




## Memorandum

## Florida Department of Environmental Protection

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TO: Michael G. Cooke

THRU: Trina Vielhauer   
J. K. Pennington 

FROM: Michael P. Halpin 

DATE: January 7, 2005

SUBJECT: Calpine – Osprey Energy Center  
PSD Permit Modification – Low Load Testing  
DEP File No. 1050334-005 (PSD-FL-287)

Attached is the final permit modification relative to the Osprey Energy Center PSD permit.

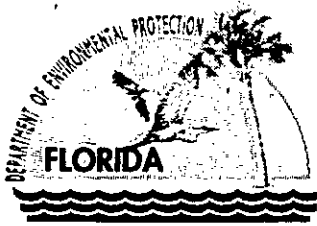
This is a permit modification which allows the applicant to perform low load testing on its combined cycle unit for up to 30 days. This was the simplest and most expeditious way to accommodate Calpine's request, which required temporary relief for the emission limits of CO and NO<sub>x</sub>. Of relevance, the relief being sought was insignificant from a PSD perspective.

A public notice was made on December 18, 2004 in the Lakeland Ledger and no comments were received. According to our time clock, the final permit must be issued by January 15<sup>th</sup> and the applicant wishes to begin testing on January 14<sup>th</sup>.

Accordingly, I recommend your approval.

Attachments

/mph



Jeb Bush  
Governor

# Department of Environmental Protection

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

Colleen M. Castille  
Secretary

January 7, 2005

Mr. Benjamin M. H. Borsch, P.E.  
Manager, Safety Health & Environment  
Calpine Corporation  
2701 N. Rocky Point, Suite 1200  
Tampa, Florida 33607

Re: Low load testing, PSD-FL-287  
DEP File Number 1050334-005-AC  
Osprey Energy Center / Polk County

The applicant, Calpine Corporation, applied on December 3, 2004, to the Department for authorization to perform low load testing at its Osprey Energy Center located in Polk County. The request entails providing for the potential of temporary emission increases above the existing emission limits for CO, NO<sub>x</sub> and ammonia slip. Such a request necessitates temporary modifications to PSD permit number PSD-FL-287, allowing for Units 1 and 2 to operate down to loads of at least 30% output (approximately 50 gross megawatts) along with the granting of temporary emission allowances for the purposes of testing and control tuning. In support of the request, Calpine has reviewed test results, for nearly identical Calpine units, and estimates that the following temporary permit changes will be required.

The Department has reviewed the modification request. The referenced permit is hereby temporarily modified as follows:

### III. Emissions Unit(s) Specific Conditions Applicable Standards And Regulations:

#### 20. Nitrogen Oxides (NO<sub>x</sub>) Emissions:

- The concentration of NO<sub>x</sub> in the stack exhaust gas, with the combustion turbine operating, the duct burner on or off, shall not exceed ~~3-5~~ 5.0 ppmvd @15% O<sub>2</sub> on a 24-hr block average. This limit shall apply whether or not the unit is operating with duct burner on and/or in power augmentation mode. Compliance shall be determined by the continuous emission monitor (CEMS). [BACT Determination]
- The emissions of NO<sub>x</sub> shall not exceed 27.5 lb/hr (at 95°F ambient temperature) while operating in the power augmentation mode with the duct burner on, to be demonstrated by annual stack test. [BACT Determination]
- Emissions of NO<sub>x</sub> from the duct burner shall not exceed 0.1 lb/MMBtu, which is more stringent than the NSPS (see Specific Condition 29). [Applicant Request, Rule 62-4.070 and 62-204.800(7), F.A.C.]
- The concentration of ammonia in the exhaust gas from each CT/HRSG shall not exceed ~~9-0~~ 15.0 ppmvd @15% O<sub>2</sub>. The compliance procedures are described in Specific Conditions 29 and 46. [BACT, Rules 62-212.400 and 62-4.070, F.A.C.]
- When NO<sub>x</sub> monitoring data is not available, substitution for missing data shall be handled as required by Title IV (40 CFR 75) to calculate any specified average time.

21. Carbon Monoxide (CO) Emissions: Emissions of CO in the stack exhaust gas (at ISO conditions) with the combustion turbine operating on gas shall exceed neither 10 ppmvd @15% O<sub>2</sub> on a 24-hr block average to be demonstrated by CEMS for those days when no valid hour includes the use of duct burner firing, power augmentation or ~~60-~~ less than 70% operation (otherwise, the limit is ~~17~~ 37 ppmvd @15% O<sub>2</sub> on a 24-hr block average to be demonstrated by CEMS); and neither 10 ppmvd @15% O<sub>2</sub> nor 45 lb/hr per unit at

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100% output with the duct burner off and no power augmentation to be demonstrated by annual stack test using EPA Method 10 or through annual RATA testing. [BACT, Rule 62-212.400, F.A.C.]

25. 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 both "cold start-up" to and shutdowns from combined cycle 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. Operation below ~~60%~~ 30% output per turbine shall otherwise be limited to 2 hours in any 24-hour period. [Rule 62-210.700, F.A.C.].
35. Test Notification: The DEP's Southwest District office shall be notified, in writing, at least 30 days prior to the initial performance tests and at least 15 days before annual compliance tests. During the "special testing" which is requested herein by Calpine, the DEP's Southwest District Office shall be notified, in writing, at least 72 hours prior to commencement of such testing.
47. The above permit modifications will expire 30 days following the issuance date below. A test report shall be filed with the Department, within 45 days of the expiration of this permit, including reports of all tests conducted as well as Calpine's analysis thereof. Additionally, Calpine shall submit an electronic version of all NO<sub>x</sub> and CO CEMS data as well as a written summary of the data.

All other terms and conditions of this permit remain unchanged. A copy of this letter shall be filed with the referenced permit and shall become part of the permit. This permit modification is issued pursuant to Chapter 403, Florida Statutes.

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

Executed in Tallahassee, Florida.



Michael G. Cooke, Director  
Division of Air Resource  
Management

**CERTIFICATE OF SERVICE**

The undersigned duly designated deputy agency clerk hereby certifies that this permit modification was sent by certified mail (\*) and copies were mailed by U.S. Mail before the close of business on 1/10/05 to the person(s) listed:

Benjamin M. H. Borsch, P.E. \*  
Robert Soich, FDEP SWD  
Gregg Worley, EPA  
John Bunyak, NPS

Clerk Stamp

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

Mary L. Starny 1/10/05  
(Clerk) (Date)

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> <li>■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>■ Print your name and address on the reverse so that we can return the card to you.</li> <li>■ Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	<p>A. Signature  <i>X Claudia Whitcomb</i> <input type="checkbox"/> Agent  <input type="checkbox"/> Addressee</p>
<p>1. Article Addressed to:  <b>Mr. Benjamin M. Borsch, P.E.</b>  <b>Manager, Safety Health &amp; Environment</b>  <b>Calpine Corporation</b>  <b>2701 N. Rocky Point, Suite 1200</b>  <b>Tampa, Florida 33607</b></p>	<p>B. Received by (Printed Name)  <i>Claudia Whitcomb</i></p> <p>C. Date of Delivery  <i>1-12-05</i></p>
<p>2. Article Number            (Transit)  <b>7000 167</b></p>	<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes            If YES, enter delivery address below: <input type="checkbox"/> No</p>
<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail    <input type="checkbox"/> Express Mail  <input type="checkbox"/> Registered    <input type="checkbox"/> Return Receipt for Merchandise  <input type="checkbox"/> Insured Mail    <input type="checkbox"/> C.O.D.</p>	<p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
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Send To: **Mr. Benjamin M. Borsch, P.E., Manager**  
**Safety Health & Environment**  
**Calpine Corporation**  
**2701 N. Rocky Point, Suite 1200**  
**Tampa, Florida 33607**

PS Form 3800, May 2000
See Reverse for Instructions