

TAMPA ELECTRIC

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BUREAU OF AIR REGULATION

December 31, 2008

Via Email: [Sylvia.Livingston@dep.state.fl.us](mailto:Sylvia.Livingston@dep.state.fl.us)  
Ms. Trina Vielhauer  
Chief, Bureau of Air Regulation  
Florida Department of Environmental Protection  
111 South Magnolia Drive, Suite 23  
Tallahassee, Florida 32301

Re: Tampa Electric Company – Big Bend Station  
Unit 4 CO Increase Project – 0570039-042-AC  
Title V Air Operation Permit Revision Application

Dear Ms. Vielhauer:

Please find the enclosed an electronic copies of the Title V Permit Revision applications for the referenced project 0570039-042-AC for you review. Three hard copies of the application will be submitted via FedEx.

As agreed with prior discussions with Mr. Jonathan Holtom, Tampa Electric waives the Rule 62-213.430(1), Florida Administrative Code (F.A.C.) 90 day clock for Department processing of the Unit 4 CO Increase Title V air operation permit revision application, and requests that the Unit 4 CO Increase project be included in the renewed Big Bend Station Title V permit that is expected to be issued by the Department in mid-2009.

If you have any questions regarding this matter, please contact me at (813) 228-4654.

Sincerely,

Andrew Thuy Nguyen  
Senior Engineer - Air Programs  
Environmental, Health and Safety

EHS/rhk/ATN113

Enclosures

cc: Mr. Jonathan Holtom, FDEP Tallahassee (encl)  
Ms. Diana Lee, EPCHC  
Ms. Mara Grace Nasca, FDEP Southwest District

**Nguyen, Andrew T.**

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**From:** Nguyen, Andrew T.  
**Sent:** Wednesday, December 31, 2008 6:20 PM  
**To:** Sylvia Livingston (Sylvia.Livingston@dep.state.fl.us)  
**Cc:** Ward, Julie M.; Burrows, Byron T.; Zwolak, Karen O.  
**Subject:** Tampa Electric Title V Permit Revision FDEP File 0570039-042-AC  
**Attachments:** TECO TV Permit CO Increase Revision Signature pages\_0570039-042-AC.pdf; TECO TV REVISION APP for CO INCREASE 0570039-042-AC.pdf; TECO TV Revision APP\_0570039-042-AC\_ATTACHMENT B - TECO CO Optimization Study Report.pdf; TECO TV Permit Revision Attachment A\_0570039-042-AC.pdf

Dear Sylvia,

Attached are files regarding the subject application.

Thank you for your work.

Happy New Year.

***Andrew (Thuy) Nguyen***

Senior Engineer

EHS - Air Programs

Tampa Electric Company

P.O. Box 111

Tampa, FL 33601-0111

Office: 813-228-4654

Fax: 813-228-1308

Cell: 813-309-1341

[atnguyen@tecoenergy.com](mailto:atnguyen@tecoenergy.com)

**Recipient**

Sylvia Livingston (Sylvia.Livingston@dep.state.fl.us)

Ward, Julie M.

Burrows, Byron T.

Zwolak, Karen O.

**Delivery**

Delivered: 12/31/2008 6:20 PM

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Delivered: 12/31/2008 6:20 PM



# Department of Environmental Protection

## Division of Air Resource Management

### APPLICATION FOR AIR PERMIT - LONG FORM

#### I. APPLICATION INFORMATION

**Air Construction Permit** – Use this form to apply for an air construction permit:

- For any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

**Air Operation Permit** – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial, revised, or renewal Title V air operation permit.

**To ensure accuracy, please see form instructions.**

#### Identification of Facility

1. Facility Owner/Company Name: <b>Tampa Electric Company</b>	
2. Site Name: <b>Big Bend Station</b>	
3. Facility Identification Number: <b>0570039</b>	
4. Facility Location... Street Address or Other Locator: <b>13031 Wyandotte Road</b> City: <b>Apollo Beach</b> County: <b>Hillsborough</b> Zip Code: <b>33572</b>	
5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Existing Title V Permitted Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

#### Application Contact

1. Application Contact Name: <b>Andrew Thuy Nguyen, Senior Engineer</b>	
2. Application Contact Mailing Address... Organization/Firm: <b>Tampa Electric Company</b> Street Address: <b>P.O. Box 111</b> City: <b>Tampa</b> State: <b>FL</b> Zip Code: <b>33601-0111</b>	
3. Application Contact Telephone Numbers... Telephone: <b>(813) 228-4654</b> ext. Fax: <b>(813) 228-1308</b>	
Application Contact E-mail Address: <b><u>ATNguyen@TECOenergy.com</u></b>	

#### Application Processing Information (DEP Use)

1. Date of Receipt of Application:	3. PSD Number (if applicable):
2. Project Number(s): <b>0570039-037-AV</b>	4. Siting Number (if applicable):

## APPLICATION INFORMATION

### Purpose of Application

**This application for air permit is being submitted to obtain: (Check one)**

#### **Air Construction Permit**

- Air construction permit.
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

#### **Air Operation Permit**

- Initial Title V air operation permit.
- Title V air operation permit revision.
- Title V air operation permit renewal.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

#### **Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)**

- Air construction permit and Title V permit revision, incorporating the proposed project.
- Air construction permit and Title V permit renewal, incorporating the proposed project.

**Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:**

- I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

### Application Comment

**Tampa Electric Company (TEC) was issued an air construction permit (FDEP file 0570039-027-AC) dated January 16, 2008, on Big Bend Unit 4 Steam Generator. The permit authorized the increase of CO emissions pursuant to a determination of Best Available Control Technology (BACT) and required TEC to install and operate a Carbon Monoxide (CO) Continuous Emissions Monitoring System (CEMS). Based on discussion between TEC and FDEP Air Permitting staff, it was agreed that FDEP File No. 0570039-027-AC expiration date was allowed to extend to March 31, 2009. A formal request for permit extension was submitted on September 23, 2008. The current FDEP File is now 0570039-042-AC.**

**APPLICATION INFORMATION**

**Scope of Application**

<b>Emissions Unit ID Number</b>	<b>Description of Emissions Unit</b>	<b>Air Permit Type</b>	<b>Air Permit Processing Fee</b>
004	Unit No. 4 Steam Generator (Phase II Acid Rain Unit)	N/A	N/A

**Application Processing Fee**

Check one:  Attached - Amount: \$ \_\_\_\_\_  Not Applicable

## APPLICATION INFORMATION

### Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :
2. Owner/Authorized Representative Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Owner/Authorized Representative Telephone Numbers... Telephone: ext. Fax:
4. Owner/Authorized Representative E-mail Address:
5. Owner/Authorized Representative Statement:  <i>I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.</i>  _____ Signature  _____ Date

## APPLICATION INFORMATION

### Application Responsible Official Certification

Complete if applying for an initial, revised, or renewal Title V air operation permit or concurrent processing of an air construction permit and revised or renewal Title V air operation permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

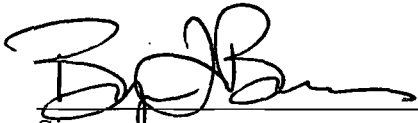
1. Application Responsible Official Name: <b>Byron T. Burrows, Manager, Air Programs – EHS (alternate RO)</b>
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C. <input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively. <input type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. <input checked="" type="checkbox"/> The designated representative at an Acid Rain source, CAIR source, or Hg Budget source.
3. Application Responsible Official Mailing Address... Organization/Firm: <b>Tampa Electric Company</b> Street Address: <b>P.O. Box 111</b> <b>City: Tampa State: FL Zip Code: 33601-0111</b>
4. Application Responsible Official Telephone Numbers... Telephone: <b>(813) 228-4111</b> ext. Fax: <b>(813) 228-1308</b>
5. Application Responsible Official E-mail Address: <b><u>BTBurrows@TECOenergy.com</u></b>



**APPLICATION INFORMATION**

6. Application Responsible Official Certification:

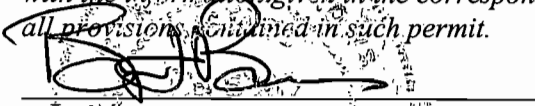
*I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.*

  
Signature

12/31/08  
Date

**APPLICATION INFORMATION**

**Professional Engineer Certification**

1. Professional Engineer Name: <b>Byron T. Burrows</b> Registration Number: <b>53917</b>
2. Professional Engineer Mailing Address... Organization/Firm: <b>Tampa Electric Company</b> Street Address: <b>702 N. Franklin Street</b> City: <b>Tampa</b> State: <b>FL</b> Zip Code: <b>33602</b>
3. Professional Engineer Telephone Numbers... Telephone: <b>(813) 228-1282</b> ext. Fax: <b>(813) 228-1308</b>
4. Professional Engineer E-mail Address: <b><u>BTBurrows@TECOenergy.com</u></b>
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/>, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input type="checkbox"/>, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input checked="" type="checkbox"/>, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i>   Signature _____ Date <u>12/31/08</u> (seal)

\* Attach any exception to certification statement.

## II. FACILITY INFORMATION

### A. GENERAL FACILITY INFORMATION

#### Facility Location and Type

1. Facility UTM Coordinates... Zone <b>17</b> East (km) <b>361.9</b> North (km) <b>3,075.0</b>		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
3. Governmental Facility Code: <b>0</b>	4. Facility Status Code: <b>A</b>	5. Facility Major Group SIC Code: <b>49</b>	6. Facility SIC(s): <b>4911</b>
7. Facility Comment :			

#### Facility Contact

1. Facility Contact Name: <b>Karen Zwolak, Senior Environmental Consultant</b>
2. Facility Contact Mailing Address... Organization/Firm: <b>Tampa Electric Company</b> Street Address: <b>P.O. Box 111</b> City: <b>Tampa</b> State: <b>FL</b> Zip Code: <b>33601-0111</b>
3. Facility Contact Telephone Numbers: Telephone: <b>(813) 228-4111</b> ext.    Fax: <b>(813) 228-1308</b>
Facility Contact E-mail Address: <b><u>KOZwolak@TECOenergy.com</u></b>

#### Facility Primary Responsible Official

**Complete if an "application responsible official" is identified in Section I that is not the facility "primary responsible official."**

1. Facility Primary Responsible Official Name: <b>Ron D. Bishop</b>
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: <b>Tampa Electric</b> Street Address: <b>P.O. Box 111</b> City: <b>Tampa</b> State: <b>FL</b> Zip Code: <b>33601-0111</b>
3. Facility Primary Responsible Official Telephone Numbers... Telephone: <b>(813) 228-4111</b> ext.            Fax: <b>(813) 228-1308</b>
Facility Primary Responsible Official E-mail Address: <b><u>RDBishop@TECOenergy.com</u></b>

## FACILITY INFORMATION

### Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a “major source” and a “synthetic minor source.”

1. <input type="checkbox"/> Small Business Stationary Source	<input type="checkbox"/> Unknown
2. <input type="checkbox"/> Synthetic Non-Title V Source	
3. <input checked="" type="checkbox"/> Title V Source	
4. <input checked="" type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. <input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. <input checked="" type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7. <input type="checkbox"/> Synthetic Minor Source of HAPs	
8. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. <input type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. <input type="checkbox"/> Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:  <b>NSPS for Electric Utility Steam Generating Units for Which Construction is commenced After September 18, 1978 [40 CFR 60 Subpart Da]</b>	

**FACILITY INFORMATION**

**List of Pollutants Emitted by Facility**

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
NOX	A	N
SO2	A	Y
CO	A	N
PM	A	Y
PM10	A	Y
VOC	A	N
H106 (Hydrogen Chloride)	A	N
H107 (Hydrogen Fluoride)	A	N
H133 (Nickel Compounds)	A	N
HAPS (Total)	A	N

**FACILITY INFORMATION**

**B. EMISSIONS CAPS**

**Facility-Wide or Multi-Unit Emissions Caps**

1. Pollutant Subject to Emissions Cap	2. Facility-Wide Cap [Y or N]? (all units)	3. Emissions Unit ID's Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap
<b>SO2</b>	<b>N</b>	<b>001-004</b>		<b>71,810</b>	<b>ESCPSD</b>
<b>PM/PM10</b>	<b>N</b>	<b>001-004</b>		<b>2,767</b>	<b>ESCPSD</b>

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

## FACILITY INFORMATION

### C. FACILITY ADDITIONAL INFORMATION

#### Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <b>June 2008</b>
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <b>June 2008</b>
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <b>June 2008</b>

#### Additional Requirements for Air Construction Permit Applications N/A

1. Area Map Showing Facility Location: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (existing permitted facility)
2. Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL): <input type="checkbox"/> Attached, Document ID: _____
3. Rule Applicability Analysis: <input type="checkbox"/> Attached, Document ID: _____
4. List of Exempt Emissions Units: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable

## FACILITY INFORMATION

### C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

#### Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units:  
 Attached, Document ID: \_\_\_\_\_  Not Applicable (no exempt units at facility)

#### Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities: (Required for initial/renewal applications only)  
 Attached, Document ID: \_\_\_\_\_  Not Applicable (revision application)
2. Identification of Applicable Requirements: (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought)  
 Attached, Document ID: \_\_\_\_\_  
 Not Applicable (revision application with no change in applicable requirements)
3. Compliance Report and Plan: (Required for all initial/revision/renewal applications)  
 Attached, Document ID: Attachment A  
Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.
4. List of Equipment/Activities Regulated under Title VI: (If applicable, required for initial/renewal applications only)  
 Attached, Document ID: \_\_\_\_\_  
 Equipment/Activities Onsite but Not Required to be Individually Listed  
 Not Applicable
5. Verification of Risk Management Plan Submission to EPA: (If applicable, required for initial/renewal applications only)  
 Attached, Document ID: \_\_\_\_\_  Not Applicable
6. Requested Changes to Current Title V Air Operation Permit:  
 Attached, Document ID: Attachment B  Not Applicable



**FACILITY INFORMATION**

**C. FACILITY ADDITIONAL INFORMATION (CONTINUED)**

**Additional Requirements for Facilities Subject to Acid Rain, CAIR, or Hg Budget Program**

1. Acid Rain Program Forms: Acid Rain Part Application (DEP Form No. 62-210.900(1)(a)): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <b><u>June 2008</u></b> <input type="checkbox"/> Not Applicable (not an Acid Rain source) Phase II NO <sub>x</sub> Averaging Plan (DEP Form No. 62-210.900(1)(a)1.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <b><u>June 2008</u></b> <input type="checkbox"/> Not Applicable New Unit Exemption (DEP Form No. 62-210.900(1)(a)2.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input checked="" type="checkbox"/> Not Applicable
2. CAIR Part (DEP Form No. 62-210.900(1)(b)): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <b><u>May 2008</u></b> <input type="checkbox"/> Not Applicable (not a CAIR source)
3. Hg Budget Part (DEP Form No. 62-210.900(1)(c)): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <b><u>May 2008</u></b> <input type="checkbox"/> Not Applicable (not a Hg Budget unit)

**Additional Requirements Comment**

## EMISSIONS UNIT INFORMATION

Section [ 1 ] of [ 1 ]

### III. EMISSIONS UNIT INFORMATION

**Title V Air Operation Permit Application** - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

**Air Construction Permit or FESOP Application** - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

**Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application** - Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 1 ]

**A. GENERAL EMISSIONS UNIT INFORMATION**

**Title V Air Operation Permit Emissions Unit Classification**

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)
- The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.
- The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

**Emissions Unit Description and Status**

1. Type of Emissions Unit Addressed in this Section: (Check one)
- This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).
- This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.
- This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:  
**Unit No. 4 Steam Generator**

3. Emissions Unit Identification Number: **004**

4. Emissions Unit Status Code: <b>A</b>	5. Commence Construction Date: <b>N/A</b>	6. Initial Startup Date: <b>N/A</b>	7. Emissions Unit Major Group SIC Code: <b>49</b>
--	--	--	--

8. Federal Program Applicability: (Check all that apply)
- Acid Rain Unit
- CAIR Unit
- Hg Budget Unit

9. Package Unit:  
 Manufacturer: \_\_\_\_\_ Model Number: \_\_\_\_\_

10. Generator Nameplate Rating: **Nominal 486 MW**

11. Emissions Unit Comment:

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 1 ]

**Emissions Unit Control Equipment/Method: Control 1 of 5**

1. Control Equipment/Method Description:  
**Low-NOx Burners (LBN)**

2. Control Device or Method Code: **205**

**Emissions Unit Control Equipment/Method: Control 2 of 5**

1. Control Equipment/Method Description:  
**Separated Over-Fire Air (SOFA)**

2. Control Device or Method Code: **024**

**Emissions Unit Control Equipment/Method: Control 3 of 5**

1. Control Equipment/Method Description:  
**Selective Catalytic Reduction (SCR)**

2. Control Device or Method Code: **139**

**Emissions Unit Control Equipment/Method: Control 4 of 5**

1. Control Equipment/Method Description:  
**Electrostatic Precipitator (ESP)**

2. Control Device or Method Code: **010**

**Emissions Unit Control Equipment/Method: Control 5 of 5**

1. Control Equipment/Method Description:  
**Flue Gas Desulfurization (FGD)**

2. Control Device or Method Code: **042**

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 1 ]

**B. EMISSIONS UNIT CAPACITY INFORMATION**

(Optional for unregulated emissions units.)

**Emissions Unit Operating Capacity and Schedule**

1. Maximum Process or Throughput Rate: N/A
2. Maximum Production Rate: <b>486 MW</b>
3. Maximum Heat Input Rate: <b>4,330 million Btu/hr*</b>
4. Maximum Incineration Rate: pounds/hr tons/day
5. Requested Maximum Operating Schedule: <b>24 hours/day</b> <b>7 days/week</b> <b>52 weeks/year</b> <b>8760 hours/year</b>
6. Operating Capacity/Schedule Comment: <b>* This value is requested not to be used for compliance demonstration. Rather, the production rate of <u>486 MW</u> is requested to be used for demonstration of compliance.</b>

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 1 ]

**C. EMISSION POINT (STACK/VENT) INFORMATION**  
 (Optional for unregulated emissions units.)

**Emission Point Description and Type**

1. Identification of Point on Plot Plan or Flow Diagram: <b>BB-004</b>		2. Emission Point Type Code: <b>1</b>	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: N/A			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: N/A			
5. Discharge Type Code: <b>V</b>	6. Stack Height: <b>490</b> feet	7. Exit Diameter: <b>24</b> feet	
8. Exit Temperature: <b>127 °F</b>	9. Actual Volumetric Flow Rate: <b>1,614,250</b> acfm	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:			

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 1 ]

**D. SEGMENT (PROCESS/FUEL) INFORMATION**

**Segment Description and Rate: Segment 1 of 5**

1. Segment Description (Process/Fuel Type): <b>Coal</b>		
2. Source Classification Code (SCC): <b>1-01-002-01</b>		3. SCC Units: <b>Tons Burned</b>
4. Maximum Hourly Rate: <b>196.8</b>	5. Maximum Annual Rate: <b>1,724,127.0</b>	6. Estimated Annual Activity Factor: <b>N/A</b>
7. Maximum % Sulfur: <b>3.71</b>	8. Maximum % Ash: <b>10.70</b>	9. Million Btu per SCC Unit: <b>22</b>
10. Segment Comment: <b>The Data in Fields 4, 5, and 9 is based on nominal coal heat content of 11,000 Btu/lb. It is not intended to be used for compliance.</b>		

**Segment Description and Rate: Segment 2 of 5**

1. Segment Description (Process/Fuel Type): <b>Coal/Petroleum coke blend consisting of 20% maximum petroleum coke by weight.</b>		
2. Source Classification Code (SCC): <b>1-01-002-01</b>		3. SCC Units: <b>Tons Burned</b>
4. Maximum Hourly Rate: <b>187.40</b>	5. Maximum Annual Rate: <b>1,642,026.0</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: <b>4.0</b>	8. Maximum % Ash: <b>8.80</b>	9. Million Btu per SCC Unit: <b>23</b>
10. Segment Comment: <b>Data is based on 80/20 weight percent blend of coal/petroleum coke, as received. The Sulfur content in Field 7 is based on 3.71% for coal and 6.0% for petroleum coke. The Ash content in Field 8 is based on 10.7 % for coal and 1.0% for petroleum coke. The Data in Fields 4, 5, and 9 is based on nominal heat content of 11,000 Btu/lb and 13,750 Btu/b for coal and petroleum coke respectively. The values are not intended to be used for compliance.</b>		

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 1 ]

**D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)**

**Segment Description and Rate: Segment 3 of 5**

1. Segment Description (Process/Fuel Type): <b>Distillate (No. 2) Fuel Oil burned during startup, shutdown, flame stabilization and start of mill only.</b>		
2. Source Classification Code (SCC): <b>1-01-005-01</b>		3. SCC Units: <b>1000 Gallons Burned</b>
4. Maximum Hourly Rate: <b>24</b>	5. Maximum Annual Rate: <b>2112.0</b>	6. Estimated Annual Activity Factor: N/A
7. Maximum % Sulfur: <b>0.50</b>	8. Maximum % Ash:	9. Million Btu per SCC Unit: <b>136</b>
10. Segment Comment: <b>Fuel data in Fields 4, 5, and 9 is based on an average fuel heat content of 136,280 Btu/gallon and should not be use for compliance.</b>		

**Segment Description and Rate: Segment 4 of 5**

1. Segment Description (Process/Fuel Type): <b>Raw Coal Residual</b>		
2. Source Classification Code (SCC): <b>1-01-002-01</b>		3. SCC Units: <b>Tons Burned</b>
4. Maximum Hourly Rate: <b>*</b>	5. Maximum Annual Rate: <b>73,000</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: <b>1.43</b>	8. Maximum % Ash: <b>57.7</b>	9. Million Btu per SCC Unit: <b>6.1</b>
10. Segment Comment: <b>* Firing of raw coal residual is limited to 200 tons per day total for Steam Generator Units 1 – 4. The value in Field 5 is the total for Units 1 – 4.</b>		



**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 1 ]

**D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)****Segment Description and Rate: Segment 5 of 5**

1. Segment Description (Process/Fuel Type): <b>Beneficiated Coal Residual</b>		
2. Source Classification Code (SCC): <b>1-01-002-01</b>		3. SCC Units: <b>Tons Burned</b>
4. Maximum Hourly Rate: *	5. Maximum Annual Rate: <b>185,500.0</b>	6. Estimated Annual Activity Factor: <b>N/A</b>
7. Maximum % Sulfur: <b>1.45</b>	8. Maximum % Ash: <b>35.4</b>	9. Million Btu per SCC Unit: <b>17.95</b>
10. Segment Comment: * <b>Firing of beneficiated coal residual is limited to 500 tons per day total for Steam Generator Units 1 – 4.</b> <b>The value in Field 5 is the total for Units 1 – 4. Sulfur, ash, and heat contents are on a dry basis.</b>		

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 1 ]

**E. EMISSIONS UNIT POLLUTANTS**

**List of Pollutants Emitted by Emissions Unit**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	010	042	EL
SO2	042		EL
CO			EL
NOX	205, 024	139	EL
PM10	010	042	NS
VOC			NS
PB			NS
H106 (Hydrogen Chloride)			NS
H107 (Hydrogen Fluoride)			NS
H133 (Nickel Compounds)			NS
HAPS (Total HAPS)			NS

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –  
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**  
(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

**Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions**

1. Pollutant Emitted: <b>CO</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 866 lb/hour                      3793.1 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: <b>0.20 lb/MMBtu</b>  Reference: <b>Allowable emission rate as per CO Optimization Study</b>		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: <b>N/A</b> From:                                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:			
11. Potential, Fugitive, and Actual Emissions Comment: <b>FINAL Permit revision No.: 0570039-028-AV</b>  <b>Emission Factor of 0.20 lb/MMBtu is requested by the enclosed Attachment B (CO/NOx Optimization Study Report – Attachment B).</b>  <b>Unit 4 is also subject to the applicable requirements of Consent Final Judgment (DEP vs. TEC) dated December 6, 1999; and the Consent Decree (U.S. vs. TEC) dated February 29, 2000, as amended.</b>			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
ALLOWABLE EMISSIONS**

**Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.**

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: <b>RULE</b>	2. Future Effective Date of Allowable Emissions: N/A
3. Allowable Emissions and Units: <b>0.20 lb/MMBtu (30-day rolling average)</b>	4. Equivalent Allowable Emissions: <b>866 lb/hour                      3,793 tons/year</b>
5. Method of Compliance: <b>Continuous Emissions Monitoring System (CEMS)</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>Rule 62-4.070(3) and 62-210.200 (BACT), F.A.C.</b>	

Allowable Emissions Allowable Emissions \_\_ of \_\_

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions \_\_ of \_\_

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 1 ]

**G. VISIBLE EMISSIONS INFORMATION**

**Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation. (SEE PREVIOUSLY SUBMITTED RENEWAL APPLICATION DATED JUNE 2008)**

**Visible Emissions Limitation:** Visible Emissions Limitation of

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions:                    %    Exceptional Conditions:                    % Maximum Period of Excess Opacity Allowed:                    min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

**Visible Emissions Limitation:** Visible Emissions Limitation \_\_ of \_\_

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions:                    %    Exceptional Conditions:                    % Maximum Period of Excess Opacity Allowed:                    min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 1 ]

**H. CONTINUOUS MONITOR INFORMATION**

**Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.**

**Continuous Monitoring System:** Continuous Monitor 1 of 1

1. Parameter Code: <b>EM</b>	2. Pollutant(s): <b>CO</b>
3. CMS Requirement:	<input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: <b>THERMO</b> Model Number: <b>48i</b> Serial Number: <b>631019285</b>	
5. Installation Date: <b>March 25, 2008</b>	6. Performance Specification Test Date: <b>March 25, 2008</b>
7. Continuous Monitor Comment:	

**Continuous Monitoring System:** Continuous Monitor \_\_\_ of \_\_\_

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 1 ]

**I. EMISSIONS UNIT ADDITIONAL INFORMATION**

**Additional Requirements for All Applications, Except as Otherwise Stated**

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____
2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____
3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____
4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records: <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>May 9, 2008</u> Test Date(s)/Pollutant(s) Tested: <u>March 25, 2008 / Initial CO Monitor Certification</u> <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute:

Attached, Document ID: \_\_\_\_\_  Not Applicable



# Appendix A

## COMPLIANCE REPORT

The following Rules to this Title V Permit Revision Application identify the requirements that are applicable to the emissions units that comprise the Title V source. Each emission unit is compliance, and will continue to comply, with the respective applicable requirements.

## IDENTIFICATION OF APPLICABLE REQUIREMENTS

### A. FACILITY-WIDE REQUIREMENTS

#### Federal

- 40 CFR 61, Subpart A: General Provisions.
- 40 CFR 61, Subpart M: NESHAP for Asbestos.
- 40 CFR 82: Protection of Stratospheric Ozone.
- 40 CFR 82, Subpart B: Production and Consumption Controls.
- 40 CFR 82, Subpart F: Recycling and Emissions Reduction.

#### State

#### **CHAPTER 62-4, F.A.C.: PERMITS, effective 03-16-08**

- 62-4.030, F.A.C.: General Prohibition.
- 62-4.040, F.A.C.: Exemptions.
- 62-4.050, F.A.C.: Procedure to Obtain Permits; Application.
- 62-4.060, F.A.C.: Consultation.
- 62-4.070, F.A.C.: Standards for Issuing or Denying Permits; Issuance; Denial.
- 62-4.080, F.A.C.: Modification of Permit Conditions.
- 62-4.090, F.A.C.: Renewals.
- 62-4.100, F.A.C.: Suspension and Revocation.
- 62-4.110, F.A.C.: Financial Responsibility.
- 62-4.120, F.A.C.: Transfer of Permits.
- 62-4.130, F.A.C.: Plant Operation—Problems.
- 62-4.150, F.A.C.: Review.
- 62-4.160, F.A.C.: Permit Conditions.
- 62-4.210, F.A.C.: Construction Permits.
- 62-4.220, F.A.C.: Operation Permit for New Sources.

#### **CHAPTER 62-210, F.A.C.: STATIONARY SOURCES—GENERAL REQUIREMENTS, effective 03-16-08**

- 62-210.300, F.A.C.: Permits Required.
- 62-210.300(1), F.A.C.: Air Construction Permits.
- 62-210.300(2), F.A.C.: Air Operation Permits.
- 62-210.300(3), F.A.C.: Exemptions.
- 62-210.300(5), F.A.C.: Notification of Startup.
- 62-210.300(6), F.A.C.: Emissions Unit Reclassification.
- 62-210.300(7), F.A.C.: Transfer of Air Permits.
- 62-210.350, F.A.C.: Public Notice and Comment.
- 62-210.350(1), F.A.C.: Public Notice of Proposed Agency Action.

## IDENTIFICATION OF APPLICABLE REQUIREMENTS

- 62-210.350(2), F.A.C.: Additional Public Notice Requirements for Emissions Units Subject to Prevention of Significant Deterioration or Nonattainment-Area Preconstruction Review.
- 62-210.350(3), F.A.C.: Additional Public Notice Requirements for Sources Subject to Operation Permits for Title V Sources.
- 62-210.360, F.A.C.: Administrative Permit Corrections.
- 62-210.370(3), F.A.C.: Annual Operating Report for Air Pollutant Emitting Facility.
- 62-210.400, F.A.C.: Emission Estimates.
- 62-210.650, F.A.C.: Circumvention.
- 62-210.700, F.A.C.: Excess Emissions.
- 62-210.900, F.A.C.: Forms and Instructions.
- 62-210.900(1), F.A.C.: Application for Air Permit – Title V Source, Form and Instructions.
- 62-210.900(5), F.A.C.: Annual Operating Report for Air Pollutant Emitting Facility, Form and Instructions.
- 62-210.900(7), F.A.C.: Application for Transfer of Air Permit – Title V and Non-Title V Source.

### **CHAPTER 62-212, F.A.C.: STATIONARY SOURCES—PRECONSTRUCTION REVIEW, effective 07-16-07**

### **CHAPTER 62-213, F.A.C.: OPERATION PERMITS FOR MAJOR SOURCES OF AIR POLLUTION, effective 03-16-08**

- 62-213.205, F.A.C.: Annual Emissions Fee.
- 62-213.400, F.A.C.: Permits and Permit Revisions Required.
- 62-213.410, F.A.C.: Changes Without Permit Revision.
- 62-213.412, F.A.C.: Immediate Implementation Pending Revision Process.
- 62-213.415, F.A.C.: Trading of Emissions Within a Source.
- 62-213.420, F.A.C.: Permit Applications.
- 62-213.430, F.A.C.: Permit Issuance, Renewal, and Revision.
- 62-213.440, F.A.C.: Permit Content.
- 62-213.450, F.A.C.: Permit Review by EPA and Affected States
- 62-213.460, F.A.C.: Permit Shield.
  
- 62-213.900, F.A.C.: Forms and Instructions.
- 62-213.900(1), F.A.C.: Major Air Pollution Source Annual Emissions Fee Form.
- 62-213.900(7), F.A.C.: Statement of Compliance Form.

## IDENTIFICATION OF APPLICABLE REQUIREMENTS

### CHAPTER 62-296, F.A.C.: STATIONARY SOURCES—EMISSION STANDARDS, effective 02-07-08

62-296.320(4)(c), F.A.C.: Unconfined Emissions of Particulate Matter.  
62-296.320(2), F.A.C.: Objectionable Odor Prohibited.

### CHAPTER 62-297, F.A.C.: STATIONARY SOURCES—EMISSIONS MONITORING, effective 02-12-04

62-297.310, F.A.C.: General Test Requirements.  
62-297.330, F.A.C.: Applicable Test Procedures.  
62-297.340, F.A.C.: Frequency of Compliance Tests.  
62-297.345, F.A.C.: Stack Sampling Facilities Provided by the Owner of an Emissions Unit.  
62-297.350, F.A.C.: Determination of Process Variables.  
62-297.570, F.A.C.: Test Report.  
62-297.620, F.A.C.: Exceptions and Approval of Alternate Procedures and Requirements.

### Miscellaneous

### CHAPTER 28-106, F.A.C.: DECISIONS DETERMINING SUBSTANTIAL INTERESTS

### CHAPTER 62-110, F.A.C.: EXCEPTION TO THE UNIFORM RULES OF PROCEDURE, effective 07-01-98

### CHAPTER 62-256, F.A.C.: OPEN BURNING AND FROST PROTECTION FIRES, effective 07-06-05

### **B. UNIT NOS. 1-3 STEAM GENERATORS: EU ID NOS. 001, 002, AND 003**

#### **Federal**

40 CFR Part 60, Subpart HHHH: Emission Guidelines and Compliance Times for Coal-Fired Electric Steam Generating Units (as cited by 62-296.480, F.A.C.) [The Clean Air Mercury Rule was vacated by the U.S. Supreme Court on February 8, 2008]  
40 CFR Part 64: Compliance Assurance Monitoring  
40 CFR Part 68: Chemical Accident Prevention Program  
40 CFR Parts 72, 75, 76, 77, and 78: Acid Rain Program  
40 CFR Part 96: CAIR NO<sub>x</sub> and SO<sub>2</sub> Trading Program for State Implementation Plans (as cited by 62-296.470, F.A.C)

Consent Final Judgment (DEP vs. TEC) dated December 6, 1999, as amended.

## IDENTIFICATION OF APPLICABLE REQUIREMENTS

### State

Chapter 62-214, F.A.C. Acid Rain Program

62-296.405(1) F.A.C.: Existing Fossil Fuel Steam Generators with More Than 250 Million Btu Per Hour Heat Input. (Effective 3/2/99)

62-296.470, F.A.C.: Implementation of Federal Clean Air Interstate Rule (Effective 4/1/07)

62-296.480, F.A.C.: Implementation of Federal Clean Air Mercury Rule (Effective 9/6/06) [The Clean Air Mercury Rule was vacated by the U.S. Supreme Court on February 8, 2008]

FINAL Permit No: 0570039-028-AV Permit Condition Nos. A.1. – A.37.

[Please see Attachment I for requested changes to FINAL Permit No: 0570039-028-AV]

Air Construction Permit No: 0570039-012-AC (Units 1-4 Coal Residual)

Air Construction Permit No: 0570039-024-AC (Units 1 and 2 SCR)

Air Construction Permit Nos: 0570039-022-AC, 0570039-030-AC, 0570039-035-AC (Unit 3 SCR)

Consent Decree (U.S. vs. TEC) dated February 29, 2000, as amended.

### C. UNIT NO. 4 STEAM GENERATOR: EU ID NO. 004

### Federal

40 CFR Part 60, Subpart A: General Provisions

40 CFR Part 60, Subpart Da: Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978.

40 CFR Part 60, Subpart HHHH: Emission Guidelines and Compliance Times for Coal-Fired Electric Steam Generating Units (as cited by 62-296.480, F.A.C.) [The Clean Air Mercury Rule was vacated by the U.S. Supreme Court on February 8, 2008]

40 CFR Part 64: Compliance Assurance Monitoring

40 CFR Part 68: Chemical Accident Prevention Program

40 CFR Parts 72, 75, 76, 77, and 78: Acid Rain Program

40 CFR Part 96: CAIR NO<sub>x</sub> and SO<sub>2</sub> Trading Program for State Implementation Plans (as cited by 62-296.470, F.A.C)

Consent Final Judgment (DEP vs. TEC) dated December 6, 1999, as amended.

### State

Chapter 62-214, F.A.C. Acid Rain Program

## IDENTIFICATION OF APPLICABLE REQUIREMENTS

62-296.405(2), F.A.C.: New Fossil Fuel Steam Generators with More Than 250 Million Btu Per Hour Heat Input. (Effective 3/2/99)

62-296.470, F.A.C.: Implementation of Federal Clean Air Interstate Rule (Effective 4/1/07)

62-296.480, F.A.C.: Implementation of Federal Clean Air Mercury Rule (Effective 9/6/06) [The Clean Air Mercury Rule was vacated by the U.S. Supreme Court on February 8, 2008]

FINAL Permit No: 0570039-028-AV Permit Condition Nos. B.1. – B.70.

[Please see Attachment I for requested changes to FINAL Permit No: 0570039-028-AV]

Power Plant Siting Certification PA 79-12

Prevention of Significant Deterioration Permit PSD-FL-040

Air Construction Permit No: 0570039-012-AC (Units 1-4 Coal Residual)

Air Construction Permit Nos: 0570039-020-AC, 0570039-026-AC, 0570039-031-AC, 0570039-036-AC (Unit 4 SCR)

Air Construction Permit No: 0570039-027-AC (Unit 4 CO BACT)

Consent Final Judgment (DEP vs. TEC) dated December 6, 1999, as amended.

### **D. COMBUSTION TURBINE NO. 1: EU ID NO. 007**

#### **Federal**

None

#### **State**

62-296.320(4)(b)., F.A.C.: General Visible Emissions Standard

FINAL Permit No: 0570039-028-AV Permit Condition Nos. C.1. – C.12.

[Please see Attachment I for requested changes to FINAL Permit No: 0570039-028-AV]

### **E. COMBUSTION TURBINE NOS. 2 AND 3: EU ID NOS. 005 AND 006**

#### **Federal**

40 CFR Part 96: CAIR NO<sub>x</sub> and SO<sub>2</sub> Trading Program for State Implementation Plans (as cited by 62-296.470, F.A.C)

#### **State**

62-296.320(4)(b)., F.A.C.: General Visible Emissions Standard

62-296.470, F.A.C.: Implementation of Federal Clean Air Interstate Rule. (Effective 4/1/07)

## IDENTIFICATION OF APPLICABLE REQUIREMENTS

FINAL Permit No: 0570039-028-AV Permit Condition Nos. C.1. – C.12.

[Please see Attachment I for requested changes to FINAL Permit No: 0570039-028-AV]

**F. FLY ASH HANDLING AND STORAGE: EU ID NOS. 008, 018, 009, 019, AND 026**

**Federal**

None

**State**

62-296.320(4)(b)., F.A.C.: General Visible Emissions Standard

Power Plant Siting Certification PA 79-12

FINAL Permit No: 0570039-028-AV Permit Condition Nos. D.1. – D.12.

[Please see Attachment I for requested changes to FINAL Permit No: 0570039-028-AV]

**G. FLY ASH SILO NO. 3: EU ID NOS. 014, 027, AND 028**

**Federal**

None

**State**

62-296.320(4)(b)., F.A.C.: General Visible Emissions Standard

Power Plant Siting Certification PA 79-12

FINAL Permit No: 0570039-028-AV Permit Condition Nos. E.1. – E.4.

[Please see Attachment I for requested changes to FINAL Permit No: 0570039-028-AV]

**H. LIMESTONE HANDLING AND STORAGE: EU ID NOS. 011, 012, 013, 023, AND 025**

**Federal**

None

**State**

62-296.320(4)(b)., F.A.C.: General Visible Emissions Standard

Prevention of Significant Deterioration Permit PSD-FL-040



## IDENTIFICATION OF APPLICABLE REQUIREMENTS

Power Plant Siting Certification PA 79-12

FINAL Permit No: 0570039-028-AV Permit Condition Nos. F.1. – F.5.

[Please see Attachment I for requested changes to FINAL Permit No: 0570039-028-AV]

### **I. COAL BUNKERS WITH ROTO-CLONES: EU ID NOS. 015, 016, 017, AND 039**

#### **Federal**

None

#### **State**

62-296.320(4)(b)., F.A.C.: General Visible Emissions Standard

FINAL Permit No: 0570039-028-AV Permit Condition Nos. G.1. – G.7.

[Please see Attachment I for requested changes to FINAL Permit No: 0570039-028-AV]

### **J. SOLID FUEL YARD: EU ID NOS. 010, 029, AND 030**

#### **Federal**

None

#### **State**

62-296.320(4)(b)., F.A.C.: General Visible Emissions Standard (EU IDs 029 and 030)

62-296.320(4)(c)., F.A.C.: Unconfined Emissions of Particulate Matter

62-296.711, F.A.C.: Materials Handling, Sizing, Screening, Crushing, and Grinding Operations

Power Plant Siting Certification PA 79-12

Prevention of Significant Deterioration Permit PSD-FL-040

FINAL Permit No: 0570039-028-AV Permit Condition Nos. H.1. – H.12.

[Please see Attachment I for requested changes to FINAL Permit No: 0570039-028-AV]

**IDENTIFICATION OF APPLICABLE REQUIREMENTS**

**K. SURFACE COATING OF MISCELLANEOUS METAL PARTS: EU ID NO. 032**

**Federal**

None

**State**

62-296.500, F.A.C.: Reasonably Available Control Technology (RACT) – Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx) Emitting Facilities (effective 1/1/96)

62-296.513., F.A.C.: Surface Coating of Miscellaneous Metal Parts and Products (Effective 1/1/96)

FINAL Permit No: 0570039-028-AV Permit Condition Nos. I.1. – I.8.

[Please see Attachment I for requested changes to FINAL Permit No: 0570039-028-AV]

**L. ABRASIVE BLAST BOOTH: EU ID NO. 033  
ABRASIVE BLAST MEDIA: EU ID NO. 034**

**Federal**

None

**State**

62-296.712(2), F.A.C.: Reasonably Available Control Technology (RACT) – Particulate Matter, Miscellaneous Manufacturing Process Operations (effective 1/1/96)

FINAL Permit No: 0570039-028-AV Permit Condition Nos. J.1. – J.8.

[Please see Attachment I for requested changes to FINAL Permit No: 0570039-028-AV]

## IDENTIFICATION OF APPLICABLE REQUIREMENTS

### **M. SURFACE COATING OF SHIPS: EU ID NO. 035**

#### **Federal**

40 CFR Part 63, Subpart A: General Provisions

40 CFR Part 63, Subpart II: National Emission Standards for Shipbuilding and Ship Repair (Surface Coating)

#### **State**

62-296.500, F.A.C.: Reasonably Available Control Technology (RACT) – Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx) Emitting Facilities (effective 1/1/96)

FINAL Permit No: 0570039-028-AV Permit Condition Nos. K.1. and K.2.

[Please see Attachment I for requested changes to FINAL Permit No: 0570039-028-AV]

### **N. LIMESTONE HANDLING SYSTEM FOR FGD SYSTEM FOR UNITS 1 AND 2: EU ID NOS. 020 AND 021**

#### **Federal**

40 CFR Part 60, Subpart A: General Provisions

40 CFR Part 60, Subpart OOO: Standards of Performance for Nonmetallic Mineral Processing Plants.

#### **State**

62-296.711(2)(b), F.A.C.: Materials Handling, Sizing, Screening, Crushing, and Grinding Operations

FINAL Permit No: 0570039-028-AV Permit Condition Nos. L.1. – L.11.

[Please see Attachment I for requested changes to FINAL Permit No: 0570039-028-AV]

## IDENTIFICATION OF APPLICABLE REQUIREMENTS

O. LIME SILO FOR WASTEWATER TREATMENT PLANT FOR THE CHLORIDE BLEED STREAM: EU ID NO. 022

**Federal**

None

**State**

62-296.700(2)(c), F.A.C.: Reasonably Available Control Technology (RACT) Particulate Matter (effective 1/1/96), Exemptions

FINAL Permit No: 0570039-028-AV Permit Condition Nos. M.1. – M.7.

[Please see Attachment I for requested changes to FINAL Permit No: 0570039-028-AV]

# Appendix B

# Tampa Electric Company



## Big Bend Station Unit 4

## Carbon Monoxide Optimization Study Report



December 18, 2008

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## 1.0 Introduction

Tampa Electric Company (TEC) completed the installation of low-NOx burners (LNB), separate over-fire air (SOFA), and a Selective Catalytic Reduction (SCR) system on the Big Bend Station Unit 4 (Unit 4) to reduce the nitrogen oxide (NOx) emissions. Due to the inverse relationship between NOx and carbon monoxide (CO), an air construction permit application was submitted to the Florida Department of Environmental Protection to allow the increase of CO emissions. The Department responded by issuing FDEP permit No. 0570039-027-AC to allow for the increase of CO emissions with an interim emissions limit of 0.20 lb/MMBtu. Following discussions with the Department, a request was granted to extend the 0570039-027-AC expiration date to March 31, 2009. The Department has since changed the permit to FDEP file 0570039-042-AC.

To satisfy the requirements of the Department air construction permit 0570039-027-AC, TEC installed and certified a CO, Continuous Emissions Monitoring System (CEMS) on Unit 4. The CO CEMS was certified on March 24, 2008. The CO CEMS is collocated with the existing 40CFR75 (Nitrogen Oxides/Carbon Dioxide) and 40CFR60 (Sulfur Dioxide) CEMS located on the duct work between the Electrostatic Precipitator (ESP) and the Flue Gas De-Sulfurization (FGD) system.

Pursuant to the requirements of Section 3 Condition 15 of the Air Permit 0570039-027-AC Tampa Electric is required to submit a report to the Department summarizing the results of the Optimization Study (Report) period. The intent of the Report is to evaluate the emissions relationships of Carbon Monoxide and Nitrogen Oxide to determine a reasonable CO emissions limit. Following the results outlined in the report, operation scenarios are explained and are used to illustrate the need for the CO limit 0.20 lb/MMBtu.



## **2.0 Facility description**

Tampa Electric Company's (TEC) Big Bend Station is located at 13031 Wyandotte Road, Apollo Beach, Hillsborough County, Florida. UTM Coordinates are Zone 17, 361.9 km East and 3075.0 km North; Latitude: 27° 47' 36" North and Longitude: 82° 24' 11" West. Big Bend Unit 4 is a nominally 4330 million British thermal units (MMBtu)/hour heat input, dry-bottom tangentially fired utility boiler. The generator nameplate nominal capacity is 486 megawatts (MW). Unit 4 began commercial operation in 1985. Particulate matter (PM) emissions generated during the operation of the unit are controlled by a dry electrostatic precipitator (ESP) manufactured by Belco. Oxides of Nitrogen emissions are controlled by a combination of low NO<sub>x</sub> burners, separate over-fire air, and a selective catalytic reduction (SCR) system. Sulfur dioxide emissions are controlled by flue gas de-sulfurization (FGD) equipment manufactured by Research-Cottrell. The fuel fired in Unit 4 consists of coal, or a coal/petroleum coke blend containing a maximum of 20% petroleum coke by weight, or coal blended with coal residual generated from the Polk Power Station, or a coal/petroleum coke blend further blended with coal residual generated from the Polk Power Station. Along with the carbon monoxide (CO) continuous emissions monitoring system (CEMS), the unit is also equipped with an Acid Rain sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) CEMS located in the ductwork between the ESP and the FGD.

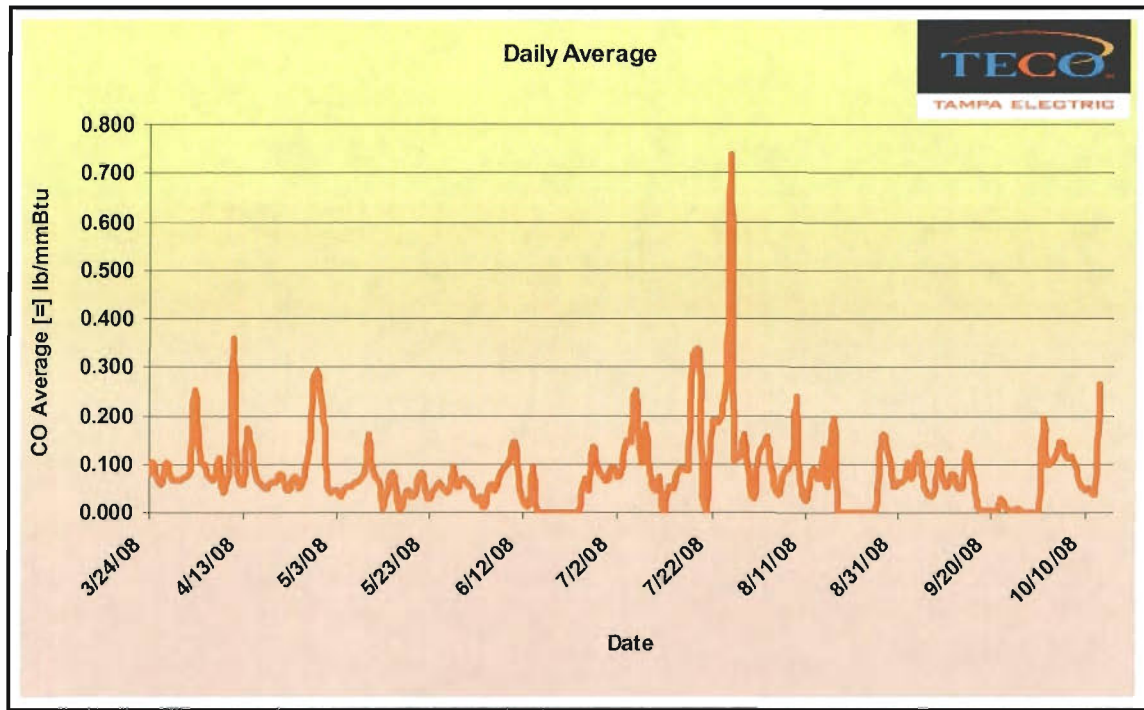
## **3.0 Operating Scenarios**

Big Bend Station made a significant investment in an emerging technology called Neural Network. The Neural Network is designed with artificial intelligent capability to maximize the boiler and related components along with the air pollution controls operating efficiencies. The Neural Network on Unit 4 was operating during a period including March 2008. However, due to maintenance issues, the Neural Network was disabled for a short time in August of 2008. This situation demanded that Big Bend Power Station operate at a more conservative set point for CO to ensure that the interim

limit for CO was met. If this set point was to be continued there could be lasting ill effects on the Selective Catalytic Reduction (SCR) pollution control equipment and the catalyst because of the increase of ammonia injection.

#### 4.0 Big Bend Unit 4 CO Emissions Results

Beginning on March 24, 2008 Big Bend Unit 4 began gathering CO data from the certified CEMS. One factor that must be considered is the relatively recent installation of the SCR and the young age of the catalyst. If Unit 4 is controlled to a Carbon Monoxide below 0.20 lb/MMBtu there is an immediate effect on the inlet NO<sub>x</sub> to the SCR. This in turn increases the ammonia injection to reduce NO<sub>x</sub>. The data taken during this study had the benefit of new catalyst in the SCR.



Above is a graphical representation of the highly variable Daily Averages for Carbon Monoxide for Big Bend Unit 4 during the 6 month evaluation period following the CO-CEMS certification. The limit for Unit 4 Carbon Monoxide is on a 30-day rolling

average. During the period of study there were no 30-day rolling averages above the 0.20 lb/MMBtu limit. However, there were several daily averages that demonstrated well above the 0.20 lb/MMBtu according to CEMS data. In fact, 10% of the daily averages are above 0.20 lb/MMBtu. This information can be used to evaluate the strenuousness of the limit on a 30-day rolling average. The history of the process and knowledge gained from operating BB Unit 4 with the SCR while monitoring CO shows that when CO rises it is not a slow rise but rather a high sudden peak. This particular characteristic of the process creates a difficulty controlling to a limit despite a 30-day rolling average. It is feasible that an anomaly in the operation can occur causing the system deemed out of compliance. These anomalies are sudden and can have an irreversible effect on CO compliance.

Another factor that must be considered in this optimization study is the length of the study. A coal fired power plant can experience an infinite number operational issues and a period of 180 operating days can only reasonably capture a fraction of those scenarios. Major consideration must be given to the fact that the study period only spanned two seasons whereas coal power plant operation is highly dependent on seasonal variables. Operating scenarios that typically take place during late fall and winter.

Appendix A contains Big Bend Unit 4 daily averages for CO, NO<sub>x</sub>, and heat input, as well the 30-day rolling averages of Carbon Monoxide for Unit 4.

## 5.0 Conclusion

Therefore, TEC requests that the permitted CO limit remain at 0.20 lb/MMBtu for the following reasons:

- Operating Unit 4 at conditions to meet a lower limit will decrease the unit's efficiency, thereby effectively could negatively impact the emissions of all pollutants.
- This study was conducted with the SCR catalyst in optimum (new) condition. The 0.20 lb/MMBtu CO limit allows for better operational efficiency over the catalyst life.
- CO emissions are highly variable and change considerably based on operation variables experienced. The study period allowed consideration of only a fraction of these variables.

Therefore with the APCs mentioned above, a CO limit of 0.20 lb/MMBtu for Unit 4 represents good combustion practices and is in the confined of Best Available Control Technology.

## APPENDIX A

### NO<sub>x</sub>/MW DATA

