UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

October 5, 2006

Ms. Trina L. Vielhauer
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Ms. Vielhauer:

Thank you for providing to the Region 4 office of the U.S. Environmental Protection Agency (EPA) a copy of the draft prevention of significant deterioration (PSD) permit package for the proposed Unit 3 project at the Seminole Generating Station (SGS) Unit 3 project in Putnam County, Florida. The draft permit package included a technical evaluation and preliminary determination (technical evaluation) prepared by the Florida Department of Environmental Protection (FDEP) dated August 21, 2006.

SGS is owned and operated by Seminole Electric Cooperative, Inc. The proposed project consists of adding a new electric utility steam generating unit (EUSGU) designated as Unit 3. Unit 3 will be a supercritical pulverized coal (PC) EUSGU with a nominal generating capacity of 750 megawatts. The proposed Unit 3 fuels for routine operation are bituminous coal or a mixture of bituminous coal and petroleum coke (petcoke). As a result of contemporaneous emissions reductions from existing SGS emissions units, the project nets out of PSD review for sulfur dioxide, nitrogen oxides, and sulfuric acid mist. Regulated NSR pollutants subject to PSD review are carbon monoxide (CO), volatile organic compounds (VOC), particulate matter (PM/PM_{10}), and fluorides.

The words "we," "our," and "us" in this letter refer to EPA's Region 4 office. Our comments on the draft permit package are provided below.

1. Netting Analysis

   a. FDEP indicates on page 5 of the technical evaluation that the Unit 1 and Unit 2 baseline period for the nitrogen oxides netting analysis is calendar years 2001-2002. In accordance with FDEP's rules, the baseline period for EUSGUs must be "within the 5-year period immediately preceding the date a complete permit application is received by the Department." Since the Unit 3 PSD permit application was not deemed complete until July 3, 2006, not all of calendar year 2001 is available for baseline emissions calculations unless FDEP explicitly deems a different (earlier) period to be more representative of normal source operation. FDEP should explain why emissions during all of calendar year 2001 are available for baseline emissions calculations purposes.

b. Referencing FDEP's regulations, a decrease in emissions is creditable in a netting analysis only if "It has approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular change." We do not find in the technical evaluation (which is a key part of the public record for this permitting action) any assessment of this qualitative significance requirement with regard to the creditable emissions decreases proposed for avoidance of PSD review for sulfur dioxide, nitrogen oxides, and sulfuric acid mist.

2. Clarification of Pound-per-Hour Emissions Limits

a. Condition III.A.10 in the draft permit consists of a table with emissions limits labeled as either "BACT Emission Limits" or "Non-BACT Established Emission Limits." (The acronym BACT means best available control technology.) The limits are listed in terms of lb/MMBtu and in terms of lb/hr "equivalent." We are not sure what is meant by the word "equivalent." Specifically, we are not sure if the lb/hr "equivalent" values are enforceable permit limits. If not, they should be made enforceable unless the following statement in Condition III.A.4 represents an enforceable restriction: "The steam generator shall be designed for a maximum heat input of 7,500 MMBtu per hour of coal." Unless the permit contains an enforceable restriction on maximum heat input, the lb/MMBtu limits by themselves do not provide an enforceable limit on total mass emissions to the atmosphere.

b. The "equivalent" lb/hr rates for the most part are based on the limits in lb/MMBtu times 7,500 MMBtu/hr. There appears to be an error in the VOC equivalent lb/hr rate of 16.7 lb/hr. The stated VOC limit is 0.0034 lb/MMBtu which yields a value of 25.5 lb/hr when multiplied by 7,500 MMBtu/hr.

3. Particulate Matter Emissions Limits

a. The PM/PM_{10} emissions limit specified in Condition III.A.15 of the draft permit is for filterables only. Condensables are to be measured and reported but are not restricted by an emissions limit. Most recent permits for EUSGU PC boilers have included an emissions limit for condensables in addition to (or in combination with) and emissions limit for filterables. We recommend that the final permit include place holder language that will allow setting an emissions limit for condensables after testing has demonstrated that condensables can be measured accurately.

b. In Condition III.A.15, FDEP specifies that the PM/PM_{10} emissions limit of 0.013 lb/MMBtu applies "while firing 100% coal." We recommend that this condition be rephrased to indicate the emissions limit that applies when firing a mixture of coal and petcoke as well as when firing coal only.

4. PM Continuous Emissions Monitoring System (CEMS)

a. The draft permit does not require use of a PM CEMS to assess compliance with the filterable PM/PM_{10} emissions limit. Since a PM CEMS can be used with a wet plume, we recommend that a PM CEMS be required to demonstrate compliance with the filterables limit.

b. If a PM CEMS is not required, we recommend that FDEP require some other continuously monitored parameter to indicate acceptable performance of the dry electrostatic precipitator which is the primary PM control device. Please advise us if FDEP intends to wait until issuance of a title V permit before specifying such parameter monitoring requirements.

5. Startup and Shutdown

a. Startup and shutdown are part of normal source operation for Unit 3. Any pollutants emitted from Unit 3 during startup and shutdown that are subject to PSD review are therefore subject to best available control technology (BACT) requirements. If the numeric BACT emissions limits for regular operation can not be met during startup and shutdown, then numeric limits need to be established for startup and shutdown operations or work practice BACT requirements should be established. We understand that FDEP intends for best management practices (including the 60-hour-per-month restriction in Condition III.A.29.b) to be used for minimization of emissions during startup and shutdown. If it is FDEP's position that adherence to best management practices represents BACT for startup and shutdown, we request that this be stated in the final determination. Please note that numeric emissions limits for startup and shutdown have been addressed by the EPA Environmental Appeals Board (EAB) in two recent PSD permit appeals for coal-fired EUSGUs. (See the August 24, 2006, EAB order for the Prairie State Generating Station project in Illinois and the September 27, 2006, EAB order for the Indeck-Ellwood project in Illinois.)

b. The allowance of 60 hours per month (equivalent to 30 days per year) for startup, shutdown, and malfunction seems excessive for a 750-MW EUSGU. We would expect such a unit would not be in a condition of startup, shutdown, or malfunction this often throughout its lifetime.

c. Condition III.A.30 of the draft permit contains a parenthetical phrase indicating that emissions measured during startup, shutdown, and malfunction are to be included for demonstration of compliance with annual emissions limits. We recommend that the final permit contain a direct statement rather than just a parenthetical phrase making clear that startup, shutdown, and malfunction emissions must be included when demonstrating compliance with annual emissions limits.

6. Compliance Demonstration for Coal/Petcoke Blend

a. In Condition III.A.22 of the draft permit, FDEP requires an initial compliance demonstration "when firing 100% coal." Please consider whether an initial compliance test is also needed for a blend of 70 percent coal and 30 percent petcoke. In other words, please assess whether a coal/petcoke blend might be the worst case for some pollutants. This comment is prompted in part by the fact that the carbon monoxide emissions limits in Conditions III.A.10 and 11 are higher for the all-fuel case than for the 100-percent coal case.

b. Condition III.A.23 of the draft permit does not include a specification of the fuel blend to be evaluated during subsequent annual compliance testing. We recommend that FDEP indicate whether such testing is to be based on firing 100 percent coal only, a coal/petcoke blend only, or both.

7. Facility-wide Emissions Limits

In Condition III.A.2 of the draft permit, FDEP establishes facility-wide emissions limits for sulfur dioxide, sulfuric acid mist, mercury, and nitrogen oxides. FDEP further states that these limits apply to Units 1, 2, and 3, the zero liquid discharge spray dryers, and the cooling towers. Please check to make sure that FDEP meant to include cooling towers. Cooling towers do not typically emit the four pollutants with facility-wide emissions limits.

8. Coal Preparation and Nonmetallic Mineral Processing

In the technical evaluation (page 9 and 10), FDEP states that the emissions units affected by the PSD permit have to comply with a list of regulations. The regulations in this list include the federal new source performance standards (NSPS) for coal preparation plants and nonmetallic mineral processing plants. However, the draft permit does not include permit conditions for coal preparation units or limestone (nonmetallic mineral) handling units. If any of the NSPS listed in the technical evaluation do not apply, please delete them.

9. Carbon Burnout Permit Provision

Condition III.A.43 of the draft permit (applicable to Unit 3), specifies daily recordkeeping requirements for the "operation and configuration" of a carbon burnout unit "such that the permittee can demonstrate compliance with the emission limitations of the affected emissions units." We recommend that FDEP specify exactly what records are required by this condition.

10. Integrated Gasification Combined Cycle (IGCC)

FDEP's technical evaluation (pages 11-12) contains a brief discussion of reasons for not considering IGCC as part of a BACT analysis for the proposed PC boiler. We will point out that, pursuant to section 165(a)(2) of the Clean Air Act, it may be necessary for FDEP to address any substantive comments proposing IGCC as an alternative to the proposed project.

11. Unit 3 Nitrogen Oxides Emissions

Based on the netting analysis, PSD review (including a best available control technology determination) is not required for NO_x emissions. For the record, however, we wish to comment that the proposed NO_x emissions limit for Unit 3 of 0.07 lb/MMBtu is not representative of the lowest emission rate that could be expected for a newly designed supercritical PC boiler firing bituminous coal.

If you have any questions concerning the comments in this letter, please call Jim Little at 404-562-9118.

Sincerely,

Gregg M. Worley

Gregg M. Worley
Chief
Air Permits Section