



C O V E R

FAX

S H E E T

**To:** Ed Svec  
**Company:** FDEP  
**Fax #:** (850) 922-6979  
**Subject:** Payne Creek Title V  
**Date:** April 15, 2002  
**Pages:** 5, including this cover sheet.  
**From:** Mike Roddy

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COMMENTS:

**Seminole Electric Cooperative, Inc.**  
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0490340-NA-AC  
PSD-FL-214A  
ALSO  
0490340-002-AV

July 10, 2001

Mr. Syed Arif  
Florida Department of Environmental Protection  
Bureau of Air Regulation  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

RE: Payne Creek Generating Station  
Permit No. PSD-FL-214A

Dear Syed:

As we previously discussed, the Payne Creek Generating station combustion turbines are subject to 40 CFR 60 Subpart GG and as such, must comply with the applicable emission limits and monitoring requirements of this Subpart. Subpart GG is an older regulation, having been promulgated over 20 years ago. The NO<sub>x</sub> control technology on modern gas turbines and the almost exclusive use of pipeline natural gas and low sulfur No. 2 fuel oil have essentially made the regulation obsolete. At the time Subpart GG was promulgated, NO<sub>x</sub> emissions from gas turbines were controlled by steam or water injection into the combustion zone. Typical emissions were 75-150 ppm NO<sub>x</sub>. Modern gas turbines that burn pipeline natural gas do not typically use water or steam injection but use variations of "lean burn" technology for NO<sub>x</sub> control. Emissions from these units range from 9 to 25 ppm NO<sub>x</sub> when burning gaseous fuels. When firing No. 2 fuel oil, many turbines still use water injection; however, due to improvements in combustion control and water injection, emissions are significantly below "old" Subpart GG levels - typically ranging from 35 to 45 ppm. Consequently, the monitoring and reporting sections of Subpart GG have been made superfluous, especially in light of the 40 CFR Part 75 monitoring and reporting requirements.

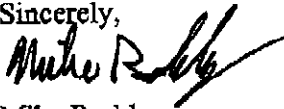
Based on the above situation, the Environmental Protection Agency (EPA) Region IV has routinely received and approved numerous requests for alternative testing and monitoring procedures under Subpart GG. These routine alternatives were recently described in a May 26, 2000 letter from Douglass Neeley to the Region IV State and Local Air Directors. This letter delegates authority to the Florida Department of Environmental Protection (FDEP) for approval of these alternatives.

Since BACT requirements for NO<sub>x</sub> emissions from Payne Creek are far below those specified by NSPS and Part 75 requires the use of CEMS, Seminole is requesting relief, through the modification of our PSD Permit, from the requirements specified under 40 CFR Part 60, Subpart GG and Method 20 NO<sub>x</sub> and O<sub>2</sub> measurement testing requirements.

In addition to the above requests concerning Subpart GG, we are also requesting the removal of the monitoring requirement C.1.g, from the performance testing section of the permit. This requirement for initial beryllium and arsenic testing on oil is no longer applicable as these pollutants were removed from the list of PSD parameters.

Attached please find a detailed description of the requested approvals following the EPA Policy, and a check for the \$ 250.00 modification fee. If you have any questions or require any additional information, please contact me at (813) 963-0994, ext 1224 or email me at [wjrodny@seminole-electric.com](mailto:wjrodny@seminole-electric.com).

Sincerely,



Mike Roddy  
Senior Environmental Engineer

cc : Hamilton S. Oven – Power Plant Siting

## Payne Creek Generating Station Alternative Testing and Monitoring Procedures PSD-FL-214A

### ~~Request 1: Nitrogen Content Monitoring~~

Seminole requests to be relieved of the requirements, under 40 CFR 60.334(b) and 40 CFR 60.335(a), to monitor, determine, compute and record the nitrogen content of the fuel combusted in the turbines. Each turbine will be fueled exclusively with pipeline natural gas and premium distillate No. 2 fuel oil (which contain no fuel bound nitrogen) and the allowed emission limits specified in the permit are well below NSPS requirements. Instead NO<sub>x</sub> emissions will be monitored by the CEMS which is required by 40 CFR 75.12(c).

### ~~Request 2: Sulfur Content Monitoring~~

NA  
In the case of Payne Creek, the gas burned conforms to the regulatory requirements for pipeline natural gas (a maximum H<sub>2</sub>S content of 0.3 gr./100 cf.). This has been confirmed by the gas pipeline tariffs as specified in 40 CFR Part 75. The sulfur content will still be approximately 500 times less than that allowed by 40 CFR Part 60, Subpart GG. Subpart GG allows for a fuel sulfur content of 0.8% by weight and this is equivalent to an H<sub>2</sub>S content of approximately 300 gr/100 scf. It is suggested that this huge sulfur content compliance margin eliminates the need for sulfur content sampling and analysis based on the characteristics of the fuel. SO<sub>2</sub> emissions will be reported based on the 40 CFR Part 75, Appendix D default factor of 0.0006 lb. SO<sub>2</sub>/10<sup>6</sup> Btu.

As outlined in the EPA Policy letter, Seminole will initially supply the Department with six months of fuel sulfur analyses acquired from Florida Gas Transmission (FGT) and semiannually obtain and file additional analyses from FGT.

### ~~Request 3: Water to Fuel Ratio Monitoring~~

The two Westinghouse Model 501(F) turbines will employ "dry low-NO<sub>x</sub>" technology when burning gas and water injection technology when burning oil. Each HRSG is equipped with a SCR catalyst bed to reduce the formation of nitrogen oxides. Seminole requests to be relieved of the requirements, under 40 CFR 60.334(a) and 40 CFR 60.335(c)(2) -- to install, monitor and record the turbines' fuel consumption and the ratio of water to fuel. Instead Seminole proposes to determine NO<sub>x</sub> concentrations and emission rates using the data collected for compliance with 40 CFR 75.12(c). A CEMS is required by 40 CFR 75.12.

### ~~Request 4: International Standard Organization Corrections~~

Seminole requests relief from the 40 CFR 60, Subpart GG 60.335(c)(1), requirement to continuously correct CEMS results to International Standard Organization (ISO) standard day conditions. Since each unit is subject to NO<sub>x</sub> limits that are substantially more stringent than those in Subpart GG, Seminole asks that the requirement to correct CEMS results to ISO standard day conditions be waived. Likewise, Payne Creek will maintain on-site, in a format suitable for Agency inspection, sufficient records of the data that would allow them to make this correction at the request of EPA or the appropriate state or local pollution control Agency.

**Request 5: Performance Testing (Load Levels)**

Seminole requests a waiver of the four-load test requirement specified in 40 CFR Part 60.335(c)(2). In accordance with Subpart GG requirements, the NO<sub>x</sub> performance test for each turbine is supposed to be conducted at 30, 50, 75 and 100 percent of peak load, or at four points in the normal operating range of the gas turbine. The purpose of this Subpart GG testing requirement is to establish water-to-fuel ratio limits that can be applied over the units' operating range. Since water-to-fuel ratios will not be used to determine compliance, it is not necessary to conduct the performance tests at multiple loads.

With one exception, Seminole proposes to perform all CEMS and compliance testing at a normal, high load. For Part 75, the NO<sub>x</sub> CEMS RATA must be performed at normal load. As specified in Specific Condition (C)(1) of permit PSD-FL-214A/PS-89-25SA, "Testing of emissions shall be conducted at 95-100% of the manufacturer's rated heat input based on the average ambient air temperature for the CT during the test." In addition to the high load tests, testing will be conducted at the lowest sustainable level to determine CO emissions.

**Request 6: Performance Testing (RATA)**

Seminole requests a waiver of the performance testing requirements under 40 CFR 60.335(b) and (c)(3). Seminole proposes to use the provisions of 40 CFR Part 75, which include an initial CEMS certification per the testing requirement methods of Appendix A, to demonstrate compliance with the standard for nitrogen oxides. A relative accuracy test audit (RATA) is required by 40 CFR Part 75, Appendix A §6.5. Also, to ensure that conservative quality assurance checks specified under Method 20 are met while performing the CEMS RATA, Seminole acknowledges that pre- and post-run calibration checks as specified under Method 20 must be performed during the RATA. Seminole proposes using the initial certification RATA, utilizing reference methods 3A and 7E, in conjunction with the Method 20 calibration checks to meet the requirements specified in Subpart GG, 60.335(c)(3). Since each of the nine (9) or more RATA runs will be conducted for a minimum of twenty one (21) minutes, the total time of the performance test will be a minimum of three (3) hours. A separate RATA will be conducted when burning pipeline natural gas and No. 2 fuel oil.

**Request 7: Beryllium and Arsenic**

Seminole requests the removal of the permit condition C.1.g which requires an initial test for beryllium and arsenic on oil. This condition is no longer applicable since these parameters were removed from the PSD list.