40 CFR Part 75 methods. ~~shall be used to determine the sulfur content of gaseous fuels.~~ The applicable ranges of some ASTM methods mentioned above are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the approval of the Administrator. [40 CFR 60.335 and PSD-FL-185]

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.12 CO and NO_X CEMS. The owner or operator shall calibrate, maintain, and operate a CEMS in the exhaust stack of this emissions unit to measure and record the emissions of NO_X and CO from the emissions units, and the oxygen (O_2) content of the flue gas at the location where NO_X and CO are monitored, in a manner sufficient to demonstrate compliance with the emission limits of this permit. The CEMS shall be used to demonstrate compliance with the emission limits for NO_X and CO within this

permit.

a. The NO_X monitor shall be certified pursuant to 40 CFR Part 75 and shall be operated and maintained in accordance with the applicable requirements of 40 CFR Part 75, Subparts B and C. Record keeping and reporting shall be conducted pursuant to 40 CFR Part 75, Subparts F and G. ~~The span for the lower range shall not be greater than 30 ppmvd corrected to 15% oxygen and the span for the upper range shall not be greater than 100 ppmvd corrected to 15% oxygen.~~ Annual RATA tests required for the NO_X monitor shall be performed using EPA Method 20 or 7E in Appendix A of 40 CFR 60. The permittee shall conduct an annual RATA test at 100% output in accordance with the applicable CEMS requirements. The NO_X monitor shall be a dual range monitor.

B.14 Frequency of Compliance Tests

d. If the unit does not combust natural gas for greater than 400 hours during the federal fiscal year, the annual compliance tests are not required, and the CO RATA test shall be conducted in conjunction with the next required Part 75 NO_x RATA. Annual RATA testing at 100% output may be utilized to satisfy the annual testing requirements for CO and NO_X. No other methods may be used for compliance testing without prior written approval from the Department.

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.]

B.15 Fuel Sulfur Monitoring. The permittee shall demonstrate compliance with the fuel sulfur limit for natural gas specified in this permit by maintaining records of the average sulfur content of the natural gas being supplied for each month of operation in accordance with the following methods: ASTM D1072-80/90/94; D3031-81/86; D3246-81/92; D4084-82/94; D4468-85; D5504-94; ~~or~~ the latest editions, or in accordance with approved 40 CFR Part 75 methods. The owner or operator shall determine compliance with the sulfur content standard of 0.05% by weight for distillate oil in accordance with the following methods: ASTM D129-91; D1552-90; D2280-71; D2880-96; D2622-92; D4292; D4294-90; ~~or~~ the latest editions, or in accordance with approved 40 CFR Part 75 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. 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 SO_2 standard. [Rules 62-4.070(3) and 62-4.160(15); and 1050221-004-AC]

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

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.

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 adjust the ammonia injection rate based on the previous quarter's operating hours for NO_X, ammonia flow and load and adjust the ammonia flow rate as necessary to comply with NO_X standard. ~~operate at an acceptable ammonia flow rate as established stack test.~~

d. 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% O_2) = (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% O_2) 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% O_2 over a 3-hour block average. The notification shall include a corrective action plan to reduce ammonia emissions below 9 ppmvd corrected to 15% O_2 over a 3-hour block average. Upon specific request by the Department, a special re-test shall occur as described in the previous conditions concerning annual test requirements to demonstrate compliance with all NO_X and ammonia slip related permit limits. [PSD-FL-287]

Memorandum

Florida Department of Environmental Protection

TO:	Trina Vielhauer, Chief Bureau of Air Regulation
THROUGH	Jeff Koerner, Air Permitting North Program
FROM:	Bruce Thomas, Air Permitting North Program
DATE:	February 13, 2008
SUBJECT:	Air Permit No. 1050221-014-AV Auburndale Energy Complex Title V Air Operation Permit Revision

Attached for your review are the following items:

- Cover letter with Proposed Determination;
- Statement of Basis;
- Proposed Permit Revisions

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 regarding the maximum heat input rates to emissions units EU-001, EU-006, EU-007, and EU-008, and revises specific conditions in current Title V air operating Permit No. 1050221-013-AV. The applicant submitted comments requesting minor language clarifications that do not substantially change the Draft Permit and which are summarized in the attached Proposed Determination. I recommend your approval of the attached Proposed Permit for this project.

Attachments

JFK/bxt