Technical Evaluation
and
Preliminary Determination

I. GENERAL INFORMATION

A. APPLICANT

City of Gainesville, GRU
Post Office Box 147117 (A132)
Gainesville, Florida 32614

Facility I.D.: 0010129
County: Alachua

B. PROJECT

The Department received the air permit application for revision of permit No. 0010129-001-AC from the applicant on October 24, 2012. The application is for the addition of Specific Condition Number 2, Section 3: Combustion Turbine Generators (CTGs) Heat Recovery Steam Generators (HRSGs) Unit No.1 and Unit No. 2. to allow flexibility to replace the stationary combustion turbines with equivalent "like kind" overhauled or new combustion turbines. The facility is located at 1390 SW 14th Avenue, Gainesville ues, Gainesville, Alachua County, Florida.

The facility consists of two combustion turbine generators (CTGs), two fired heat recovery steam generators (HRSGs), one auxiliary steam boiler, three small cooling towers, and three emergency diesel-engine driven generators. The facility has constructed and currently operates one CTG, one fired HRSG, one auxiliary steam boiler, two small cooling towers, and two emergency diesel-engine driven generators.

The facility provides steam and power to the Shands Hospital complex, as well as power to the electrical transmission grid.

C. Emissions Unit Description:

Two CTGs & HRSGs: The combustion turbine generators are permitted to fire natural gas exclusively. In simple cycle mode, the CTGs' exhaust discharge directly to the atmosphere. In combined cycle mode, the hot exhaust gas from each CTG is routed to a HRSG to generate steam. The HRSGs include natural gas fired duct burners (low NOx burners) for supplemental steam generation by the HRSGs. Following the recovery of waste heat by the HRSGs, the CTGs' exhaust gases discharge to the atmosphere.

The combustion turbine generators each have a nominal heat input of approximately 53 MMBtu/hour at 32 °F ambient temperature and a power generation capacity of approximately 4,600 kilowatts. Each HRSG can produce up to 45,000 pounds per hour of steam and includes a natural gas fired duct burner with a nominal heat input of 36 MMBtu/hour.

II. RULE APPLICABILITY AND TECHNICAL EVALUATION

Regulatory Classification

The facility is classified as Synthetic Non-Title V source by establishing emissions cap on NOx emissions to 90 tons per 12-month rolling to escape prevention of significant deterioration (PSD) review (Permit No. 0010129-002-AF]

The CTGs & HRSG are subject to 40 CFR 60, NSPS, Subpart KKKK - Standards of Performance for Stationary Combustion Turbines. The Combustion Turbine has a heat input at peak load of 53 MMBtu/hour > 10 MMBtu/hour, and is constructed after February 18, 2005. Only heat input rate at peak load of the combustion turbine is used for applicability determination (40 CFR 60.4305 (a)).

The Combustion Turbines are exempted from the requirements of 40 CFR 60, Subpart GG The Heat Recovery Steam Generators are exempted from the requirements of 40 CFR 60, Subpart Da, Db, and Dc (40 CFR 60.4305(b))

The regulated pollutants under this subpart include Nitrogen Oxide (NO_x) and Sulfur Dioxide (SO_2).(40 CFR 60.4315 and Permit No. 0010129-002-AF)

The HRSGs is subject to Rule 62-296.406,F.A.C. for Fossil Fuel Steam Generators with less than 250 MMBtu/hr. heat input.This rule mandates:

(a) A Visible Emissions,(VE) of 20 % opacity except for either one six-minute period per hour during which opacity shall not exceed 27 %, or one two-minute period per hour during which opacity shall not exceed 40 %.
(b) Particulate Matter (PM) Best Available Control Technology (BACT) and
(c) Sulfur Dioxide (SO_2) (BACT)

(Rule 62-296.406 (1)(2)and (3) BACTJuly 25th, 2007)

For Rule 62-296.406, Rule 62-297.310(7)(a)(1) Frequency of compliance test requires that an initial compliance test to demonstarate compliance with the applicable emissions limiting standard prior to obtaining an operation permit. Along with other units (as stated in section 1B above) the facility is permitted to construct two combustion turbine generators (CTGs), and two fired heat recovery steam generators (HRSGs). The facility has constructed and currently operates one CTG, and one fired HRSG, upon completion of the other CTG and HRSG,the facility shall conduct an initial VE test as required.(Rule 62-297.310 (7)(a)(1) and Permit No. 0010129-001-AC)

Subsequent test: Visible Emissions Performance Testing- HRSG: By permit, the owner or operator shall conduct a visible emissions test for the Heat Recovery Steam Generator to demonstrate compliance with the emission limit in Specific Condition No. 6 once every 5 years, prior to obtaining a renewed operating permit. The test method for visible emissions shall be DEP Method 9.

[Permit No. 0010129-003-AF]

CONCLUSION

Based upon the information provided by the applicant, the Department has reasonable assurance that the operation of facility as described in the application and addendums and subject to the conditions proposed herein, will not cause or contribute to a violation of any technical provision of 40 CFR 60, NSPS, Subpart KKKK, and Rule 62-296.406, F.A.C...

PERMIT PROCESSOR: YASMIN K. ENRIQUEZ
DATE: DECEMBER 14, 2012