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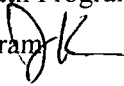
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Florida Department of Environmental Protection

Memorandum

TO: Michael G. Cooke, Director - Division of Air Resource Management

THROUGH: Trina Vielhauer, Chief - Bureau of Air Regulation
Al Linero, Manager - Air Permitting South Program

FROM: Jeff Koerner, Air Permitting South Program 

DATE: November 8, 2004

SUBJECT: Tampa Electric Company
H. L. Culbreath Bayside Power Station
Project No. 0570040-021-AC (PSD-FL-301B) - Revision of Condition 17

The Final revised permit is attached for your approval and signature. Condition 17 of the original PSD permit was revised with regard to excluded data for the new combined cycle Bayside Units 1 and 2. These units are located at the H. L. Culbreath Bayside Power Station, which is the re-powered F. J. Gannon Station. This plant is located in Tampa on Port Sutton Road in Hillsborough County, Florida.

On October 5, 2004, the Department mailed an "Intent to Issue Permit" package. The "Public Notice" was published in The Tampa Tribune on October 9, 2004. The Draft Permit was available for public inspection at the Bureau of Air Regulation in Tallahassee. Copies of the DRAFT Permit were also available for public inspection on the Department's web site, at the Department's Southwest District Office in Tampa, and the Hillsborough County Environmental Protection Commission in Tampa. Proof of publication of the "Public Notice" was received on October 15, 2004. No petitions for administrative hearings or extensions of time to petition for an administrative hearing were filed.

Day #90 is November 9, 2004; however, the applicant requested this project to be processed simultaneously with the Title V renewal permit with a combined notice. I recommend your approval of the attached Final Permit for this project.

Attachments

Best Available Copy

CERTIFIED MAIL



7000 1670 0013 3110 3100

5515

atal Protection

Mr. Wade A. Maye
Tampa Electric Company
Post Office Box 111
Tampa, Florida 33601-0111

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Wade A. Maye
Tampa Electric Company
Post Office Box 111
Tampa, Florida 33601-0111

2. Article Number
(Transfer from service label)

7000 1670 0013 3110 3100

PS Form 3811, August 2001

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

-
- Agent
-
-
- Addressee

B. Received by (Printed Name)

C. Date of Delivery

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

3. Service Type

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- Certified Mail
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- Express Mail
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- Registered
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- Return Receipt for Merchandise
-
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- Insured Mail
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- C.O.D.

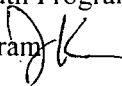
4. Restricted Delivery? (Extra Fee) Yes

Memorandum

Florida Department of Environmental Protection

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THROUGH: Trina Vielhauer, Chief - Bureau of Air Regulation
Al Linero, Manager - Air Permitting South Program

FROM: Jeff Koerner, Air Permitting South Program 

DATE: November 8, 2004

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Day #90 is November 9, 2004; however, the applicant requested this project to be processed simultaneously with the Title V renewal permit with a combined notice. I recommend your approval of the attached Final Permit for this project.

Attachments

FINAL DETERMINATION

PERMITTEE

Tampa Electric Company
P.O. Box 111
Tampa, Florida 33601-0111

PERMITTING AUTHORITY

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

PROJECT

Air Permit No. PSD-FL-301B
Project No. 0570040-021-AC
Tampa Electric Company, H. L. Culbreath Bayside Power Station
Revised Condition 17, Excluded Data

The Tampa Electric Company operates the H. L. Culbreath Bayside Power Station, which is located in Tampa on Port Sutton Road in Hillsborough County, Florida. The applicant requested revisions to Condition 17 with regard to excluded data.

NOTICE AND PUBLICATION

On October 5, 2004, the Department mailed an "Intent to Issue Permit" package. This package was issued as a combined public notice package with the Title V renewal permit. The "Public Notice" was published in The Tampa Tribune on October 9, 2004. The Draft Permit was available for public inspection at the Bureau of Air Regulation in Tallahassee. Copies of the DRAFT Permit were also available for public inspection on the Department's web site, at the Department's Southwest District Office in Tampa, and the Hillsborough County Environmental Protection Commission in Tampa. Proof of publication of the "Public Notice" was received on October 15, 2004. No petitions for administrative hearings or extensions of time to petition for an administrative hearing were filed.

COMMENTS

In an email dated October 7, 2004, the applicant requested the addition of "Unless otherwise specified in this permit" at the beginning of the permit Condition II.13 related to notification for excess emissions. *Response:* The permit condition is verbatim text from Rule 62-210.700(6), F.A.C. No change was made.

CONCLUSION

Only minor revisions were made to correct typographical errors. The final action of the Department is to issue the permit with the changes described above.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF FINAL PERMIT REVISION

In the Matter of an
Application for Permit by:

Tampa Electric Company
P. O. Box 111
Tampa, FL 33601-0111

Authorized Representative:

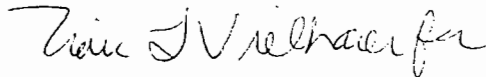
Mr. Wade A. Maye, General Manager
H. L. Culbreath Bayside Power Station

Permit No. PSD-FL-301B
Project No. 0570040-021-AC
Bayside Power Station
Revised Condition 17, Data Exclusion

Enclosed is the final revised air permit (No. PSD-FL-301B) for the H. L. Culbreath Bayside Power Station, which modifies Condition 17 in Section IIIA regarding startups, shutdowns, malfunctions, low load operation, DLN tuning, compressor blade drying, and over speed trip testing. The existing plant is located in Tampa on Port Sutton Road in Hillsborough County, Florida. As noted in the attached Final Determination, only minor changes and clarifications were made. An explanation of the project is provided in the attached Technical evaluation and Preliminary Determination. This permit is issued pursuant to Chapter 403, Florida Statutes.

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

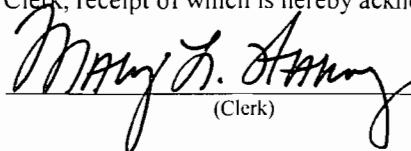
CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Final Permit (including the Final Permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 11/09/04 to the persons listed:

Mr. Wade A. Maye, TECO*
Ms. Greer Briggs, TECO
Ms. Raisa Calderon, TECO
Ms. Elena Vance, TECO
Mr. Tom Davis, ECT
Mr. Jerry Kissel, SWD Office
Mr. Jerry Campbell, EPC of Hillsborough County
Mr. Greg Worley, USEPA - Region 4
Mr. John Bunyak, National Park Service

Clerk Stamp

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


(Clerk)

11/09/04
(Date)

PERMIT HISTORY

On March 30, 2001, the Department issued Permit No. PSD-FL-301, which authorized construction of Bayside Units 1 and 2 to re-power existing coal-fired Gannon Units 5 and 6. On January 8, 2002, the Department modified that permit (PSD-FL-301A) to include construction of Bayside Units 3 and 4 to re-power existing Gannon Units 3 and 4. Bayside Units 1 and 2 have been constructed, demonstrated initial compliance, and are currently in operation. Construction of Bayside Units 3 and 4 has not yet commenced.

MODIFIED PERMIT CONDITIONS

Emissions units at the Bayside Power Station are subject to the existing terms and conditions as specified in Permit No. PSD-FL-301A unless otherwise revised below.

In Section IIIA of Permit No. PSD-FL-301A, Condition 17 is revised *from*:

17. Alternate Standards and CEMS Data Exclusion: The following permit conditions establish alternate standards or allow the exclusion of monitoring data for specifically defined periods of startup, shutdown, and documented malfunction of a gas turbine. These conditions apply only if operators employ the best operational practices to minimize the amount and duration of emissions during such incidents.
- a. **Opacity During Startup and Shutdown**: During startup and shutdown, the opacity of the exhaust gases shall not exceed 10%, except for up to ten 6-minute averaging periods in a calendar day during which the opacity shall not exceed 20%. Data for each 6-minute averaging period shall be exclusive from other 6-minute averaging periods.
 - b. **Low Load Operation**: Excluding startup, shutdown, and documented malfunction, each gas turbine is allowed up to three hours of operation below 50% base load in any 24-hour block, providing: the gas turbine is firing natural gas; the CO and NO_x CEMS are functioning properly during such periods and recording valid emissions data within the span range of the monitors; and the gas turbine remains in compliance with the CO and NO_x emissions standards based on 24-hour block averages of valid CEMS data.
 - c. **CEMS Data Exclusion**: For the following identified operational periods, CO and NO_x emissions data may be excluded from the 24-hour block compliance averages in accordance with the corresponding requirements.
 - (1) *Startup, Shutdown, and Malfunction*: Periods of data excluded for gas turbine startup (excluding steam turbine cold startup), shutdown, or documented malfunction shall not exceed four 1-hour emission averages in any 24-hour block due to all such episodes. Gas turbine startup is the commencement of operation of a gas turbine that has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, or pollution control device imbalances, which may result in elevated emissions. Shutdown is the process of bringing a gas turbine off line and ending fuel combustion. A malfunction is any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner. A documented malfunction is a malfunction that is documented within one working day of detection by contacting the Compliance Authority by telephone, facsimile transmittal, or electronic mail.
 - (2) *Steam Turbine Cold Startup*: Periods of data excluded for a steam turbine cold startup shall not exceed sixteen 1-hour emission averages in any 24-hour block. A “steam turbine cold startup” is defined as startup after the steam turbine has been offline for 24 hours or more or the first stage turbine metal temperature is 250° F or less. Based on actual operating data and experience, the Department may modify this period of data exclusion in the Title V air operation permit without modifying this PSD permit.

- (3) **Tuning:** If the permittee provides at least five days advance notice prior to a major tuning session performed by the manufacturer's representative, monitoring data during tuning may be excluded from the 24-hour block compliance averages. Periods of data excluded for such episodes shall not exceed a total of three 1-hour averages in any 24-hour block. Tuning sessions must be performed in accordance with the manufacturer's recommendations. {Permitting Note: As an example, a major tuning session would occur after a combustor change-out. A tuning session may take a few hours each day over a few days. No more than two major tuning sessions would be expected during any year.}

If a CEMS reports emissions in excess of a CO or NOx standard, the permittee shall notify the Compliance Authority within one working day with a preliminary report of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Compliance Authority may request a written summary report of the incident.

- d. **Startup and Shutdown Plan:** A "steam turbine cold startup" is defined as startup after the steam turbine has been offline for 24 hours or more or the first stage turbine metal temperature is 250° F or less. To minimize emissions, no more than one gas turbine for each Bayside Unit shall be operated during each steam turbine cold startup. The permittee shall notify the Compliance Authority at least 24 hours in advance of a steam turbine cold startup. For each Bayside Unit, the permittee shall provide a Startup and Shutdown Plan as part of the application for a Title V air operation permit. The plan shall identify startup and shutdown procedures, the duration of each procedure, and the methods used to minimize emissions during these periods. Within 90 days of completing eight steam turbine cold startups following commencement of commercial operation or within 90 days after 12 months of commercial operation (whichever occurs first), the permittee shall submit a revised plan to the Department based on actual operating data and experience. The Department shall review the actual operational data and determine whether data exclusion allowed for a steam turbine cold startup defined in Condition 23 of this section shall be modified to represent good operational practices. The Department shall also evaluate the operational information and determine whether a separate "warm startup" requirement shall be specified in the Title V operation permit for startup after the steam turbine has been offline for 24 hours or more, but less than 48 hours.

As provided by the authority in Rule 62-210.700(5), F.A.C., the above requirements are established in lieu of the provisions of Rule 62-210.700(1), F.A.C. [Design; Rules 62-210.700(5), 62-4.130, and Rule 62-212.400 (BACT), F.A.C.]

In Section IIIA of Permit No. PSD-FL-301A, Condition 17 is revised *to*:

17. **Alternate Standards and CEMS Data Exclusion:** The following permit conditions establish alternate standards or allow the exclusion of monitoring data for specifically defined periods of startup, shutdown, and malfunction. These conditions apply only if operators employ the best operational practices to minimize the amount and duration of emissions during such incidents.
- a. **Opacity During Startup and Shutdown:** During startup and shutdown, the opacity of the exhaust gases shall not exceed 10%, except for up to ten 6-minute averaging periods in a calendar day during which the opacity shall not exceed 20%. Data for each 6-minute averaging period shall be exclusive from other 6-minute averaging periods.
- b. **Low Load Operation:** Excluding startup, shutdown, malfunction, DLN tuning, compressor blade drying, and over speed trip tests, each gas turbine may operate below 50% base load providing: the gas turbine is firing natural gas and operating in full dry low-NOx combustion mode; the CO and NOx CEMS are functioning properly during such periods and recording valid emissions data within the span range of the monitors; and the gas turbine remains in compliance with the CO and NOx emissions

standards (24-hour block averages).

- c. **CEMS Data Exclusion:** For the following specified operational periods, CO and NO_x emissions data may be excluded from the 24-hour block compliance averages in accordance with the corresponding requirements.
- (1) *Definitions:* Rule 62-210.200(231), F.A.C. defines “shutdown” as the cessation of the operation of an emissions unit for any purpose. Rule 62-210.200(160), F.A.C. defines “malfunction” as any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner. Rule 62-210.200(246), F.A.C. defines “startup” as the commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical or pollution control device imbalances, which result in excess emissions.
 - (2) *Standard Startups, Shutdowns, and Malfunctions:* For each gas turbine, no more than four 1-hour CEMS emission averages shall be excluded from any 24-hour block compliance average due to standard startups, shutdowns, and malfunctions (total).
 - (3) *Cold Steam Turbine Startup:* “Cold steam turbine startup” means a startup after the steam turbine has been offline for 24 hours or more, or the first stage turbine metal temperature is 250° F or less. To minimize emissions, no more than one gas turbine per Bayside Unit shall be operated during a cold steam turbine startup. No more than sixteen 1-hour CEMS emission averages shall be excluded from the 24-hour block compliance averages due to a cold steam turbine startup. In addition, no more than sixteen 1-hour CEMS emission averages shall be excluded from any 24-hour block compliance average due to cold steam turbine startup. In the event of a cold steam turbine startup and standard startups, shutdowns and/or malfunctions within the same 24 hour period, a total of sixteen 1-hour CEMS emissions averages may be excluded with no more than four of those sixteen 1-hour CEMS emissions averages being excluded due to standard startups, shutdowns, and malfunctions (total). This condition applies only to the gas turbine being used for the cold steam turbine startup. The permittee shall notify the Compliance Authority no later than 24 hours after beginning a cold steam turbine startup. Notification may be by phone, facsimile, email, or letter.
 - (4) *Steam Turbine Startup Following an Unplanned Forced Outage:* “Steam turbine startup following unplanned, forced outage” means startup when the first stage turbine metal temperature is 250° F or more and occurs within 24 hours after either (1) the steam turbine inadvertently trips offline, or (2) the plant is forced to take the steam turbine offline for repair. To minimize emissions, no more than one gas turbine per Bayside Unit shall be operated during a steam turbine startup following an unplanned forced outage. No more than eight 1-hour CEMS emissions averages shall be excluded from the 24-hour block compliance averages due to a steam turbine startup following an unplanned forced outage. In addition, no more than eight 1-hour CEMS emission averages shall be excluded from any 24-hour block compliance average due to steam turbine startups following an unplanned forced outage. In the event of a startup following an unplanned forced outage and standard startups, shutdowns and/or malfunctions within the same 24 hour period, a total of eight 1-hour CEMS emissions averages may be excluded with no more than four of those eight 1-hour CEMS emissions averages being excluded due to standard startups, shutdowns, and malfunctions (total). This condition applies only to the gas turbine being used for steam turbine startup following an unplanned forced outage. The permittee shall notify the Compliance Authority no later than 24 hours after beginning a steam turbine startup following an unplanned forced outage. Notification may be by phone, facsimile, email, or letter and shall include the reason for the unplanned forced outage.
 - (5) *DLN Tuning:* “DLN Tuning” means operating the gas turbine at intermittent loads throughout the

full load range in order to adjust and tune the dry low-NO_x (DLN) combustion system. DLN tuning shall be conducted in accordance with manufacturer's recommendations. Emissions data collected during DLN tuning may be excluded from the 24-hour block compliance averages. *{Permitting Note: For example, a major tuning session would occur after combustor change-out.}*

- (6) *Compressor Blade Drying:* Following a compressor blade wash in accordance with the manufacturer's recommendations, the permittee may operate a gas turbine at very low loads to heat and dry the compressor blades. Emissions data collected while drying the compressor blades may be excluded from the 24-hour block compliance averages. *{Permitting Note: A gas turbine would typically operate at approximately 10% of base load or less to perform compressor blade drying.}*
- (7) *Over Speed Trip Test:* As a periodic maintenance practice, the permittee may perform over speed trip tests in accordance with the manufacturer's recommendations. Emissions data collected while conducting over speed trip tests may be excluded from the 24-hour block compliance averages. *{Permitting Note: During this test, the gas turbine is operated at full speed, no load (FSNL) for approximately 5 to 6 hours. The unit is gradually accelerated to 110% speed (3960 rpm) to initiate a trip and then coasts down normally. Over speed trip tests are typically performed after a long outage or a major component overhaul.}*

To the extent practicable, the permittee shall minimize the amount and duration of emissions during periods of startup, shutdown, malfunction, DLN tuning, compressor blade drying, and over speed trip testing. If a CEMS reports emissions in excess of an emissions standard (24-hour block), the permittee shall notify the Compliance Authority within one working day with a preliminary report of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Compliance Authority may request a written summary report of the incident. All emissions data allowed for exclusion shall be summarized in the Semiannual CEMS Report required in Condition 25 of this subsection.

- d. **Startup and Shutdown Plan:** The permittee shall maintain on site a "Startup and Shutdown Plan" that describes procedures for startup and shutdown of the Bayside Units.

As provided by the authority in Rule 62-210.700(5), F.A.C., the above requirements are established in lieu of the provisions of Rule 62-210.700(1), F.A.C.

{Permitting Note: The durations for a cold steam turbine startup and a steam turbine startup following an unplanned forced outage are not typical for combined cycle units. The Bayside Units utilize the existing Gannon steam turbines. Operating procedures require one gas turbine to operate at low loads for extended periods to gradually warm the main and hot reheat steam lines to the steam turbine as well as the steam turbine. Some steam lines are in excess of 1700 feet. Such startups are expected to occur infrequently.} [Design; Rules 62-4.130, 62-210.700(5), and 62-212.400 (BACT), F.A.C.; Permit No. PSD-FL-301B]

Filename: PSD-FL-301B - Final Permit Revision