



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

September 19, 2008

Electronically Sent – Received Receipt Requested

Mr. David M. Lukcic
Manager of Environmental Programs
Tampa Electric Company
P.O. Box 111
Tampa, Florida 33601-0111

RE: Application for Authorization to Construct Two Simple Cycle Combustion Turbines and One Emergency Diesel Engine/Generator Set
Project No. 0570039-040-AC
Big Bend Power Station

Dear Mr. Lukcic:

On August 22, 2008, the Department of Environmental Protection (Department) received a request for authorization to construct two simple cycle combustion turbines and one emergency diesel engine/ generator set. Based on our review of the proposed project, we have determined that the following additional information is needed in order to continue processing this application package. Please provide all assumptions, calculations, and reference materials, that are used or reflected in any of your responses to the following issues:

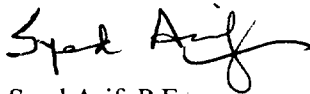
1. Are you planning to convert these simple cycle combustion turbine (SCCT) systems into combined cycle CT systems? If so, when?
2. On the application page F.1. for a SCCT system, a total percent efficiency control value for the pollutant nitrogen oxides (NOx) is stated as 88%. What is the basis for the value and provide an explanation and/or the reference material to support this value?
3. On the application page F.1. for a SCCT system, a total percent efficiency control value for the pollutant carbon monoxide (CO) is stated as 90%. What is the basis for the value and provide an explanation and/or the reference material to support this value?
4. On the application page F.1. for a SCCT system, a total percent efficiency control value for the pollutant volatile organic compounds (VOC) is stated as 50%. What is the basis for the value and provide an explanation and/or the reference material to support this value?
5. For the proposed emergency diesel engine, where are you going to store the Ultra Low Sulfur Diesel (ULSD) fuel? Is there an existing ULSD fuel storage tank on-site? If so, please describe.
6. Explain how you plan to demonstrate compliance with the NOx emissions standard using the emissions monitoring provisions of Title 40, Code of Federal Regulations, Part 75 (40 CFR 75). Provide a detailed plan regarding this issue.
7. Please provide a detailed rule applicability determination for the provisions contained in 40 CFR 60, Subpart KKKK, for a SCCT.

Tampa Electric Company
Big Bend Power Station
Project No. 0570039-040-AC
Page 2 of 2

8. Comments were received from the Hillsborough County Environmental Protection Commission. These comments are attached and must be addressed as part of this incompleteness letter.

The Department will resume processing this application after receipt of the requested information. If you have any questions regarding this matter, please call Bruce Mitchell at (850)413-9198.

Sincerely,



Syed Arif, P.E.
New Source Review Section
Bureau of Air Regulation

SA/bm

Attachment

cc: Mr. David M. Lukcic, Tampa Electric Company (dmlukcic@tecoenergy.com)
Mr. Byron T. Burrows, Tampa Electric Company (btburrows@tecoenergy.com)
Mr. Thomas W. Davis, P.E., Environmental Consulting & Technology, Inc. (tdavis@ectinc.com)
Mr. Jerry Campbell, Hillsborough County Environmental Protection Commission (campbell@epchc.org)
Ms. Diana Lee, Hillsborough County Environmental Protection Commission, (Lee@epchc.org)
Mr. Roger Zhu, Hillsborough County Environmental Protection Commission, (Zhu@epchc.org)

MEMORANDUM

DATE: September 16, 2008

TO: Bruce Mitchell

FROM: Roger Zhu **THRU:** Diana M. Lee, P. E.
Sterlin Woodard, P.E.

SUBJECT: **TEC Big Bend Power Station (BBS) AC Application Review**
Construction of Two Simple-Cycle Combustion Turbines (SCCTs)
FDEP Project No. 0570039-040-AC

After reviewing the AC permit application received on August 26, 2008 for the construction of two SCCTs at TEC BBS site, the following comments are provided for your review:

1. This AC Permit Application is for construction/installation of a Pratt & Whitney Power System (PWPS) FT8-3 SWIFTPAC unit (CT Unit 4), which is comprised of two (2) SCCTs to one common generator, and also is for construction/installation of a 800 KW Caterpillar diesel engine, which provides electricity to CT Unit 4 in the event of power interruption from the grid. During this co-review, EPC staff acknowledges that the CT Unit 4 and the Caterpillar diesel engine are the identical units that will be installed at TEC Bayside site. However, the manufacturer specifications for these units were not included in the Bayside AC Permit Application dated 3/20/07 and 8/11/08 nor in this Big Bend AC Permit Application, except for information or data prepared and provided by the engineering consultant, ECT. Pursuant to Rules 62-4.070(1) and 62-210.200(244), F.A.C., and in order to verify the potential to emit, please provide design specifications on the SCCT. The specifications should include, but not limited to, design/operation parameters, the turbine heat input at peak load on either natural gas (NG) or ultra low sulfur diesel (ULSD) fuel usage.

2. Page 16 in the Application indicates that the maximum heat input rates are 342.7 MMBtu/hr for NG and 302.7 MMBtu/hr for ULSD. This AC project is subject to the NSPS, Subpart KKKK. Page 21 in the Application indicates that the NO_x emission standard for ULSD is 42 ppmvd @ 15% O₂, on which the emission estimates in Appendix B, Table B-7 and Table B-11, in the Application are based on. Table 1 of the NSPS, Subpart KKKK, shows the NO_x emission standard as 74 ppmvd @ 15% O₂ for a new turbine firing fuel other than NG with a range of heat input of 50 ~ 850 MMBtu/hr. Pursuant to Rule 62-4.070(1), F.A.C., please provide reasonable

assurance based on plans, test results and/or manufacturer's information or guarantees that the emission unit can meet the lower 42 ppmvd @ 15% O₂ NO_x emission standard.

3. NSPS, Subpart KKKK, regulates and establishes emission standards for NO_x and SO₂. The NO_x and SO₂ PTE emissions estimates in the Application are calculated based on the emissions standards of the Subpart. Pursuant to Rule 62-4.070(1), F.A.C., please explain how the other air pollutants (CO, PM/PM₁₀, VOC, Pb and H₂SO₄ mist) hourly emission rate (lb/hr) are determined for a purpose of PTE estimates. According to the Application, the hourly emission rates, i.e., CO: 9.1 lb/hr; PM/PM₁₀: 7.5 lb/hr; VOC: 5.1 lb/hr, etc, appear to be from the vendor (PWPS) data. Pursuant to Rule 62-4.070(1), F.A.C., please provide justification for the PTE estimates and provide reasonable assurance based on plans, test results and/or manufacturer's information or guarantees that the emission unit can meet these emission rates and PTE limitations. Furthermore, have the emission factors in the AP-42, Table 3.1, been taken into consideration in comparison with the vendor data?

4. The 800 KW Caterpillar DSR4B Generator C27 TA Diesel Engine is subject to NSPS, Subpart III. The Section 4.1.2, Page 4-3, in the Application states that the diesel engine will have a displacement of less than 30 liters per cylinder. Pursuant to Rules 62-4.070(1) and 62-210.200(244), F.A.C., and in order to verify the potential to emit, please provide design specifications on the Caterpillar diesel engine. The specifications should include, but not limited to, design/operation parameters, the engine order/manufacture date, the actual displacement per cylinder, manufacturer certifications or engine testing data. In addition, pursuant to 40 CFR 60.4202©, it states that *stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines to the certification emission standards for new marine CI engines in 40 CFR 94.8, as applicable, for all pollutants, for the same displacement and maximum engine power.* According to Appendix B, Table B-16, in the Application, the emission limits used for PTE estimates are calculated based on NO_x: 5.26 g/hp-hr; CO: 0.26 g/hp-hr; VOC: 0.03 g/hp-hr; PM/PM₁₀/PM_{2.5}: 0.024 g/hp-hr and SO₂: 0.004 g/hp-hr. Pursuant to Rule 62-4.070(1), F.A.C., please provide reasonable assurance based on plans, test results and/or manufactures information or guarantees that the emission unit can meet these PTE limitations.

Livingston, Sylvia

From: Byron Burrows [btburrows@tecoenergy.com]
Sent: Friday, September 19, 2008 10:12 AM
To: Livingston, Sylvia
Subject: Re: RAI -0570039-040-AC (TECO Big Bend Power Station)

Hi Sylvia:
I can view the document.
Thanks,

Byron

>>> "Livingston, Sylvia" <Sylvia.Livingston@dep.state.fl.us> 09/19/08 9:57 AM >>>

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software, *noting that you can view the documents*, and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: <<http://www.adobe.com/products/acrobat/readstep.html>> .

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

Sylvia Livingston
Bureau of Air Regulation
Division of Air Resource Management (DARM)
850/921-0771
sylvia.livingston@dep.state.fl.us

<<0570039-040-AC.pdf>>

The Department of Environmental Protection values your feedback as a customer. DEP Secretary Michael W. Sole is committed to continuously assessing and improving the level and quality of services provided to you. Please take a few minutes to comment on the quality of service you received. Simply click on [this link to the DEP Customer Survey](#). Thank you in advance for completing the survey.

Livingston, Sylvia

From: Tom Davis [tdavis@ectinc.com]
Sent: Friday, September 19, 2008 10:12 AM
To: Livingston, Sylvia
Subject: RE: RAI -0570039-040-AC (TECO Big Bend Power Station)

Sylvia,

I have received and can view the documents you provided.

Thanks.

From: Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]
Sent: Friday, September 19, 2008 9:58 AM
To: btburrows@tecoenergy.com; dmlukcic@tecoenergy.com
Cc: tdavis@ectinc.com; campbell@epchc.org; Lee@epchc.org; Roger Zhu \('Roger Zhu \((E-mail)\)'\); Arif, Syed; Walker, Elizabeth \((AIR)\)
Subject: RAI -0570039-040-AC (TECO Big Bend Power Station)

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software, *noting that you can view the documents*, and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

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The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

Sylvia Livingston
Bureau of Air Regulation
Division of Air Resource Management (DARM)
850/921-0771
sylvia.livingston@dep.state.fl.us

<<0570039-040-AC.pdf>>

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9/19/2008

Livingston, Sylvia

From: Andrew Nguyen [atnguyen@tecoenergy.com]
Sent: Friday, September 19, 2008 2:02 PM
To: Livingston, Sylvia
Subject: RE: Word Document Request

Thank you so much.

Have a great weekend.

Thuy

Andrew Thuy Nguyen
Senior Engineer, Air Programs
Environmental, Health & Safety
Tampa Electric Company
P.O. Box 111
Tampa, FL 33601
Phone: 813-228-4654
Fax: 813-228-1308
Cell: 813-309-1341
ATNguyen@TECOenergy.com

>>> "Livingston, Sylvia" <Sylvia.Livingston@dep.state.fl.us> 09/19/2008 2:00:15 PM >>>
Andrew,

I've attached the requested documents to this email. Let me know if I can be of any further assistance.

Sylvia Livingston
Bureau of Air Regulation
Division of Air Resource Management (DARM)
850/921-0771
sylvia.livingston@dep.state.fl.us

From: Andrew Nguyen [mailto:atnguyen@tecoenergy.com]
Sent: Friday, September 19, 2008 1:46 PM
To: Livingston, Sylvia
Subject: Re: Word Document Request

Hi Sylvia,

The project No. is 0570039-040-AC
Big Bend Station - Simple Cycle Combustion Turbines and on Emergency Diesel Engine/Generator Set.

The letter was dated 9/19/08 addressed to David Lukcic of Tampa Electric.

Could you also send Hillsborough County EPC comment letter also? It was part of the RAI.

Thank you!!!

Andrew Thuy Nguyen
Senior Engineer, Air Programs
Environmental, Health & Safety

9/19/2008

Tampa Electric Company
P.O. Box 111
Tampa, FL 33601
Phone: 813-228-4654
Fax: 813-228-1308
Cell: 813-309-1341
ATNguyen@TECOenergy.com

>>> "Livingston, Sylvia" <Sylvia.Livingston@dep.state.fl.us> 09/19/2008 1:39:36 PM >>>

Andrew,

Could you tell me again which RAI you needed the word document for?

Sylvia Livingston
Bureau of Air Regulation
Division of Air Resource Management (DARM)
850/921-0771
sylvia.livingston@dep.state.fl.us

The Department of Environmental Protection values your feedback as a customer. DEP Secretary Michael W. Sole is committed to continuously assessing and improving the level and quality of services provided to you. Please take a few minutes to comment on the quality of service you received. Simply click on [this link to the DEP Customer Survey](#). Thank you in advance for completing the survey.