



CALPINE CORPORATION

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HOUSTON, TX 77002

May 20, 2010

Federal Express Number:
7935 6091 8425

Jeff Koerner, P.E.
Administrator—New Source Review
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399
850-921-9536

RECEIVED
MAY 26 2010
BUREAU OF
AIR REGULATION

**RE: Request for Permit Modification - Santa Rosa Energy Center
Pace, Santa Rosa County, Florida – Facility ID: 1130168**
1130168-009-AC

Dear Mr. Koerner:

The Santa Rosa Energy Center (the Facility), located in Santa Rosa County, consists of one natural gas-fired combined cycle combustion turbine with an unfired heat recovery steam generator, a wet mechanical draft cooling tower, and a small natural gas preheater. The Facility is owned by Santa Rosa Energy Center, LLC and operated by Calpine Operating Services Company, Inc. (Calpine).

Minor amounts of operation occurred at the Facility prior to 2009. Since July 1, 2009 the Facility has experienced an increase in operation, which has motivated a request to revise several permit clarifications from the Florida Department of Environmental Protection (Florida DEP). On behalf of Santa Rosa Energy Center, LLC, Calpine is seeking to revise the Facility's PSD and/or Title V permits to include these clarifications.

After discussions with Bobby Bull of your office, it was decided to submit this request to the New Source Review Section and allow the Florida DEP to determine if a concurrent Title V revision is required. Please accept this letter as a formal request for minor modifications to the PSD and/or Title V permit as the Florida DEP sees fit. No increase in the permitted emission limits is being requested. The requested modifications include:

- Clarification of 24-hour block average calculation;
- Removal of 40 CFR Part 75 missing data substitution requirement for concentration emissions;
- Clarification of start-up and shut-down definitions; and
- CEMS QA/QC Requirements

Note: No SCR or Duct Burners were installed at the Facility; therefore, Calpine has struck the non-applicable language. This equipment and associated conditions are not included in the current Title V Permit.

24-hour Block Average Calculation

PSD Permit Section III (21) Bullet 1 (equivalent to Condition A.11 Bullet 1 of the Title V Permit) provides the following requirement:

“The concentration of NOx in the stack exhaust gas, with the combustion turbine operating and the duct burner on shall not exceed 9.8 ppmvd at 15% O2(24-hr block average), and with the combustion turbine operating and the duct burner off shall not exceed 9 ppmvd at 15% O2 (24-hour block average). Emissions of NOx in the stack exhaust gas (at ISO condition,) with the combustion turbine operating shall not exceed 106 pounds per hour (lb/hr) with the duct burner on and 64.1 lb/hr with the duct burner off to be demonstrated by initial stack test. [40CFR60 Subpart GG, Subpart Da and Rule 62-212.400, F.A.C.]”

PSD Permit Section III (32) (equivalent to Condition A.20 of the Title V Permit) provides the following requirement:

“Continuous compliance with the NOx emission limits: Continuous compliance with the NOx emission limits shall be demonstrated with the CEM system based on the applicable averaging time of 24-hr block average (DLN) or a 3-hr average (if SCR is used). Based on CEMS data, a separate compliance determination is conducted at the end of each operating day (or 3-hr period when applicable) and a new average emission rate is calculated from the arithmetic average of all valid hourly emission rates from the previous operating day (or 3-hr period when applicable). Valid hourly emission rates shall not include periods of start up, shutdown, or malfunction unless prohibited by 62-210.700 F.A.C. A valid hourly emission rate shall be calculated for each hour in which at least two NOx concentrations are obtained at least 15 minutes apart. These excess emissions periods shall be reported as required in Condition 29. [Rules 62-4.070 F.A.C., 62-210.700, F.A.C., 40 CFR 75 and BACT]”

During previous discussions with Florida DEP's Northwest District Office there was confusion as to the term "24-hour block average". This confusion has been cleared up and confirmed with Florida DEP's Tallahassee Office to mean the average of data between midnight and midnight (see Appendix A). No rolling average is required.

Additional discussions during a 2005 NOV resolution meeting held at the Southwest District office with Chris Bradley, formerly of the Florida DEP, indicated that any data collected during operation in excess of the start-up, shutdown, and malfunction time limits is to be included in the 24-hour NOx compliance determination. Exceedance of the start-up, shutdown, and malfunction time limits does not represent a permit deviation, unless use of the data in the 24-hour NOx compliance determination results in an excess of the permit limit (9 ppmvd @ 15% O2).

Calpine requests the Florida DEP provide clarification to this permit condition and suggests the following additional language be added to PSD Permit Section III (32)):

“... Based on CEMS data, a separate compliance determination is conducted at the end of each operating day (midnight). The compliance determination shall be the arithmetic average of all valid hourly emission rates from the previous operating day collected from midnight to midnight. Valid hourly emission rates shall not include periods of startup, shutdown, or malfunction, which are excused under Condition 27, unless prohibited by Rule 62-210.700 F.A.C. A valid hourly emission rate shall be calculated for each hour in which at least two NOx concentrations are obtained at least 15 minutes apart. These excess emissions periods shall be reported as required in Condition 29.”

Missing Data Substitution

PSD Permit Section III (21) Bullet 4 (equivalent to Condition A.11 Bullet 4 of the Title V Permit) provides the following requirement:

“When NOx monitoring data are not available, substitution for missing data shall be handled as required by Title IV (40 CFR 75) to calculate any specified averaging time.”

40 CFR Part 75 Missing Data Procedures are applicable only to calculations of NOx on a lb/mmBtu emission rate basis. Calculation of NOx on a concentration basis is not addressed by this regulation. In addition, Subpart GG (concentration based) specifies that Part 75 monitoring procedures are acceptable, with the exception of missing data. Missing data is to be excluded from the data averages and reported as monitor downtime.

During 2006 permit discussions concerning the Osprey Energy Center (105221-009-AV), Florida DEP recognized the inappropriateness of using Part 75 missing data substitution on concentration averages. The final permit modification filed March 10, 2006, modified Osprey Energy Center's previous like permit condition to read:

“When NOx monitoring data is not available, substitution for missing data shall be handled as required by Title IV(40 CFR 75) to calculate any specified averaging time. Part 75 missing data, start up and shut down emissions as defined in Condition 30 of this permit will not be included in the daily ppmvd averages.”

The Facility is only limited to NOx on a daily ppmvd average basis. Since there is no applicable lb/mmBtu limit that would be addressed by Part 75's missing data substitution provisions, Calpine requests this condition be deleted from the Facility's permits.

Start-up and Shut-down Definitions

PSD Permit Section III (27) (equivalent to Condition A.15 of the Title V Permit) provides the following requirement:

“Excess emissions resulting from start-up, shut-down, or malfunction shall be permitted provided that best operational practices are adhered to and the duration of excess emissions shall be minimized. Excess emissions occurrences shall in no case exceed two hours in any 24-hour period except during either “cold start-up” to or shutdowns from, cogeneration plant operation. During cold start-up to combined cycle operation up to four hours of excess emissions are allowed. During shutdowns from combined-cycle operation, up to three hours of excess emissions are allowed. Cold start-up is defined as startup to combined-cycle operation following a complete shutdown lasting at least 48-hours.”

As confirmed in Appendix A, previous conversations with the Florida DEP has confirmed that the start-up, shut-down, and malfunction exclusions apply daily and not on a rolling 24-hour period. If the exclusions were applied on a rolling 24-hour period, a unit would not be allowed to start up at 6:00 am on Day 1 and then restart at 4:00 am on Day 2. Use of a rolling exclusion was never the intent of the permit application and would cause significant operational impacts. In addition the Florida DEP has previously confirmed (see Appendix B) that the Facility may exclude startup, shutdown, and malfunction data on a minute basis.

Additional conversations with the Florida DEP (see Appendix C) have clarified the definition of cold startup to allow for operation at less than stable load in the 48-hour “no-operation” window. The “cold start” 4-hour exclusion is intended to allow for the Facility to come up to temperature and run properly. In the event the Facility starts under cold start conditions and trips prior to the lowest stable load, the Facility has not been properly heated to allow for a next day start-up under the “hot” start allocation of 2-hours. GE defines the lowest stable load normal operation as Mode 6.

Furthermore, this Condition uses cogeneration plant operation and combined-cycle operation interchangeably. In fact, the term “combined-cycle” describes the fundamental design of the facility, and “cogeneration” describes a mode of operation in which the Facility produces electric power as well as thermal energy in the form of process steam. Because these terms are not mutually exclusive, Calpine is requesting that the permit condition be revised accordingly.

Calpine requests the Florida DEP provide clarification to this permit condition and suggests the following additional language be added to PSD Permit Section III (27):

“... Excess emissions occurrences shall in no case exceed two hours (120 minutes) in any operating day except during either “cold start-up” to or shutdowns from, cogeneration and/or combined-cycle operation. During cold start-up to cogeneration and/or combined cycle operation up to four hours (240 minutes) of excess emissions

are allowed in any operating day. During shutdowns from cogeneration and/or combined-cycle operation, up to three hours (180 minutes) of excess emissions are allowed in any operating day. Cold start-up is defined as startup to cogeneration and/or combined-cycle operation following flame out of the combustion turbine with no Mode 6 operation in the interim for a minimum of 48-hours (2880 minutes). An operating day is defined as a day (midnight to midnight) that includes operation.”

CEMS QAQC Requirements

PSD Permit Section III (44) (equivalent to Condition A.33 of the Title V Permit) provides the following requirement:

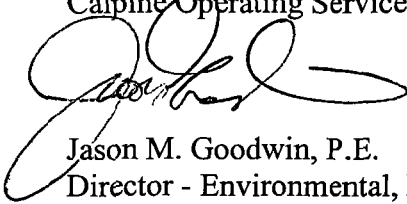
“Continuous Monitoring System Reports. The monitoring devices shall comply with the certification and quality assurance, and any other applicable requirements of Rule 62- 297.520, F.A.C., 40 CFR 60.13, including certification of each device in accordance with 40 CFR 60, Appendix B, Performance Specifications and 40 CFR 60.7(a)(5) or 40 CFR Part 75. Quality assurance procedures must conform to all applicable sections of 40 CFR 60, Appendix F or 40 CFR 75. The monitoring plan, consisting of data on CEM equipment specifications, manufacturer, type, calibration and maintenance needs, and its proposed location shall be provided to the DEP Emissions Monitoring Section Administrator and EPA for review no later than 45 days prior to the first scheduled certification test pursuant to 40 CFR 75.62. [1130168-001-AC, Specific Condition 44.]”

As confirmed through an email with Florida DEP (see Appendix D) and by multiple EPA determinations, a CEMS subject to both Part 60 and Part 75 requirements can satisfy both regulations by complying with Part 75 procedures. Per Errin Pichard, Florida DEP, the inclusion of Rule 62-297.520 is unnecessarily misleading. Calpine requests the citation be removed from the requirement and suggests the following language:

“Continuous Monitoring System Reports. The monitoring devices shall comply with certification requirements of each device in accordance with 40 CFR 60, Appendix B, Performance Specifications and 40 CFR 60.7(a)(5), or 40 CFR Part 75. Quality assurance procedures must conform to all applicable sections of 40 CFR 60, Appendix F or 40 CFR 75, as applicable. The monitoring plan, consisting of data on CEM equipment specifications, manufacturer, type, calibration and maintenance needs, and its proposed location shall be provided to the DEP Emissions Monitoring Section Administrator and EPA for review no later than 45 days prior to the first scheduled certification test pursuant to 40 CFR 75.62. [1130168-001-AC, Specific Condition 44.]”

Thank you for taking the time to review these requested modifications. Please contact Heidi M. Whidden at (713) 570-4829 or hwhidden@calpine.com if you have further questions, concerns, or require additional information.

Sincerely,
Calpine Operating Services Company, Inc.



Jason M. Goodwin, P.E.
Director - Environmental, Health & Safety
East Region Operations
On behalf of Santa Rosa Energy Center, LLC

C: Bobby Bull; Florida DEP—Tallahassee (email)
Heidi Whidden; Calpine (email)
Dana McNally; Calpine (email)
Jeff Harmon; Calpine (email)
File: R:\Operations - East\Santa Rosa (SR)\Air\Applications & Correspondence

Appendix A

**Email Correspondence between Bruce Thomas, FDEP, and
Heidi Whidden, Calpine Operating Services Company, Inc.**

From: Jeffrey Harmon
To: Heidi Whidden
Subject: FW: Santa Rosa Energy Center Start-up Calcification
Date: Wednesday, May 05, 2010 2:53:07 PM

Jeff Harmon - Plant Engineer
Santa Rosa Energy Center Hog Bayou Energy Center
5001 Sterling Way 1009 Paper Mill Road
Pace, FL 32571 Mobile, AL 36610
Office: (850) 995-2135 (251) 287-9331
Fax: (850) 995-2150 (251) 330-1093

From: Heidi Whidden
Sent: Tuesday, May 26, 2009 2:36 PM
To: Mary Anne Willhouse; Jeffrey Harmon; Dana McNally; Cade Hay
Subject: FW: Santa Rosa Energy Center Start-up Calcification

Here is the full conversation and final determination for the files. Thanks!

From: Thomas, Bruce X. [mailto:Bruce.X.Thomas@dep.state.fl.us]
Sent: Tuesday, May 26, 2009 3:34 PM
To: Heidi Whidden
Subject: RE: Santa Rosa Energy Center Start-up Calcification

That is correct.

From: Heidi Whidden [mailto:Heidi.Whidden@calpine.com]
Sent: Tuesday, May 26, 2009 3:32 PM
To: Thomas, Bruce X.
Cc: Jeffrey Harmon; Mary Anne Willhouse
Subject: RE: Santa Rosa Energy Center Start-up Calcification

Bruce,

To follow-up on our verbal conversation a few minutes ago... The set 24-hour period is midnight to midnight.

Thank you for your assistance!
Heidi

From: Thomas, Bruce X. [mailto:Bruce.X.Thomas@dep.state.fl.us]
Sent: Tuesday, May 26, 2009 3:27 PM
To: Heidi Whidden
Subject: RE: Santa Rosa Energy Center Start-up Calcification

Heidi,

I left you a message on your cell phone answering machine weeks ago. You are correct that the excursion limitations are based on a set 24 hour period. Sorry about the confusion. Bruce

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.

From: Heidi Whidden [mailto:Heidi.Whidden@calpine.com]
Sent: Tuesday, May 26, 2009 3:20 PM
To: Thomas, Bruce X.
Subject: FW: Santa Rosa Energy Center Start-up Calcification

Bruce,

Has the Department has a chance to review this email?

Thanks!
Heidi

From: Heidi Whidden
Sent: Thursday, May 07, 2009 3:43 PM
To: Thomas, Bruce X.
Cc: Heidi Whidden; Mary Anne Willhouse; Jeffrey Harmon; Dana McNally
Subject: Santa Rosa Energy Center Start-up Calcification

Bruce,

The Santa Rosa Energy Center located in Pace, Florida is permitted as Facility 11030168. The Santa Rosa Energy Center is required to continuously monitor NOx with an onsite CEMS. No other pollutants are

directly analyzed and monitored with the CEMS. NOx is limited to 9 ppmvd at 15% O2 on a 24-hour block average. Emissions excluded from the 24-hour NOx block average include up to 2-hours of non-cold start-up emissions (i.e. start-up under hot and warm conditions) and up to 4-hours of cold start-up emissions.

The CEMS has been programmed to track start-up exclusions from midnight to midnight. At midnight the start-up tracker is reset to zero and counting resumes. Under this tracking strategy a unit could start-up at 6 a.m. on Day 1 and then start-up at 4 a.m. on Day 2 (each receiving their own start-up allowance). Initial permitting activities surrounding start-up revolved around the concept that the start-up excursion limitations were based on a set, not on a rolling, 24-hour period. In addition, the facility believes it is an appropriate application due to the NOx limit being based on a block average.

A recent review of the start-up limitations in the permit for Santa Rosa Energy Center identified the word 'any' in the following permit requirement.

A.15 Excess emissions resulting from startup, shutdown, or malfunction shall be permitted provided that best operational practices are adhered to and the duration of excess emissions shall be minimized. Excess emissions occurrences shall in no case exceed two hours in any 24-hour period except during either "cold start-up" to, or shutdowns from, cogeneration plant operation. During cold start-up to combined cycle operation, up to four hours of excess emissions are allowed. During shutdowns from combined-cycle operation, up to three hours of excess emissions are allowed. Cold start-up is defined as a startup to combined-cycle operation following a complete shutdown lasting at least 48 hours.

The permit language could appear to indicate that the start-up limitations are based on 24-hour rolling period. Under this tracking strategy a unit could start-up at 6 a.m. on Day 1 but not able to start-up at 4 a.m. on Day 2. Operation would have to cease till 6 a.m. on Day 2.

Santa Rosa requests that the Department provide clarification on this issue.

Thank you for your assistance,

Heidi M. Whidden

Manager-EHS

(713) 570-4829 (Office)

(813) 727-1299 (Cell)

Appendix B

**Email Correspondence between Errin Pichard, FDEP, and
Andrew Martin, Calpine Operating Services Company, Inc.**

Andrew Martin

From: Pichard, Erin [Erin.Pichard@dep.state.fl.us]
Sent: Thursday, January 17, 2008 2:42 PM
To: Andrew Martin
Cc: DeAngelo, Gregory
Subject: RE: Question regarding 2-hours of CEMS data

Andrew-

Since your CEMS collects and records data in one-minute averages, I would interpret "two hours" in this case to mean 120 minutes of data. In other words, if startup begins at 10:48 pm, it can last until 12:48 am.

I have copied Greg DeAngelo, our former Compliance guru in case he wants to weigh in.

Please let me know if you have further questions.

Erin Pichard, Administrator
Emissions Monitoring Section
Florida Department of Environmental Protection
850-921-9580

The Department of Environmental Protection values your feedback as a customer. DEP Secretary Michael W. Sale 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.

From: Andrew Martin [mailto:martina@calpine.com]
Sent: Thursday, January 17, 2008 2:34 PM
To: Pichard, Erin
Subject: Question regarding 2-hours of CEMS data

Erin:

As a follow up to our recent telephone conversation:
Is 2-hour of permitted startup exclusion the same as 120-minutes startup exclusion?

Regards,

Andrew Martin
Plant Engineer
Osprey Energy Center
(863) 551-4662
amartin@calpine.com

Appendix C

**Email Correspondence between Bruce Thomas, FDEP, and
Heidi Whidden, Calpine Operating Services Company, Inc.**

From: Thomas, Bruce X. [mailto:Bruce.X.Thomas@dep.state.fl.us]
Sent: Monday, April 21, 2008 10:20 AM
To: Heidi Whidden
Subject: RE: Osprey Energy Center Question

Heidi,

You are interpreting it correctly. Do you expect four hours of excess emissions tomorrow?

Bruce Thomas, P.E.
Division of Air Resource Management
(850)-921-7744 or Bruce.X.Thomas@dep.state.fl.us

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.

From: Heidi Whidden [mailto:HWhidden@calpine.com]
Sent: Monday, April 21, 2008 10:09 AM
To: Thomas, Bruce X.
Subject: Osprey Energy Center Question
Importance: High

Bruce,

Last week and through the weekend, the Osprey Energy Center conducted their annual outage. Today they ran the unit for 45 minutes with gas flowing and no load to insure there were no gas leaks. Tomorrow they will be available for full operation. The following is an excerpt from the Osprey Permit 1050221-014-AV:

C.12 Excess Emissions. Excess emissions resulting from startup, shutdown, or mal provided that best operational practices are adhered to and the duration of excess emis:

Page Break:

Excess emissions occurrences shall in no case exceed two hours in any 24-hour period start-up" to, and shutdowns from, combined cycle plant operation. During cold start-up operation, up to four hours of excess emissions are allowed. During shutdowns from cold start-up to three hours of excess emissions are allowed. Cold start-up is defined as a startup operation following a complete shutdown lasting at least 48 hours. Operation below 30 otherwise be limited to 2 hours in any 24-hour period. [Rule 62-210.700(3), F.A.C. un

Calpine's understanding is that if:

1. A unit was fully shut down greater than 48-hours prior, and
2. The unit had not been brought up to stable load (defined as 60% load in permitting process) within the 48-hours prior,

Then the unit would be considered in cold start-up mode and provided the 4-hour allowance for the 24-hour period.

We request the agency provide their concurrence or provide further guidance.

Thank you for your continued assistance,
Heidi M. Whidden
713-570-4829

Appendix D

**Email Correspondence between Errin Pichard, FDEP, and
Heidi Whidden, Calpine Operating Services Company, Inc.**

From: [Richard, Errin](#)
To: [Heidi Whidden](#);
cc: [Brachura, Rick](#);
Subject: RE: Santa Rosa Energy Center
Date: Tuesday, March 17, 2009 11:59:12 AM

Heidi-

If a CEMS is subject to both Part 60 and Part 75 QA/QC requirements, it can satisfy both by complying with Part 75 procedures, which are generally more stringent than those in Part 60. EPA has issued a number of determinations to that effect.

The inclusion of the reference to 62-297.520 is unnecessarily misleading. We are not sure why that subsection is in the rule, as we adopt federal regulations by reference elsewhere in the department's rules. This subsection will almost certainly be deleted when 62-297 is revised.

Please let me know if you have other questions.
Errin

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.

From: Heidi Whidden [mailto:HWhidden@calpine.com]
Sent: Tuesday, March 17, 2009 11:36 AM
To: Richard, Errin
Subject: Santa Rosa Energy Center

Errin,

Calpine is conducting a Part 75 vs. Part 60 review as it pertains to daily calibrations. We believe our Auburndale Energy Complex permit is clear as to which regulations FDEP wants us to use. However, we are requesting confirmation of our determination for the Santa Rosa Energy Center (SREC), ID 1130163. SREC is subject to Part 60 Subpart GG and Part 75. SREC has NOx and O2 CEMS monitors. SREC's Title V permit states the following:

A.33. Continuous Monitoring System Reports. The monitoring devices shall comply with the certification and quality assurance, and any other applicable requirements of Rule 62- 297.520, F.A.C., 40 CFR 60.13, including certification of

each device in accordance with 40 CFR 60, Appendix B, Performance Specifications and 40 CFR 60.7(a)(5) or 40 CFR Part 75. Quality assurance procedures must conform to all applicable sections of 40 CFR 60, Appendix F or 40 CFR 75. The monitoring plan, consisting of data on CEM equipment specifications, manufacturer, type, calibration and maintenance needs, and its proposed location shall be provided to the DEP Emissions Monitoring Section Administrator and EPA for review no later than 45 days prior to the first scheduled certification test pursuant to 40 CFR 75.62. [1130168-001-AC, Specific Condition 44.]

Carpine believes the use of "or" prior to the reference to Part 75 in both the first and second sentence allows SREC to follow Part 75 QAQC requirements in lieu of Part 60. This follows because Subpart GG specifically states that analyzers following Part 75 QAQC requirements may be used to meet Part 60 limits. However, Rule 62-297.520 directly references Part 60 Appendix B and its associated Performance standards without referencing the Subpart.

Please provide the Department's determination as it relates to Santa Rosa's use of Part 75 for QAQC purposes in lieu of Part 60. If you would like to call to discuss, I may be contacted at (713) 570-4829.

Thank you for your continued assistance.

Heidi M. Whidden
Manager--EHS
(713) 570-4829 (Office)
(813) 727-1299 (Cell)