PERMITTEE

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

PERMITTING AUTHORITY

Florida Department of Environmental Protection (Department)
Division of Air Resource Management
Office of Permitting and Compliance
2600 Blair Stone Road, MS #5505
Tallahassee, Florida 32399-2400

PROJECT

Title V Air Operation Permit Revision No. 1050233-028-AV
Polk Power Station (PPS)

The purpose of this permitting project is to revise the existing Title V air operation permit to reflect changes made in previously issued air construction permits. The construction permit modifications are contained in Permit No. 1050233-029-AC (PSD-FL-194J) for Unit 1 (the IGCC Plant) at the PPS, while the changes pertaining to Units 2 to 5 at the PPS were addressed in Permit No. 1050233-032-AC (PSD-FL-263B and PSD-FL-363C). Specifically, the modifications are related to: (1) the fuel sulfur monitoring requirement of the auxiliary boiler of Unit 1; (2) the limits by weight pertaining to the blend of petroleum coke and coal used in the entrained flow solid fuel gasification system of Unit 1; (3) the nitrogen oxides (NOx) emissions reporting when firing natural gas and fuel oil in the 160 megawatt simple cycle combustion turbines (Units 2 and 3); (4) the fuel monitoring schedule for these same combustion turbines; and (5) the dry low-NOx tuning requirement for the gas-fired simple cycle combustion turbines (Units 4 and 5).

In addition, conditions regarding the startup, augmentation, and backup fuels used in Unit 1 at the PPS where modified. Specifically, pipeline natural gas has replaced the currently used fuel oil and propane. Also the heat input rate for the combustion turbine of Unit 1 was changed from a maximum to a design basis.

NOTICE AND PUBLICATION

On September 27, 2012, the Permitting Authority gave notice of its intent to issue draft air construction permit modifications and a draft/proposed Title V air operation permit revision. TEC published the Public Notice of Intent to Issue Air Permits for the project on October 12, 2012 in The Ledger. The complete project file including the Application, Draft Air Construction Permits, the Draft/Proposed Title V Air Operation Permit, the Technical Evaluation and Preliminary Determination and the Statement of Basis regarding the permit package are available at the following web link by entering the permit numbers given above:

http://www.dep.state.fl.us/air/emission/apds/default.asp.

COMMENTS

No comments were received from the public or the EPA on the draft air construction permits during the 30-day comment period that ended on November 9, 2012. TEC did not provide comments on Air Construction Permit No. 1050233-032-AC (PSD-FL-263B and PSD-FL-363C). On October 22, 2012, TEC provided comments to the Department addressing Air Construction Permit No. 1050233-029-AC (PSD-FL-194J) and the Title V Air Operation Permit No. 1050233-028-AV. The comments regarding Air Construction Permit No. 1050233-029-AC (PSD-FL-194J) are addressed below. The comments regarding Title V Air Operation Permit No. 1050233-028-AV were related to the underlying construction permit comments and requested changes.

1. **Emission Unit 001, Footnote 2 on Page 9, Specific Condition 10**

   Applicant's Request: The footnote should include the tons per year (TPY) emission factor as well. Both the TPY and pound per million British thermal unit (lb/MMBtu) emission factors include the acid plant in their calculations. In addition, to simplify compliance and confusion, TEC requests for compliance purposes EU – 001 will comply with the lb/hr limit (which in most cases for each pollutant is less than the lb/MMBtu and TPY emission limit). The proposed language with deletions in strike through text and additions with double underlined text is given below:

   "Syngas emission limits in pounds per million British thermal units (lb/MMBtu) values are based on heat input (HHV) to the solid fuel gasifier. ~~and~~ The emission rates for lb/MMBtu and tons per year (TPY) includes emissions from the sulfuric acid plant. Pollutant concentrations in ppmvd are corrected to 15% oxygen. Compliance for EU – 001 will be demonstrated with the lb/hr limit".

   Department Response: The Department agrees with the request to include the added the language to the footnote to include the emission factors for lb/MMBtu and TPY. However, the original BACT specified both limits. Therefore, no further changes were made. The corresponding clarification was made to Title V permit condition A.4.

2. **Emission Unit 001, Footnote 4 on Page 9, Specific Condition 10**

   Applicant's Request: TEC requests that the following language added to the footnote for clarification purposes. The proposed language with deletions in strike through text and additions with double underlined text is given below:

   "Annual emissions limits in tons per year (TPY) are based on syngas firing with a 10% annual capacity factor firing fuel oil. The NO_X limits are for fuel oil/natural gas firing. The SO_2 TPY limit also includes the sulfuric acid plant."

   Department Response: The Department agrees with the request to include the added the language to clarify that the SO_2 TPY limit includes emissions from the sulfuric acid plant. The corresponding clarification was made to Title V permit condition A.4.

3. **Emission Unit 001, Page 10, Specific Condition 16**

   Applicant's Request: TEC requests the condition be rephrased with regard to testing requirements. Once a fuel is blended and used at Polk Power Station, it is difficult to stay within the narrow range of 10% of 4.7% sulfur in the fuel blend. For this reason, if this section was rephrased to allow for the plant to operate as they normally do but stay within the limits of the fuel composition this would be more representative of actual operation. If the plant were to test at less than 90% of 4.7% then the plant would be restricted to within 110% of that testing period until another test was completed. A similar condition can also be seen on page 17 and 18, condition 12, this should also be changed accordingly. The proposed language with deletions in strike through text and additions with double underlined text is given below:

   "Emissions testing shall be conducted while gasifying and firing a blend of coal/petroleum coke ~~within 10% of 4.7% sulfur by weight and~~ within fuel consumption constraints specified in this permit. Initial and annual tests shall be conducted at 90% or greater of the permitted heat input rate provided in emissions unit description and corrected as described therein and the permitted sulfur percentage of the blended fuel, not to exceed 4.7% sulfur. If it is impracticable to test within the described range, the unit may be tested at less than the described range; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity."

   "Emissions testing shall be conducted while gasifying and firing a petroleum coke/coal blend containing ~~within 10% of the representative blended fuel sulfur content of 4.7% by weight and~~ the permitted fuel

consumption restraints. Annual tests shall be conducted at 90% or greater of the permitted sulfur percentage of the fuel (4.7%). If it is impracticable to test within the described range, the unit may be tested at less than the described range; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain authority to operate at the permitted capacity."

Department Response: The Department does not believe that the requested change is necessary. The permit specifies that testing be conducted within 10% of the maximum fuel sulfur content and within 10% of the permitted capacity. In accordance with Rule 62-297.310(2), F.A.C., if unable to test within one of these levels, the unit is limited to 110% of the tested level until a new test demonstrating compliance is conducted. No change to the Title V permit was made.

4. **Emission Unit 004, Page 16, Specific Condition 6**

Applicant's Request: The SO_2 emission standard states that TEC PPS will show compliance by using a CEMS. This should be changed to stack test (ST), as it has always been stated in the permit. Polk Power Station EU – 004 does not require an SO_2 CEMS because the sulfuric acid plant produces less than 300 tons per day (TPD) of sulfuric acid. The sulfuric acid plant is currently permitted to produce a limit of 299 TPD of sulfuric acid.

Department Response: The Department agrees with the request. This was an error in the draft air construction permit. Compliance with the SO_2 limit is by stack testing and not by CEMS. The Title V permit was correct so no change was necessary.

5. **Emission Unit 005, Page 19, Specific Condition 8**

Applicant's Request: TEC requests the deletion of the term "exhausts". Although our current dust suppression system has exhausts, not all dust suppression systems have exhausts.

Department Response: The Department agrees with the request. Removing the word "exhaust" will not change the requirements of the condition and will provide more flexibility with regard to the future selection of dust suppression systems for this emission unit. The corresponding clarification was made to Title V permit conditions D.7 and D8.

6. **Emission Unit 006, Page 20, Specific Condition 1**

Applicant's Request: TEC requests the addition of "as needed" at the end of the first sentence regarding the use the flare for the Solid Fuel Gasification System. TEC's previous PSD permit had this language.

Department Response: The Department agrees with the request to correct the air construction permit as it reflects the original intent. The Title V permit was correct so no change was necessary.

7. **Emission Unit 006, Page 20, Brief Unit Description**

Applicant's Request: TEC indicated the description is wrong. There is only one startup burner not multiple startup burners in the Solid Fuel Gasification System.

Department Response: The Department agrees with the request to correct the description in the air construction permit for one startup burner in the Solid Fuel Gasification System. The Title V permit was correct as drafted.

CONCLUSION

The final action of the Department is to issue the Title V Air Operation Permit No. 1050233-028-AV with the changes indicated above to reflect the changes made to Air Construction Permit No. 1050233-029-AC (PSD-FL-194J).