TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Seminole Electric Cooperative, Inc. (SECI)
Post Office Box 272000
Tampa, Florida 33688-2000

Seminole Generating Station Units 1 and 2
Facility ID No. 1050004

PROJECT

Project No. 1070025-020-AC
Application for Minor Source Air Construction Permit
Removal of Requirement to Utilize Alkali Injection

COUNTY

Putnam County, Florida

PERMITTING AUTHORITY

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

December 14, 2012

1. GENERAL PROJECT INFORMATION

1.1 Facility Description and Location

The Seminole Electric Cooperative, Inc. (SECI) Seminole Generating Station (SGS) is an existing power plant, which is categorized under Standard Industrial Classification Code No. 4911. The existing Seminole Generating Station is located in Putnam County at 890 North U.S. Highway 17, Palatka, Florida. The UTM coordinates of the existing facility are Zone 17, 438.8 km East and 3289.2 km North.

This facility consists of the following equipment: two 7,172 million British thermal units (MMBtu) per hour coal-fired, dry-bottom wall-fired utility boilers with a nominal gross generator rating of 735.9 megawatts, coal yard storage facilities, heating units and emergency generators. Each boiler (Units 1 and 2) is equipped with an electrostatic precipitator (ESP) to control particulate matter (PM); an upgraded wet limestone flue gas desulfurization (FGD) system to control sulfur dioxide (SO_2); low-NO_X burners, low excess air firing and a selective catalytic reduction (SCR) system to control nitrogen oxides (NO_X).

1.2 Project Description

SECI applied for concurrent revisions of permits 1070025-004-AC and 1070025-015-AV affecting the emissions units listed below. Link to Request Link to Application

EU No.	*Brief Description*
001	Steam Electric Generator No.1
002	Steam Electric Generator No. 2

According to SECI, the Units 1 and 2 alkali injection systems (used to abate potential sulfuric acid mist (SAM) caused by operation of the SCR NO_X control systems) are not needed to comply with any emission limits. SECI plans to discontinue use of these control systems and they will remain in place as a contingency and available for use if needed due to future regulatory requirements. The rationale provided by SECI is as follows:

> *"The current SGS Title V permit makes reference to alkali injection systems installed on Units 1 and 2 to control emissions of sulfuric acid mist (SAM). The reason for the alkali injection systems was to insure that SAM emissions did not increase above the 7 tons per year (tpy) Prevention of Significant Deterioration (PSD) applicability threshold due to the installation of selective catalytic reduction (SCR) nitrogen oxides (NO_X) control technology on Units 1 and 2 and operation of a new proposed Unit 3 coal-fired unit.*

"The Unit 3 project was subsequently cancelled and further FDEP analysis of PSD applicability concluded that there was no potential for SAM emissions to exceed the 7 tpy PSD permitting threshold. In addition, stack testing demonstrated that the Units 1 and 2 SCR controls did not increase SAM emissions significantly without the alkali injection system in service. Accordingly, the Department subsequently issued Air Construction Permit No. 1070025-016-AC/PSD-FL-372B which removed SAM emission limits and testing requirements for Units 1 and 2 by deleting Condition No. 10 of Air Construction Permit No. 1070025-004. Title V was also administratively corrected by Title V Permit No. 1070025-017-AV to remove SAM compliance testing requirements."

1.3 Processing Schedule

November 7, 2012: Received application for a concurrent review of Title V and construction permits.

November 7, 2012: Application determined to be complete.

December 14, 2012: Distributed Intent to Issue Air Permit package.

2. DEPARTMENT REVIEW

The Department reviewed this matter when it issued Title V permit 1070025-015-AV and Air Construction permit 1070025-016-AC. The technical evaluation is accessible at the following link:

Link to Previous Technical Review

The present request was already justified in the previous permitting actions. It was not clarified at the time that the applicant wishes to keep the equipment in place in case without requiring its use. The present permitting actions will remove the requirement to install and use the equipment (as previously justified), while recognizing its existence without requiring its use.

The Department will make the changes requested by the applicant to Permit No. 1070025-004-AC by deleting Section 3, Subsection A, Condition 5 as follows:

~~5. Alkali Injection System: The permittee shall construct and operate a new alkali injection system on Units 1 and 2 to mitigate the potential impacts of SO_3 formation resulting from the operation of the SCR control systems. The design criteria shall ensure that sulfuric acid mist emissions do not increase above the sulfuric acid mist baseline. (Design).~~

For reference the mentioned permit authorized a major air pollution control project that resulted in massive emission reductions (tens of thousands of tons/year) of SO_2 and NO_X as shown in the figure below. By comparison, the alkali injection system was intended to insure that SAM did not increase by a minimal amount (<7 tons/year) as a result of catalytic oxidation of some SO_2 to SO_3 and then converted to SAM. It appears that the scrubber upgrades that were authorized by Permit No. 1070025-004-AC are sufficient to abate the possible SAM increase without the need to operate the alkali injection system.

3. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project does not result in a significant increase in emissions. Teresa Heron is the project engineer responsible for reviewing the application and drafting the air construction permit and the Title V revision documents. Additional details of this analysis may be obtained by contacting the project engineer at the Department's Office of Permitting and Compliance at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

Gross Electrical Generation, SO_2 and NO_X Emissions from Units 1 and 2 - 1997-2011 (tons/year)