

Facility Name: **Talbot Energy Facility**

City: Box Springs

County: Talbot

AIRS #: 04-13-263-00013

Application #: 15233 and 16267

Date SIP Application Received: N/A

Date Title V Application Received: April 6, 2004

Permit No: 4911-263-0013-V-04-1

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Introduction

This narrative is being provided to assist the reader in understanding the content of the referenced SIP permit to construct and draft operating permit amendment. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being issued pursuant to: (1) Sections 391-3-1-.03(1) and 391-3-1-.03(10) of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public comment period and EPA review process will be described in an addendum to this narrative.

I. Facility Description

A. Existing Permits

Table 1 below lists the current Title V permit, and all administrative amendments, minor and significant modifications to that permit, and 502(b)(10) attachments. Comments are listed in Table 2 below.

Table 1: Current Title V Permit and Amendments

Permit/Amendment Number	Date of Issuance	Comments	
		Yes	No
4911-263-0013-V-04-0	09/27/04	X	

Table 2: Comments on Specific Permits

Permit Number	Comments
4911-263-0013-V-04-0	Initial Title V Permit

B. Regulatory Status

1. PSD/NSR/RACT

This facility is a major source under PSD/NSR for NOX, PM, and PM₁₀ emissions, which exceed 100 tons per year. It is not classified as one of the 28 named source categories in the PSD regulations. The facility is located in Talbot County, which is in attainment for all criteria pollutants.

2. Title V Major Source Status by Pollutant

Table 3: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the Pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	Yes	X		
PM ₁₀	Yes	X		
SO ₂	Yes			X
VOC	Yes	X		
NOX	Yes	X		
CO	Yes	X		
TRS	No			
H ₂ S	No			
Individual HAP	Yes			X
Total HAPs	Yes			X

II. Proposed Modification

A. Description of Modification

The initial Title V Permit Application was received on April 1, 2003, and assigned No. 14405. At that time, the facility was operating under PSD Permit No. 4911-263-0013-P-02-0 issued May 8, 2002 (PSD Permit No. 4911-263-0013-P-03-0 was issued on June 9, 2003 due to change of ownership), and Acid Rain Permit No. 4911-263-0013-E-01-0 issued November 30, 2001. The facility commenced operation in March 2002.

Several updates and revisions to the original application have been received, namely on July 23, 2003; January 14, 2004; March 3, 2004; and April 6, 2004, the latter being what was assigned PSD Application No. 15233.

The initial Title V Permit No. 4911-263-0013-V-04-0 was issued on September 27, 2004.

In PSD Application No. 15233, Oglethorpe Power requests the following changes to be made in the permit for the Talbot Energy Facility (TEF):

- To exclude startup and shutdown periods from the three-hour rolling average limits for CO, PM, and VOC and their associated enforcement thresholds in Section VI of the permit;
- Conversion of the daily limits for NO_x and CO to *equivalent* 12-month rolling limits; and
- Establish more appropriate definitions for combustion turbine startup and shutdown

In Application No. 16267, Oglethorpe Power requested a correction to the effective date of the Acid Rain Permit from November 30, 2001 to read as “November 30, 2004”. While the Division will correct the effective date of the Acid Rain permit so that it is a five-year permit, we are unable to streamline the expiration dates of the Title V and Acid Rain permits at this time.

Emissions Change

There is no change in annual emissions associated with this permit modification. Potential emissions of NO_x, CO, PM, PM₁₀, and VOC with the proposed restrictions of no more than 254 SU/SD cycles per 12 consecutive month period are well within the permitted limits on annual hours of operation and the emission limits for each pollutant.

Table 4: Emissions Change Due to Modification

Pollutant	Is the Pollutant Emitted?	Net Actual Emissions Increase (Decrease) (tpy)	Net Potential Emissions Increase (Decrease) (tpy)
PM	Yes	0	0
PM ₁₀	Yes	0	0
SO ₂	Yes	0	0
VOC	Yes	0	0
NO _x	Yes	0	0
CO	Yes	0	0
TRS	No	0	0
H ₂ S	No	0	0
Individual HAP	Yes	0	0
Total HAPs	Yes	0	0

B. PSD/NSR Applicability

The changes associated with this amendment do not constitute a “modification” as defined in 40 CFR 52.21. There is no physical modification to the turbines and the addition of BACT limits for startup/shutdown do not constitute a “change in method of operation” because there was no Federal or SIP regulation or permit condition prohibiting the operation of the turbines in startup/shutdown mode.

III. Facility Wide Requirements

A. Emission and Operating Caps:

No new or modified facility-wide emission or operating caps are associated with this modification.

B. Applicable Rules and Regulations

There is no new or modified rule applicability associated with this modification.

C. Compliance Status

The facility is operating in compliance with all applicable air quality rules and regulations.

D. Operational Flexibility

There are no request for facility-wide operational flexibility associated with this modification.

E. Permit Conditions

No new or modified facility-wide permit conditions are associated with this modification.

IV. Regulated Equipment Requirements

A. Brief Process Description

The TEF consists of six simple cycle Siemens Westinghouse combustion turbines, each is fired primarily with natural gas and has a nominal power output rating of 108 MW (T1, T2, T3, T4, T5, and T6). In addition, three natural gas-fired heaters (H1, H2, and H3) heat the gas supply to the six power turbines.

Total annual operation of turbines T1-T4 is limited to 3,750 hours per year, each, using pipeline-quality natural gas; total annual operation of turbines T5 and T6 is limited to 4,200 hours per year, with up to 450 hours, per turbine, for low sulfur fuel oil (0.05 wt. % S) combustion. The combustion turbines are equipped with dry low NO_x combustors/burners for control of NO_x emissions during natural gas combustion. For fuel oil combustion, combustion turbines T5 and T6 are equipped with water injection to minimize NO_x emissions.

B. Equipment List for the Process

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements/Standards	Corresponding Permit Conditions	ID No.	Description
T1	Siemens-Westinghouse V84.2 Simple Cycle CT	40 CFR 52.21(j), 391-3-1-.02(b), 391-3-1-.02(g), 40 CFR 60 Subpart GG, Acid Rain Regulations	3.3.1, 3.3.3, 3.3.4, 3.3.7, 3.3.9, 3.3.14, 3.3.15, 5.2.1, 5.2.2, 5.2.3, 5.2.4, 5.2.5, 5.2.6, 5.2.7, 5.2.8, 5.2.9, 6.1.7, 6.2.1, 6.2.2, 6.2.4, 6.2.5, 6.2.6, 6.2.7, 6.2.8, 6.2.9, 6.2.10, 6.2.11, 6.2.12, 6.2.13, 7.9.7	LC1	Dry low NOX Combustor
T2	Siemens-Westinghouse V84.2 Simple Cycle CT	40 CFR 52.21(j), 391-3-1-.02(b), 391-3-1-.02(g), 40 CFR 60 Subpart GG, Acid Rain Regulations	See T1	LC2	Dry low NOX Combustor
T3	Siemens-Westinghouse V84.2 Simple Cycle CT	40 CFR 52.21(j), 391-3-1-.02(b), 391-3-1-.02(g), 40 CFR 60 Subpart GG, Acid Rain Regulations	See T1	LC3	Dry low NOX Combustor
T4	Siemens-Westinghouse V84.2 Simple Cycle CT	40 CFR 52.21(j), 391-3-1-.02(b), 391-3-1-.02(g), 40 CFR 60 Subpart GG, Acid Rain Regulations	See T1	LC4	Dry low NOX Combustor

TITLE V SIGNIFICANT MODIFICATION (WITHOUT CONSTRUCTION) APPLICATION REVIEW

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements/Standards	Corresponding Permit Conditions	ID No.	Description
T5	Siemens-Westinghouse V84.2 Simple Cycle CT	40 CFR 52.21(j), 391-3-1-.02(b), 391-3-1-.02(g), 40 CFR 60 Subpart GG, Acid Rain Regulations	3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.3.6, 3.3.7, 3.3.8, 3.3.9, 3.3.14, 3.3.15, 5.2.1, 5.2.2, 5.2.3, 5.2.4, 5.2.5, 5.2.6, 5.2.7, 5.2.8, 5.2.9, 6.1.7, 6.2.1, 6.2.2, 6.2.3, 6.2.4, 6.2.5, 6.2.6, 6.2.7, 6.2.8, 6.2.9, 6.2.10, 6.2.11, 6.2.12, 6.2.13, 6.2.14, 7.9.7	LC5 WI01	Dry low NO _X Combustor Water Injection (Low sulfur diesel fuel)
T6	Siemens-Westinghouse V84.2 Simple Cycle CT	40 CFR 52.21(j), 391-3-1-.02(b), 391-3-1-.02(g), 40 CFR 60 Subpart GG, Acid Rain Regulations	See T5	LC6 WI02	Dry low NO _X Combustor Water Injection (Low sulfur diesel fuel)
H1	Gas-fired fuel gas heater	40 CFR 52.21(j), 391-3-1-.02(d), 391-3-1-.02(g)	3.3.10, 3.3.11 3.3.12, 3.3.13	LC7	Low NO _X Burner
H2	Gas-fired fuel gas heater	40 CFR 52.21(j), 391-3-1-.02(d), 391-3-1-.02(g)		LC7	Low NO _X Burner
H3	Gas-fired fuel gas heater	40 CFR 52.21(j), 391-3-1-.02(d), 391-3-1-.02(g)	3.3.10, 3.3.11 3.3.12, 3.3.13	LC7	Low NO _X Burner

C. Equipment & Rule Applicability

Emission and Operating Caps

There are no new or modified emission or operating caps associated with this modification.

Applicable Rules and Regulations

No new or modified regulatory applicability is associated with this modification.

Emission and Operating Standards:

In accordance with *Federal Register Notice* Volume 43 Page 26397. Work practice standards and operating limits can be used as Best Achievable Control Technology (BACT) if an emission limitation is not feasible. Talbot Energy Facility has provided startup/shutdown emissions data in terms of pounds emitted. However, emission limitations for CO, PM, and VOC have been established in the existing permit as a pound per million BTU or part per million concentration. Due to difficulty in obtaining accurate hourly fuel heating values during startup and shutdown and because test methods to ensure compliance with PM and VOC limitations are not valid during startup and shutdown, it is **not** feasible to establish short-term emission limitations for CO, PM, and VOC during periods of startup and shutdown.

Startup and shutdown has been defined as a work practice standard. In order to avoid exceeding any annual BACT limits, the annual number of startup/shutdown (SUSD) cycles per 12 consecutive month period is limited to 254.

D. Compliance Status

The facility is operating in compliance with all applicable air quality rules and regulations.

E. Operational Flexibility

None applicable.

F. Permit Conditions

Condition Nos. 3.3.7 and 3.3.8 have been modified to include a citation for 391-3-1-.02(2)(a)7.

The previous daily emission limits in Condition No. 3.3.9 for NO_x and CO from the turbines have been changed to equivalent 12-month rolling limits, which include emissions occurring during startup and shutdown.

New Condition No. 3.3.14 has been added to define startup and shutdown of the turbines.

New Condition No. 3.3.15 limits startup/shutdown cycles to 254 per 12 consecutive month period.

V. Testing Requirements (with Associated Record Keeping and Reporting)

- A. Individual Equipment: Not applicable.
- B. Equipment Groups (all subject to the same test requirements): Not applicable.

VI. Monitoring Requirements (with Associated Record Keeping and Reporting)

- A. Individual Equipment: Not applicable.
- B. Equipment Groups (all subject to the same monitoring requirements):
Not Applicable

VII. Other Record Keeping and Reporting Requirements

6.1.7.b.ix through xii were edited to define exceedances for NO_x and CO as any 12-month rolling sum exceeding the annual limits given in Condition No. 3.3.9.

6.1.7.b.xv was added to define an exceedance for annual startup/shutdown cycles for any one turbine.
Note: corrected condition number.

The requirement to record the occurrence and duration of startup and shutdown as required in §60.7(c) and 40 CFR 52.21 is being included as Condition No. 6.2.5.a

Condition No. 6.2.7 is being modified to require the calculation and recording of a monthly mass emission rate of NO_x instead of a daily mass emission rate.

Old Condition No. 6.2.8 is replaced with requirements to use monthly mass emission rates of NO_x to calculate a 12-month rolling sum of NO_x. Old Condition No. 6.2.8 is being renumbered as New Condition No. 6.2.9.

Old condition 6.2.9 was deleted.

New Condition No. 6.2.10 establishes the equation for calculating a monthly CO mass emission rate as a time-weighted average of valid hourly CO emission rates.

New Condition No. 6.2.11 requires the calculation of a 12-month rolling sum of CO emissions for all turbines using monthly emission rate calculations required by Condition No. 6.2.10.

Old Condition Nos. 6.2.11 and 6.2.12 are being renumbered as Condition Nos. 6.2.12 and 6.2.13.
Note: corrected condition numbers.

VIII. Specific Requirements

A. Operational Flexibility

No additional flexibility was requested in the Title V Permit application.

B. Alternative Requirements

There are no alternative requirements.

C. Insignificant Activities

Section §4.10 of the Title V permit application lists insignificant activities at the facility. These are listed as Attachment B in the initial Title V Permit. There are no unusual issues concerning insignificant activities at the site.

D. Temporary Sources

No request was made for operation of temporary sources in this permit.

E. Short-Term Activities

No short-term activities are listed in the Title V Permit Application.

F. Compliance Schedule/Progress Reports

The Permit application does not indicate any non-compliance issues at the facility. None has been identified by EPD in its Application review. Therefore, the permit does not have any Compliance Schedule or require any Progress Reports.

G. Emissions Trading

No emission trading is involved at this facility.

H. Acid Rain Requirements

Condition Nos. 7.91 through 7.9.8 are being reissued with the correct effective date of November 30, 2004.

I. Prevention of Accidental Releases

This facility is not currently subject to Prevention of Accidental Release provisions. However, permit conditions are specified in Condition 7.10 if these regulations become applicable in future.

J. Stratospheric Ozone Protection Requirements

The facility has indicated that they are not subject to Title VI regulations at the time of the application.

K. Pollution Prevention

None Applicable.

L. Specific Conditions

None Applicable.

Addendum to Narrative

The 30-day public review started on January 19, 2007 and ended on February 19, 2007. Public comments were not received by the Division.

The following comments were received from the Talbot Energy Facility (TEF):

TEF Comment: In the narrative to the amendment, under “C. Equipment & Rule Applicability – Applicable Rules and Regulations,” EPD discusses the rationale for defining, for purposes of the Best Achievable Control Technology (BACT) analysis, work practice standards for the control of startup and shutdown emissions...It would seem that the discussion should also include NOX emissions and test methods, since the same rationale applies and they are being treated similarly in the amendment. Thus we suggest the following changes to the narrative...”

EPD Response: While the Division cannot alter page 6 of the narrative, the Division hereby agrees that due to the same difficulty in obtaining accurate test results and heating values during startup and shutdown as discussed on page 6 of the narrative, the same rationale for expressing the BACT limit as a work practice standard for CO, PM, and VOC also applies to NO_x.

TEF Comment: Condition 6.1.7.b sets forth the exceedances that are to be reported, should they occur, in the quarterly reports. These provisions correspond to the emissions limitations set forth in Part 3.0 of the Permit, e.g., Condition 6.1.7.b.x-xiii are the exceedance provisions that correspond to the annual NOX and CO limits in Condition 3.3.9.a – d. As such, for the provisions to be consistent, it would seem that malfunctions should be added to 6.1.7.b x – xiii. Thus, for example, for 6.1.7.b.x. to be consistent with Condition 3.3.9.a, it should be revised as follows:

Any 12 consecutive month period in which the rolling sum of NO_x emissions, on a per turbine basis including startup, shutdown, and malfunction, exceeds 106.6 tons for combustion turbines T1, T2, T3, or T4. This limit applies to combustion turbines T5 and T6 if no low sulfur diesel is fired in them...

EPD Response: The Division agrees that Condition No. 6.1.7.b.x through xiii. should define an exceedance to include periods of malfunction during which the 12 consecutive month rolling sum of the regulated pollutant exceeds the emission limitations in Condition No. 3.3.9.a though d.