City of Gainesville, Gainesville Regional Utilities (GRU)
Deerhaven Generating Station

Permit No. 0010006-022-AV, Title V Air Operation Permit Renewal

APPLICANT

The applicant for this project is the City of Gainesville, Gainesville Regional Utilities (GRU). The applicant's responsible official and mailing address are: Mr. John W. Stanton, Assistant General Manager - Energy Supply, City of Gainesville, Gainesville Regional Utilities (GRU), Deerhaven Generating Station, P.O. Box 147117, Station A132, Gainesville, Florida 32614-7117.

FACILITY DESCRIPTION

The Deerhaven Generating Station is located in Alachua County at 10001 NW 13th Street, Gainesville, Florida.

This existing facility consists of: two steam boilers (Unit Nos. 1 and 2) and associated steam turbines; an NSPS simple cycle combustion turbine (CT No. 3); two unregulated simple cycle combustion turbines (CT Nos. 1 and 2); a recirculating cooling water system; storage and handling facilities for coal, brine salt, fly ash and bottom ash; fuel oil storage tanks; water treatment facilities; a railcar maintenance facility; and, ancillary support equipment.

The following are the regulated emission units (E.U.s) at the facility.

E.U. ID No.	Brief Description
Regulated Emissions Units	
003	Boiler No. 1 (75 MW)
005	Boiler No. 2 (251 MW)
006	Combustion Turbine No. 3 (74 MW)
007	Coal Handling and Storage Activities
	Engine(s)
011	Emergency Equipment - DH1
012	Emergency Equipment - Fire Water Pump
013	Emergency Equipment - DH2

This facility also includes miscellaneous insignificant emissions units and/or activities.

PROJECT DESCRIPTION

The purpose of this permitting project is to renew the Title V air operation permit for the above referenced facility.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Application for a Title V Air Operation Permit Renewal received on May 20, 2014 (complete).
Application for AC Permit Revisions received on May 20, 2014 (complete).
Draft/Proposed Title V Air Operation Permit Renewal posted onto web site on August 18, 2014.
Public Notice published on August 22, 2014.

PRIMARY REGULATORY REQUIREMENTS

Standard Industrial Classification (SIC) Code: This facility is classified under SIC Code No. 4911 - Electrical Services.

North American Industry Classification System (NAICS) Code: This facility is classified under NAICS Code No. 221112 - Fossil Fuel Electric Power Generation.

Title I - HAP: This facility is a major source of hazardous air pollutants (HAP), based on the Title V air operation permit renewal application.

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

Applicable Requirement	**E.U. ID No(s).**
40 CFR 63, Subpart A, General Provisions	005, 011, 012 & 013
40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE)	011, 012 & 013
40 CFR 63, Subpart UUUUU, National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units *{also known as "MATS"}*	005

MATS: The facility does operate units subject to the federal mercury and air toxics standards (MATS) for power plants as set forth in 40 Code of Federal Regulations (CFR) 63 [NESHAP 40 CFR 63, Subpart UUUUU]. This regulation applies to new and existing coal and oil-fired electric utility steam generating units (EGUs).

Boiler No. 1 is not subject to NESHAP 40 CFR 63, Subpart UUUUU. Because Boiler No. 1 combust primarily natural gas the unit is classified as a "Natural Gas-Fired Electric Utility Steam Generating Unit" according to MATS and is therefore exempt from MATS pursuant to 40 CFR 63.9983 [applicability] and 40 CFR 63.10042 [definition for "Natural Gas-Fired Electric Utility Steam Generating Unit"].

Boiler No. 2 (E.U. ID No. 005) is subject to NESHAP 40 CFR 63, Subpart UUUUU.

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. The following emission units are subject to the NSPS requirements.

Applicable Requirement	**E.U. ID No(s).**
40 CFR 60, Subpart A, Standards of Performance for New Stationary Sources (NSPS) General Provisions	005, 006 & 013
40 CFR 60, Subpart D, Standards of Performance for Fossil Fuel Fired Steam Generators for which Construction is Commenced After August 17, 1971	005
40 CFR 60, NSPS Subpart Y, Standards of Performance for Coal Preparation Plants	007
40 CFR 60, NSPS Subpart GG, Standards of Performance for Gas Turbines	006
40 CFR 60, NSPS Subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	013

This facility has an engine which is subject to the recently promulgated NSPS 40 CFR 60 Subpart IIII also known as (a.k.a.) NSPS "4-I's" or "CI-ICE."

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

Siting: This facility does operate units subject to the power plant siting provisions of Chapter 62-17, F.A.C. [Power Plant Certification: PA 74-04.]

CAM: Compliance Assurance Monitoring (CAM) applies to one of the emission units at the facility. Boiler No. 1 (E.U. ID No. 003) is not subject to CAM as it does not have any control equipment. Combustion Turbine No. 3 (E.U. ID No. 006) is not subject to CAM as the control equipment that it is equipped with does not meet the control definition in 40 CFR 64.

Boiler No. 2 (E.U. ID No. 005) is subject to CAM for particulate matter (PM) since it has an electrostatic precipitator (ESP) to control PM emissions. After April 16, 2015, CAM will no longer be applicable to Boiler No. 2 (E.U. ID No. 005). The monitoring requirements of NESHAP 40 CFR 63, Subpart UUUUU will satisfy the requirements of CAM.

GHG: This facility is identified as a major source of green house gas (GHG) pollutants.

PROJECT REVIEW

Changes were made in the format of this renewed Title V air operation permit.

{Note: Major changes made with regard to content in the draft/proposed version of the renewed permit are highlighted in yellow double underline.}

Permit

- Title V Annual Emissions Fee Changes. Section 403.0872, Florida Statutes (F.S.) was amended by House Bill (HB) 999, effective July 1, 2013. A few very important changes were made in the amendment which apply to the Title V annual emissions fee, namely: 1) the Title V annual emissions fee is now required to be calculated based upon actual emissions rather than allowable emissions, as in the past twenty years; 2) the due date for submitting the Title V annual emissions fee was changed from March 1st to April 1st; and, 3) the fee form was repealed and the fee requirement has been merged into the EAOR software product.

  The previous specific conditions from Permit No. 0010006-019-AV for the AOR requirement (see Facility-wide Condition FW6.) and the Title V annual emissions fee requirement (see Facility-wide Condition FW7.) have been combined into one Facility-wide Condition FW6. in Section II. of this renewed permit.

- Subsection III.A. Boiler No. 1 (Emissions Unit Identification Number (E.U. ID No.) 003). Liquid fuel firing restrictions were added in the renewed permit to allow the unit from being subject to NESHAP 40 CFR 63, Subpart DDDDD or Subpart UUUUU.

- Subsection III.B. Boiler No. 2 (E.U. ID No. 005). The following changes were made in this subsection of the renewed permit:
  - Boiler No. 2 no longer has the ability to fire liquid fuel; deleted all references in Subsection III.B. to liquid fuel firing.
  - In Permit No. 0010006-019-AV, the following air construction (AC) Permit Nos. had been incorporated:
    - 0010006-005-AC, Installation of Air Quality Control Systems and 0010006-009-AC, Superheater Replacement (E.U. ID No. 005);
    - Permit No. 0010006-014-AC, Low-NOx Burners & Modified Overfire Air System (E.U. ID No. 005); and,
    - Permit Nos. 0010006-012-AC and -016-AC, NOx & SO_2 Emission Caps (E.U. ID No. 005).

These 5 - air construction (AC) permit projects' applicable requirements were simply added at the end of the emissions unit Subsection III.B. In this renewed permit these applicable requirements are completely integrated into specific locations within the body of the emissions unit Subsection III.B.

Specific Conditions B.28.-B.30. & B.33.-B.39. in the current Title V air operation permit, Permit No. 0010006-019-AV, contained monitoring, testing and reporting requirements for sulfuric acid mist (SAM) emissions from Boiler No. 2. Permit No. 0010006-021-AC removes the monitoring, testing and reporting requirements for SAM emissions from Boiler No. 2 {for details see the Technical Evaluation & Preliminary Determination for Permit No. 0010006-021-AC}.

- The renewed permit incorporates the federal MATS regulation for power plants as set forth in NESHAP 40 CFR 63, Subpart UUUUU. A new appendix for MATS is added to the renewed permit.

  Emission Unit 005 (Boiler No. 2) is subject to 40 CFR 63, Subpart UUUUU- National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units since it is a fossil fuel-fired combustion unit of more than 25 megawatts. It is classified as "existing" unit since it was constructed prior to May 3, 2011 and has not been reconstructed. In addition, the Boiler No. 2 is considered a coal-fired unit not using low rank virgin coal. The Boiler No. 2 must come into compliance with the requirements of Subpart UUUUU no later than April 16, 2015. Subpart UUUUU applies the following emission limits to the Boiler No. 2 (EU 005):

  1. *Filterable Particulate Matter (PM)*. Emissions of PM shall not exceed either 0.030 pound/million British thermal unit (lb/MMBtu) or 0.30 pound per megawatt-hour (lb/MWh). In lieu of the filterable PM emission limit, the permittee may select to meet a total non-Hg HAP metals emission limit of either 5.0×10^{-5} lb/MMBtu or 0.50 pounds per gigawatt-hour (lb/GWh). Finally, in lieu of either filterable PM or total non-Hg HAP metals emission limits, the permittee may meet the following individual HAP metal emission limits:
     a. Antimony (Sb) – 0.80 pounds per terra Btu (lb/TBtu) or 8.0×10^{-3} lb/GWh.
     b. Arsenic (As) – 1.1 lb/TBtu or 0.020 lb/GWh.
     c. Beryllium (Be) – 0.20 lb/TBtu or 2.0×10^{-3} lb/GWh.
     d. Cadmium (Cd) – 0.30 lb/TBtu or 3.0×10^{-3} lb/GWh.
     e. Chromium (Cr) – 2.8 lb/TBtu or 0.030 lb/GWh.
     f. Cobalt (Co) – 0.80 lb/TBtu or 8.0×10^{-3} lb/GWh.
     g. Lead (Pb) – 1.2 lb/TBtu or 0.020 lb/GWh.
     h. Manganese (Mn) – 4.0 lb/TBtu or 0.050 lb/GWh.
     i. Nickel (Ni) – 3.5 lb/TBtu or 0.040 lb/GWh.
     j. Selenium (Se) – 5.0 lb/TBtu or 0.060 lb/GWh.
  2. *Hydrogen Chloride (HCl)*. Emissions of HCl shall not exceed either 2.0×10^{-3} lb/MMBtu or 0.020 lb/MWh. In lieu of the HCl emission limit, the permittee may select to meet a SO_2 emission limit of either 0.20 lb/MMBtu or 1.5 lb/GWh.
  3. *Mercury (Hg)*. Emissions of Hg shall not exceed either 1.2 lb/TBtu or 0.013 lb/GWh.

  Compliance with the above emissions limits shall be demonstrated pursuant to one of the available options specified in 40 CFR 63, Subpart UUUUUU which is included as an appendix in the renewed Title V permit. The permittee shall also comply with the recordkeeping and reporting requirements specified in the appendix.

- <u>Subsection III.D. Coal Handling and Storage Activities (E.U. ID No. 007)</u>. The current Title V air operation permit, Permit No. 0010006-019-AV, includes a tabular description for the coal handling and storage activities. Permit No. 0010006-021-AC establishes the requirement for these "Transfer Pt. IDs" (transfer points) to be fully enclosed as the applicant indicated {for details see the Technical Evaluation &

Preliminary Determination for Permit No. 0010006-021-AC}.

- Subsections III.E. & F. Emergency Equipment (Engines) (E.U. ID Nos. 011, 012 &013). Engines in the previous permit, Permit No. 0010006-010-AV, were listed in Appendix U, List of Unregulated Emission Units and/or Activities [E.U. ID No. 009] and Appendix I, List of Insignificant Emissions Units and/or Activities [items 33. & 34.]. Some of these engines are now 'regulated' emissions units under the recently promulgated federal regulations; specifically, 40 CFR 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE) and NSPS 40 CFR 60 Subpart IIII.

  These engines are now included within the body of this renewed permit as 'regulated' emissions units in Subsections III.E. & F and are assigned their own new individual E.U. ID Nos. 011, 012 &013

Appendices

- Appendix BOP, Best Operational Practices for Startup and Shutdown. The procedures for startup and shutdown for Boiler Unit Nos. 1 & 2 are included in Appendix BOP.
- Appendix I, List of Insignificant Emissions Units and/or Activities. Included the applicant's requested miscellaneous changes to the list of insignificant emissions units and/or activities.
- Standardized Appendices - Appendices RR & TV. The Department uses standardized appendices in Title V air operation permits. Updated versions of Appendix RR, Facility-wide Reporting Requirements and Appendix TV, Title V General Conditions were included in this renewed permit.

CONCLUSION

This project renews Title V air operation permit No. 0010006-010-AV, which was effective January 1, 2010.