Tampa Electric Company (TECO), Big Bend Station
Title V Operation Permit Revision
Project No. 0570039-045-AV

APPLICANT

The applicant for this project is Tampa Electric Company. The applicant's responsible official and mailing address are: Mr. Ronald D. Bishop, Director, Tampa Electric Company, Big Bend Station, P.O. Box 111, Tampa, Florida 33601-0111.

FACILITY DESCRIPTION

The applicant operates the existing Big Bend Station, which is located in Hillsborough County at Big Bend Road, North Ruskin, Florida.

This existing facility consists of four fossil fuel fired steam generators, Boiler Unit Nos. 1 through 4; four steam turbines; one simple-cycle combustion turbine (CT), CT No. 1; solid fuels, fly ash, limestone, gypsum, slag, and bottom ash storage and handling facilities; and, fuel oil storage tanks.

PROJECT DESCRIPTION

The purpose of this permitting project is to revise the existing Title V air operation permit (0570039-039-AV) for the above referenced facility. This revision includes the addition of construction permits 0570039-040-AC and 0570039-041-AC.

This permit will incorporate the new addition of railcar coal unloading and conveying system and the addition of two simple cycle combustion turbine (SCCT) peaking units, with one associated electrical generator, and one emergency diesel engine/generator set into the existing facility. It also removes the Combustion Turbine No. 1 from the existing Title V air operation permit and adds magnesium oxide as a method of operation to the boilers for emission units 1, 2, 3 and 4.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Application for a Title V Air Operation Permit Revision received on May 18, 2010.
Application to incorporate Permit No. 0570039-041-AC received on June 7, 2010.
Request to include supplemental injection of magnesium oxide as a method of operation received June 23, 2010.
Requests for Additional Information sent via e-mails on June 10, 2010.
Additional Information Response received September 9, 2010.
Clarification e-mails sent and received on September 30, October 1, 4 and 14, 2010.
Request to add delivery of petcoke by rail as an alternate method of operation received October 25, 2010.
Clarification e-mails sent and received on October 25, 29 and November 1, 2010.
Application deemed complete on November 1, 2010.
Draft/Proposed Permit posted onto web site on January 28, 2011.
Public Notice published on Month day, 2011.
Notification to U.S. EPA Region 4 of Publication of Public Notice on Month day, year.

PRIMARY REGULATORY REQUIREMENTS

Title III: This facility is a major source of hazardous air pollutants (HAP), based on the Title V air operation permit renewal application received on June 6, 2008.

NESHAP: This facility operates units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 Code of Federal Regulations (CFR) 63.

Title IV: This facility operates units subject to the Acid Rain provisions of the Clean Air Act.

Title V: This facility is a Title V major source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

PSD: This facility is a Prevention of Significant Deterioration (PSD)-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: This facility operates units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.

CAIR: This facility operates units subject to the Clean Air Interstate Rule (CAIR) set forth in Rule 62-296.470, F.A.C.

Siting: Unit 4 was originally certified pursuant to the power plant siting provisions of Chapter 62-17, F.A.C. (Power Plant Siting Certification PA 79-12).

CAM: Compliance Assurance Monitoring (CAM) applies to emissions units at this facility. CAM applies to particulate matter (PM) emissions from Unit 1, 2, 3 and 4. Unit 1, 2, 3 and 4 each use an electrostatic precipitator (ESP) to control PM emissions. The other emissions units at the facility are not subject to CAM for one or more of the following reasons: they do not trigger the pre-air pollution control device major source emission thresholds; they demonstrate continuous compliance with a continuous emission monitoring system (CEMS); or, they are not equipped with air pollution control devices.

PROJECT REVIEW

The purpose of this permitting project is to revise the existing Title V air operation permit (0570039-039-AV) for the above referenced facility. This revision: includes the addition of construction permits 0570039-040-AC and 0570039-041-AC; removes Combustion Turbine No. 1 from the existing Title V air operation permit; adds magnesium oxide as a method of operation to the boilers for EU 1, 2, 3 and 4; adds the ability to receive petcoke by rail as an alternate method of operation; and makes clarifications to the portions of the permit that regulate the emissions units that comprise the fuel yard. Changes to the permit made as part of this revision are shown in ~~strike through format~~ for deletions and in double underline format for additions. For ease of identification, all changes have been highlighted in yellow within the permit document.

Based on the applicant's requests, the following changes have been made to the permit:

1) Magnesium Oxide has been added as a method of operation for the boilers (EU ID Nos. -001, -002, -003 and -004) in Specific Conditions **A.4.**(f) and **B.4.**(f). The existing paragraphs (f) have been renumbered to (g).

   f. Other Operation – Magnesium Oxide. Supplemental injection of liquid magnesium oxide as needed to reduce upper furnace pluggage.

   g.~~f.~~

2) Combustion Turbine No. 1 (CT#1, EU ID No. -007) was last fired in July 2007 and was dismantled on 10/26/2010. Therefore, CT #1is being removed from the permit through the deletion of Section III., Subsection C., as required by permit No. 0570039-040-AC, Specific Condition III.1. Section III., Subsection C. is now shown as "Reserved".

3) Addition of two new simple cycle combustion turbine (SCCT) peaking units (EU ID Nos. -041 & -042) from Permit No. 0570039-040-AC. The requirements and limitations contained in the construction permit have been incorporated into the permit in the new Section III., Subsection O. In addition, a new Appendix CEMS for EU 41 and 42 and Appendix 40 CFR 60, Subpart KKKK, Standards of Performance for Stationary Combustion Turbines have been added to the Appendices section of the permit. Also, at the applicant's request, the allowance to exclude excess emissions due to tuning is added in Specific Condition **O.15.d.** pursuant to the authority of Rules 62-210.700(5) and 62-213.440, F.A.C., as it is preferable to allow short periods of excess emissions during a tuning activity rather than experiencing long periods of higher emissions from a poorly tuned unit. This provision is only effective for the duration of this Title V permit and will need to be re-requested upon renewal. To become a permanent provision, it should be added to the underlying construction permit for these units at some point in the future if that construction permit is opened for revision.

4) The current permit contains requirements for the solid fuel yard in Section III., Subsection H., with a reference to **Appendix F, Solid Fuel Yard Fugitives - Emissions Points** for a listing of all of the different emissions points that comprise Emissions Unit ID Nos. -010, -029 and -030. As the facility has grown over the years, this list of emissions points has grown. However, being permitted at different times, some of the requirements are different for the different points. To help clarify which points are subject to which requirements, some of the emissions points have been removed from EU ID No. -010, have been listed in new Section III., Subsections Q. and R., and have been given new EU ID Nos. of -046 (trans-loading operations) and -047 (railcar unloading and conveying system) and Appendix F has been deleted from the permit. Also, EU ID Nos. -029 and -030 have been moved from Section III, Subsection H to new Section III, Subsection P. The descriptions of the emissions points that were contained within Appendix F have been moved to the emissions unit descriptions for EU ID Nos. -010, -046 and -047 and the existing Section III., Subsection H. has been completely replaced by new Subsections H., P., Q and R. (Please refer to the draft/proposed permit for the detailed changes.)

5) The requirements contained in permit No. 0570039-041-AC, which authorized the construction of a railcar unloading and conveying system, are being added to the permit to authorize on-going commercial operation. The construction permit added the emissions points associated with the railcar unloading operations to existing emissions unit ID No. -010 for material handling operations. In order to help clarify which of the material handling operations are subject to which limitations, the railcar operations and emissions point are being removed from EU ID. -010 and added to the permit as EU ID No. -047 in a new Section III., Subsection R. (Please refer to the draft/proposed permit for the detailed changes.)

6) Construction permit No. 0570039-043-AC SCCT 4, regarding fuel oil sulfur content, is now obsolete and will not be added to the permit revision.

<u>For clarification purposes, the following administrative changes have been made to the permit:</u>

7) The Table of Contents has been updated to reflect the new sections and new emissions units.

8) The Summary of Emissions Units in Section I, Subsection B. has been updated to reflect additions and deletions.

9) The list of Applicable Requirements in Section I, Subsection C. has been updated.

10) The subparagraphs of Specific Condition **A.58.** has been renumbered for consistency within the permit.

11) The rule citation in Specific Condition **D.3.** was revised to reflect the correct applicable requirement.

CONCLUSION

This project revises Title V air operation permit No. 0570039-039-AV, which was effective January 1, 2010. This Title V air operation permit revision is issued under the provisions of Chapter 403, Florida Statues (F.S.), and Chapters 62-4, 62-210, 62-213 and 62-214, F.A.C.