

MAY 16 2006

STATE OF FLORIDA
DIVISION OF ADMINISTRATIVE HEARINGS

SITING COORDINATION

IN RE: SEMINOLE ELECTRIC COOPERATIVE
SEMINOLE GENERATING STATION
UNIT 3
POWER PLANT SITING APPLICATION
NUMBER PA 78-10A2

OGC NO. 06-0780
DOAH NO. 06-0929EPP

NOTICE OF INSUFFICIENCY

Pursuant to section 403.5067, Florida Statutes, the Florida Department of Environmental Protection (Department) hereby finds the application insufficient. A description of all insufficiency issues is attached and incorporated by reference herein.

NOTICE OF RIGHTS


Pursuant to Section 403.5067, F.S., as a result of the Department's determination of insufficiency, the applicant may withdraw the application or amendment. If the applicant declines to withdraw the application or amendment, the applicant may, at its option:

1. Within 40 days after the department filed its statement of insufficiency or such later date as authorized by department rules, file additional information necessary to make the application or amendment sufficient. If the applicant makes its application or amendment sufficient within this time period, the time schedules under this act shall not be tolled by the department's statement of insufficiency;

2. Advise the department and the administrative law judge that the information necessary to make the application or amendment sufficient cannot be supplied within the time period authorized in paragraph 1. The time schedules under this act shall be tolled from the date of the notice of insufficiency until the application or amendment is determined sufficient; or

3. Contest the statement of insufficiency by filing a request for hearing with the administrative law judge within 15 days after the filing of the statement of insufficiency. If a hearing is requested by the applicant, all time schedules under this act shall be tolled as of the department's statement of insufficiency, pending the administrative law judge's decision concerning the dispute. A hearing shall be held no later than 30 days after the filing of the statement by the department, and a decision shall be rendered within 10 days after the hearing.

Respectfully submitted this 15th day of May, 2006,

A handwritten signature in black ink, appearing to read 'S. Goorland', written over a horizontal line.

for **Scott A. Goorland**
Senior Assistant General Counsel
Florida Bar No. 0066834
3900 Commonwealth Boulevard - MS 35
Tallahassee, Florida 32399-3000
(850) 245-2242/ FAX 245-2302

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing Filing of List of Affected Agencies has been sent by mail to the following listed persons this 15th day of May, 2006:

James V. Antista, Esquire
General Counsel
Fish and Wildlife Conservation
Commission
620 South Meridian Street
Tallahassee, FL 32399-1600

Sheauching Yu, Esquire
Department of Transportation
605 Suwannee Street – MS 58
Tallahassee, FL 32399-0450

Kelly Martinson, Esquire
Assistant General Counsel
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100

Martha Carter Brown, Esquire
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Vance W. Kidder, Esquire
St. Johns River Water
Management District
P.O. Box 1429
Palatka, FL 32178-1429

Charles F. Justice
North Central Florida Regional Planning
Council
2009 N.W. 67th Place, Suite A
Gainesville, FL 32653-1603

Ronald Williams, Chairman
Board of County Commissioners
Post Office Drawer 1529
Lake City, FL 32056

Mark Scruby, Esquire
Clay County Attorney
Post Office Box 1366
Green Cove Springs, FL 32043

Wayne Smith, Chairman
Board of County Commissioners
Union County
15 Northeast First Street
Lake Butler, FL 32054

Patrick Gilligan
City of Ocala
1531 Southeast 36th Avenue
Ocala, FL 34471

Gordon B. Johnston, Esquire
Marion County Attorney
601 Southeast 25th Avenue
Ocala, FL 34471

Lynne C. Capehart, Esquire
1601 Northwest 35th Way
Gainesville, FL 32605

Russell D. Castleberry, Esquire
Post Office Box 758
Palatka, FL 32178


For **SCOTT A. GOORLAND**
Senior Assistant General Counsel



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Building
2600 Blairstone Road
Tallahassee, Florida 32399-2400

Colleen Castille
Secretary

MEMORANDUM

To: Scott Goorland, OGC
From: Ann Seiler, Siting Coordination

Through: Hamilton Oven, Siting Coordination Manager

Date: May 9, 2006

Re: **Seminole Power Plant Unit 3, PA 78-10A2**
DOAH Case No 06-0929EPP; OGC Case No. 06-0780

Pursuant to § 403.5067, Florida Statutes, the Department of Environmental Protection after consulting with the affected agencies has determined that the application for site certification lacks sufficient information to support a recommendation of certification.

The *Bureau of Air Regulation* has conducted an initial sufficiency review for the proposed Seminole Unit 3. Following are their sufficiency items:

1. The Department is not clear regarding Seminole's rationale that baghouses are not considered as equivalent to ESP's in high sulfur coal applications. Please explain.
2. Within the cost effectiveness calculations for a baghouse compared to an ESP, please explain the rationale for expecting that the removal rates are identical (8.5 lb/MMBtu inlet and 0.015 lb/MMBtu outlet).
3. What consideration was given to PM2.5 in the selection of an ESP versus a baghouse?
4. The proposed BACT emission rate for CO appears to be high, for a newly designed, non-retrofit application. Please comment.
5. No comprehensive SO2 ambient air quality standards (AAQS) or PSD Class II increment modeling has been performed in the area of Seminole Generating Station in the last ten years. Generally, when a large power plant is requesting a major modification, the Department requests SO2 multiple source ambient quality modeling for comparison with the AAQS and Class II PSD increments in the vicinity of the facility, even if projected SO2 emissions do not trigger PSD review. Please submit an SO2 AAQS and Class II PSD air quality analysis in the vicinity of the plant for all averaging times. Please use the 2001-2005 Jacksonville meteorological data which the Department will provide.
6. Please provide a map showing the location of the fenceline and fenceline receptors in

UTM coordinates around Seminole Generating Station. The map should have a scale and preferably should be in AUTOCAD format. Any roads into and out of the property should be shown.

7. As was done for the Okefenokee Wilderness Area, please perform a multiple source SO₂ PSD Class I increment analysis for the Chassahowitzka National Wilderness Area showing the impacts of reduced SO₂ emissions from this project. Please use 2001-2003 CALPUFF meteorological data.

8. Please redo the NO_x, CO and PM₁₀ air quality modeling using 2001-2005 Jacksonville meteorological data which the Department will provide.

The *Division of Water Resource Management* had the following comments:

1. 3.1, page 3-3: Paragraph 3 indicates that a new wastewater surge pond will be installed to accommodate the storage of wastewater during times when the ZLD is not in service. The Water Use Diagram, Figure 3.5.0-1, does not include the new surge pond (although the water use diagram does include an equalization basin). Please clarify.

2. The hydraulic storage capacity of the new surge pond in terms of days of storage needs to be specified. Adequate storage capacity should be provided for periods of time when wastewater cannot be reused such as maintenance downtime. What alternate means of wastewater disposal are provided?

3. 3.5.4, page 3-23: This section indicates that wastewater from Units 1, 2, and 3 will continue to be treated in the plant's wastewater treatment facility. The Water Use Diagram, Figure 3.5.0-1, does not include the plant's wastewater treatment facility (although the equalization basin is shown which is part of the plant's wastewater treatment facility). The water use diagram should be revised as necessary.

4. 3.5.4.4, page 3-24: This section refers to the gypsum dewatering and washing system. Please provide a brief description of the gypsum dewatering and washing system including wastewater streams that are generated. The Water Use Diagram, Figure 3.5.0-1, should also include the gypsum dewatering and washing system.

5. Figure 3.5.0-1, Water Use Diagram: The diagram indicates cooling tower blowdown flow rates for Units 1 and 2 that are significantly greater than current permitted flow rates. Please explain reason for the significant increase in cooling tower blowdown from Units 1 and 2.

General: The addition of Unit 3 to the Seminole Generation Station will require a substantial revision to the existing NPDES wastewater permit. Please note that the proposed Unit 3 addition may invoke Department's antidegradation requirements for new or expanded facilities that would need to be addressed as part of the permit revision.

The Northeast District Solid Waste Office had the following comments:

The application indicates that wastes will either be disposed at an offsite permitted landfill or will be managed onsite with the installation of a composite or double-lined landfill with a leachate collection and removal system at the existing landfill area. However, it does not provide any details regarding the design, construction or operation of such a landfill. Therefore, the following information is needed:

1. An indication of the precise location of the proposed lined landfill (e.g., will it be next to the existing landfill or on top of it).
2. A layout of the landfill design, including the thickness and hydraulic conductivity of each layer and an analysis of the sufficiency of the design.
3. A geotechnical investigation of the adequacy of the landfill site.
4. A specification of how the landfill will be constructed, including both the QA/QC of the project and the minimum experience of the individual in charge of the same.
5. A landfill operations plan.
6. An indication of the expected life of the landfill and how it will be maintained after closing.
7. An indication of how financial assurance for the closure and subsequent care of the landfill will be established.
8. The documents provided make reference to the existing groundwater monitoring program but does not provide an evaluation of that program or make an affirmation of the adequacy of the existing well network and sampling requirements. Please provide a detailed evaluation of the groundwater monitoring program and its adequacy to detect potential contaminant releases. Insofar as the on-site existing solid waste disposal unit has contributed to groundwater degradation that was not detected by the existing monitoring wells, it is appropriate that the adequacy of the existing site wide groundwater monitoring system be evaluated. Revisions to the groundwater monitoring system may be required.

Northeast District Wastewater and Stormwater has reviewed Section 10.9 Stormwater Management Calculations of the application and found that following additional information may necessary for a complete evaluation of the application:

1. It appears that information provided in Table 10.9.0-1 are not consistent with the information provided in Wet Detention Pond Design Notes and Calculations. Please verify and provide updated information.
2. Rule 40C-42.026(4)(b) requires that outfall structures shall bleed down one-half of treatment volume with 24 to 30 hours. Design calculations of the proposed stormwater management system

indicate that all wet detention ponds will recover one-half of the treatment volume in 48 hours. Please verify and revise each orifice design.

3. Please explain how seasonal high ground water elevations and average ground water elevations are determined. Please provide geotechnical report(s) with soil borings conducted at each proposed pond and swale location. At minimum, the report(s) shall include soil profiles and estimated seasonal high ground water elevations. For swales, site specific permeability at proposed swale locations shall also be provided.
4. For each pond, please provide a plan view, a typical cross section and control structure details. These drawings shall provide information of pond dimensions at top and bottom, pond elevations at top and bottom, weir and orifice elevations and pond slopes at various depths.
5. For each swale, please provide a plan view, a typical cross section. These drawings shall provide information of swale dimensions at top and bottom, swale elevations at top and bottom, swale slopes and elevations of 12" culverts. The invert elevation of each culvert shall be high enough so that treatment volume will be maintained in each swale.
6. Please provide Tc calculations for all basins to support ponds and swales design.
7. Will skimmers be provided for all ponds and swales? Please indicate each of them on drawing.
8. Please provide a plan of best management practices for erosion and sediment control during construction.
9. The design report provides two stage-storage tables for Pond #1. It appears that pond size inputted into computer modeling is larger than pond size used for determine treatment volume. Please explain and indicate the final pond design.
10. For Pond #4, please clarify impervious area at pre-development. Design Summary indicates 15% of the total basin area. But modeling input indicates 50%.
11. Will depths of swale #1, 2, 3 and 4 be 2.0 feet, swale #5 be 2.6 feet and swale #6 be 2.4 feet?
12. 10.9.1 Stormwater Management and Calculation indicates that area within the coal pile railroad loop and area of landfill/FGD effluent processing are not included within the Unit 3 stormwater management system because runoff from various portions of these basins which are impacted by the construction or operation of Unit 3 are reused. Please provide more information regarding location and acreage of the impacted areas, runoff collection and reuse.

Northeast District Industrial Waste Groundwater review;

1. A updated monitor well location map, drawn to scale, and in reference to the percolation ponds, landfill areas, property lines, roads, buildings, wetlands, water bodies, etc. is requested.
2. Since the facility has it's own on-site staff that conducts monitoring of the wells, please clarify that the sampling is conducted in accordance with today's DEP Standard Operation Procedure Manual for Field Sampling. This should include a brief summary of experienced

personnel that are trained in sampling monitor wells, field sampling equipment used, purge volumes and techniques, field measurements that are tested, decontamination procedures.

3. In Section 5.2.1, it is referenced that contact stormwater is discharged into an equalization basin. Please clarify if this basin is lined, or unlined, and the type of liner.

The *Division of Water Resources Management's Watershed Assessment Section* has the following comments:

1. The applicant used the CORMIX model to calculate the dilution characteristics for the requested mixing zones. Based on the derivation of dilution in our Attachment 1, the dilution factors in Table 10.1.2-4 appear to be calculated as dilution (D) instead of (S) as used by CORMIX. All CORMIX concentrations are expressed as 'excess' concentrations after the ambient concentration has been subtracted from both the effluent and the criterion concentrations. Dilution (S) in CORMIX is then the ratio of the excess concentration at the discharge port (after subtracting out the ambient concentration) to the 'diluted' concentration at any downstream location. To correctly match up predicted dilution to required dilution, the ambient concentrations must be subtracted from both the effluent and criterion concentrations in the calculation of required dilution. This is important, even when modeling as a percent reduction, as the predicted dilution (S) in the model assumes the background ambient concentration has been subtracted out. It appears to us that the applicant used the equation $[(EC-C)/(C-BC)]$ from our Attachment 1 for the required dilution. It is our understanding that to match up with the CORMIX dilution (S) the equation $[(EC-BC)/(C-BC)]$ should be used to calculate the required dilution. This will have the effect of adding 1 to each of the required dilutions in Table 10.1.2-4 and increasing the size of the mixing zones. Please have the applicant address this concern.
2. The water quality criterion for specific conductance is 1275 umhos or 50 percent above background, whichever is greater. Please have the applicant explain the derivation of the specific conductance criterion of 1,990. umhos/cm that was used in the modeling. Include all calculations and assumptions.
3. Please have the applicant provide the details for how the worst-case criteria were developed for each of the hardness dependent metals. Include all calculations and assumptions. In previous renewal cycles we have provided the applicant with the following recommendations. Worst-case ambient criteria and effluent concentrations for hardness dependent metals should be based on the lowest hardness (worst case) for both effluent and receiving water. For mixing zones it should be the lowest 5th percentile hardness from either the receiving water or the effluent and not the average. Alternatively, it would be more accurate to use actual paired hardness and metal data. By this we mean, use the actual hardness (if available) from the same station/date/time as the metal sample to calculate the criterion value and compare it to the metal concentration of the same sample.
4. The CORMIX model switches between predicting flux-average dilution and centerline dilution depending on which module is in use. The output clearly indicates whether the prediction of dilution is centerline or flux-average. The CORMIX manual provides guidance for converting between the two values. Guidance previously provided to the applicant clearly states

that the DEP requires the required dilution be met along the centerline as opposed to using the flux-average. Please have the applicant address this concern.

5. The applicant states that if all samples from the river were less than the detection limit then the constituent was assumed absent. We have previously provided the applicant with the rule requirements (Rule 62-4.246, FAC) and guidance for handling this situation. Rule 62-4.246(11), FAC, allows for the use of zero only when there is **no evidence** that the pollutant is present in the ambient water. For **all naturally occurring** constituents, the assumption made by the applicant could be a violation of Rule 62-4.246(8), FAC, which requires the use of one half the MDL or the criterion whichever is less when there is evidence that the pollutant is present. This is particularly important, as the river is the source of the water used by the facility. Therefore, all naturally occurring constituents of the St. Johns River should be believed present. Data less than DEP approved detection limits would indicate compliance with the criteria, but not the absence of the constituent. Please have the applicant address this concern.

6. The applicant notes that no toxicity data are available that are representative of the proposed discharge. However, it is our understanding that the current discharge is not in compliance with the acute toxicity criterion. As such, no mixing zones other than thermal can be implemented in a permit without a demonstration of compliance with the acute toxicity criterion. This is in accordance with Rule 62-4.244, FAC requirements that all waters of the state, (even inside mixing zones) comply with the minimum criteria for surface waters. Please have the applicant address this concern.

7. Please have the applicant explain why oil and grease will become a constituent of concern when no mixing zone was requested for the most recent renewal. Also, have the applicant explain why the concentrations of cadmium and lead are expected to increase while the concentrations for all other metals will either remain the same or decrease.

8. The applicant explains that the mixing zones are sized based on the 'composited' results from the six different scenarios run with the CORMIX model. The results of these analyses are presented in Table 10.1.2-5, as distance parallel to shore and distance perpendicular to the shore. The area calculated from these distances is double the area of the requested mixing zones. Please have the applicant provided a detailed explanation of how the mixing zones were sized and why the requested mixing zones are smaller than the area calculated from the dimensions of the 'composited' model results.

9. The applicant provided the DEP with an electronic copy of the report in PDF format. The DEP was not able to search or extract information (data) from this PDF file. Therefore, we could not verify the determination of worst-case effluent and ambient conditions. Please have the applicant provide all ambient and effluent data used in the application in a usable electronic form such as EXCEL or ACCESS.

The *St. Johns River Water Management District* had the following comments:

1. The application requests 33.2 million gallons per day (MGD) or 12,136 million gallons per year (MGY) of surface water withdrawal from the St. Johns River for various uses at the site. The application also indicates 8.6 mgd or 3,138 mgy of surface water returned to the St. Johns

River. This results in a net loss of 24.6 mgd or 8.979 mgy of surface water from the St. Johns River. Please provide reasonable assurance that the proposed surface water withdrawals from the St. Johns River will not cause adverse impacts to the River and associated wetlands. Please provide documentation that the proposed withdrawals from the St. Johns River will not harm individuals or populations of the endangered West Indian manatee (*Trichechus manatus*). [Paragraph 10.3; (d) A.H.]

2. Please submit a map delineating all the existing and proposed surface water pumps for this project. This map must be a USGS quad map that includes the project's property boundary. Please provide the following information for each of these pumps: pump number, pump capacity (gpm), operation in hours per week, status (date if proposed), name of source, and type of use. [Paragraph 10.3; (a)(b)(c)(d) A.H.]

3. The District requires the most efficient use of water for each process. The application indicates a request for 33.2 mgd of surface water from the St. Johns River for various uses (processes) at the site. Please substantiate the amount of surface water requested by providing the methodology used for determining the amount of water necessary for each use. This shall include an explanation of the water requirements for each process by providing a detailed description of each process with an emphasis on water use requirements. [Paragraph 10.3; (a)(b) A.H.]

4. Please provide a Water Conservation Plan for all processes that use surface water at this site. [Paragraph 10.3; (e) A.H.]

5. The application states that numerous temporary dewatering activities conducted at various locations throughout the site will last approximately 16 months. Please answer the following questions concerning these dewatering activities:

a. Please describe what procedures you propose to implement at the site to ensure that dewatering will not cause or contribute to flood damage. This should include the proposed rate and duration of water pumped for dewatering.

b. Please provide a map delineating the portions of the property where the dewatering activities will take place, and the extent of the proposed excavations, both vertically and laterally. Also include locations and dimensions of the proposed onsite stormwater detention ponds that are proposed to receive dewater discharges.

c. Please provide the proposed locations and capacities (gpm) of proposed dewatering pump(s).

d. Please provide a detailed description of turbidity treatment and erosion control measures at the discharge point(s). Please fully describe the means to be taken to ensure there will not be turbid discharge or erosion at or downstream of the discharge point(s). Please fully describe the means to be taken to ensure there will not be turbid discharge or erosion at or downstream of the discharge point(s). Will there be use of silt screens, bales, socks, and/or discharge of water through a culvert before reaching receiving bodies?

e. Please submit a map showing the extent of the projected drawdown in the surficial aquifer due to dewatering. Please be aware that based on the projected drawdown and the location of wetland areas and existing legal users in relation to the withdrawal point(s), a

demonstration that drawdowns due to dewatering will not result in adverse impacts to wetlands or existing legal users is required. [Paragraph 10.3; (d)(i)(k)A. H.]

The *Florida Department of Transportation* reviewed the application and has found the following additional transportation related information is needed:

1. An engineering diagram of the access of the Unit 3 Project entrance Road to U.S. 17.
2. A description with accompanying engineering diagrams of proposed improvements necessary at the intersection of the Unit 3 Project entrance Road and U.S. 17 to assure the safety of vehicles (especially trucks) turning in and out of the site, including all exclusive auxiliary lanes, rail crossing and water pipeline improvements in the vicinity of the intersection.
3. Plans for a signalization warranty study.
4. Identification of any new facilities with a height of 200 feet or more.
5. A description with accompanying engineering diagrams of any stormwater ponds required as a result of widening the roads at this intersection.

The *Florida Department of Agriculture & Consumer Services* reviewed the application and has the following questions:

1. Is a portion of the fuel used biomass? The production of crops for the purpose of generating biomass has the potential to become an important agricultural commodity that could significantly support rural economies.

The *United States Environmental Protection Agency* has reviewed the application and provides the following comments:

The words "you" and "your" in the comments below mean the Florida Department of Environmental Protection.

1. Design Information - The PSD permit application itself contains very few design details for project equipment components (boiler manufacturer and design specifications, emissions control equipment manufacturers and design specifications, etc.). I hope that additional details are provided in the other documents that comprise the total site certification package.
2. Creditable Emissions Decreases for Netting - I have the following comments on the netting analysis for the project:
 - a. A critical component of the proposed project is the use of emissions decreases that allow the project to net out of PSD review for SO₂, NO_x, and SAM emissions. You of course need to check the quantitative netting calculations. You also need to decide if emissions controls being applied for other regulatory purposes such as compliance with the Clean Air Interstate Rule are acceptable as a creditable emissions decrease for PSD netting purposes.

Seiler, Ann

From: Holladay, Cleve
Sent: Monday, May 01, 2006 3:48 PM
To: Halpin, Mike; Seiler, Ann
Cc: Koerner, Jeff
Subject: RAI Question for Seminole Unit 3

ke,
ave an additional modeling question for Seminole Unit 3:

was done for the Okefenokee Wilderness Area, please perform a multiple source SO2 PSD Class I increment analysis for the Okefenokee National Wilderness Area showing the impacts of reduced SO2 emissions from this project. Please use 2001-2003 CALPUFF meteorological data.

b. Table 3-3, PSD Netting Analysis, contains this footnote: "Units 1 and 2 baseline actual emissions are based on Tables B-4E through B-4S, supplied with Units 1 and 2 application." For a complete public record of the Unit 3 permitting process, the netting tables need to be included with the Unit 3 project docket and not merely cited by reference to another application.

c. As you review the PSD netting analysis for the proposed Unit 3 project, please keep in mind a regulatory requirement that is often overlooked. The requirement is found in your definition of "net emissions increase." 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."

3. Particulate Matter BACT - SECI's proposed PM/PM10 BACT emissions rate is 0.015 lb/MMBtu. I am not sure if this rate is for filterable particles only or for both filterables and condensibles. I recommend that any permit issued for this project include a filterables emissions limit for which compliance will be assessed using a PM CEMS, and a total PM10 emissions limit for which compliance will be assessed using annual Method 201A/Method 202 tests or some comparable test method that accounts for condensibles. I understand that PM CEMS equipment may exist for measurement of both filterable and condensible particles, but I do not have any details on this.

4. CO and VOC BACT - SECI comments on page 52 of the draft application that the proposed CO and VOC BACT emissions rates are "within the range of emission rates recently established as BACT." For a proposed new coal-fired EUSGU with the latest design features, justification is needed as to why the proposed BACT emissions rates are not at the low end of the range of previous BACT determinations or even less.

5. Petroleum Coke - SECI has based its application on a fuel mix containing up to 30 percent petroleum coke (petcoke). Any permit you issue for this project should contain a permit condition specifying the maximum allowed petcoke percentage and a method of tracking this percentage. (Also see additional comment about petcoke in next item.)

6. Sulfur Dioxide - Although the netting analysis appears to exempt the project from PSD review (and BACT) for SO2 emissions, methods for minimizing SO2 emissions should still be given careful consideration. I have the following comments on control of SO2 emissions:

a. SECI describes four types of bituminous coal with similar heating values ranging in sulfur content from 0.1 to 3.8 percent by weight. A variability factor of 38 ($3.8 \div 0.1$) in sulfur content is considerably more than is typical for a permit application. If you decide to issue a permit without further selection of a specific coal type on SECI's part, the permit should contain variable SO2 limits pegged to coal type and coal sulfur content.

b. Whatever coal type is selected, SECI will have to import coal from long distances. SECI's preference for a bituminous coal appears to be based in part on the convenience of using a coal type that is similar to the coal type currently burned in Units 1 and 2. I recommend that you ask SECI for an explanation as to why exclusive use of low-sulfur Western coal (such as Powder River Basin coal) is not an option.

c. SECI proposes to burn a fuel blend with up to 30 percent petroleum coke (petcoke) in Unit 3. The stated petcoke sulfur content is as high as 6.8 percent by weight. If SECI cannot assure that the petcoke sulfur content will seldom be at this high level, you should give consideration to restricting the fuel blend to less than 30 percent petcoke content.

d. SECI plans to use No. 2 distillate fuel oil with a sulfur content of 0.5 percent by weight as fuel for an emergency generator and for three ZLD spray dryers. No. 2 fuel oil with much lower sulfur content than 0.5 percent is readily available now and will be even more so in the future. Unless SECI can show that the availability of a lower sulfur fuel oil is questionable or that the cost of lower sulfur fuel oil is prohibitively expensive, you should give consideration to prescribing that fuel oil sulfur content be on the order of 0.05 percent or less. (Incidentally, it is not clear to me from the PSD permit application why a ZLD design requiring combustion of millions of gallons of fuel oil per year is preferable to a liquid discharge design from an environmental and energy use standpoint.)

7. Nitrogen Oxides - The netting analysis appears to exempt the project from PSD review (and BACT) for NOx emissions. Methods for minimizing NOx emissions should still be given careful consideration, however. Specifically, the proposed NOx emissions limit for Unit 3 of 0.07 lb/MMBtu is not representative of the emission rate that could be expected for a newly designed supercritical PC boiler firing bituminous coal. A recent example related to this point is the Louisville Gas & Electric (LG&E) Trimble County project in Kentucky. LG&E recently received a permit to construct a new PC supercritical bituminous coal-fired EUSGU at an existing power station. Although the project netted out of PSD review for NOx, the NOx emissions limit for the EUSGU is equivalent to an emissions rate of 0.05 lb/MMBtu.

8. Startup and Shutdown Conditions - Emissions from proposed new coal-fired EUSGU's during startup and shutdown conditions have been receiving increased attention. As a case in point, a number of recent coal-fired power plant projects have been opposed by environmental groups, and startup/shutdown issues have been among the concerns raised by these groups. If you issue a permit for Unit 3, the permit will need to include provisions on startup and shutdown. Some ideas on this point are as follows:

a. The permit should contain an objective definition of what constitutes a condition of startup or shutdown so that emissions occurring during startup and shutdown can be identified separately from other emissions.

b. Since startup and shutdown events are part of normal operation for a utility boiler, you should give consideration to establishing numeric emissions limits for these events.

c. You might also consider a permit requirement that SECI provide a startup and shutdown emissions minimization manual by a date certain prior to start of commercial operation. Such a manual would include specific measures for minimization of emissions during startup and shutdown and not just a general statement that "good work and maintenance practices and manufacturer's recommendations" will be followed. For example, the manual would specify the time at which control methods (SCR, ESP, FGD) must be activated following the initiation of a startup.

9. IGCC Discussion - On page 56 of the permit application SECI comments on IGCC technology with reference to the letter from Stephen Page of EPA dated December 13, 2005. Please consider the following two points concerning the EPA letter: (1) Mr. Page does not say in the letter that a state reviewing authority is prohibited from considering IGCC in a BACT evaluation for a PSD permit. (2) Although Mr. Page states an opinion that EPA would not require consideration of IGCC as a BACT option, he points out that consideration of IGCC might be appropriate with respect to section 165(a)(2) of the Clean Air Act specifying that opportunity be afforded for public comment on "alternatives" to a proposed project.
10. Mercury - The method of controlling mercury emissions from Unit 3 proposed by SECI is a co-benefit approach. That is, mercury emissions will be reduced as a co-benefit of controls installed for other pollutants. I recommend that consideration also be given to use of a specific add-on mercury control method. If you decide to issue a permit for this project without specific mercury controls, I further recommend that the permit specify a project layout that will accommodate future installation of a specific mercury control method.
11. State Ambient Air Quality Standards - In addition to national ambient air quality standards and PSD increments, you have state ambient air quality standards (SAAQS) for SO₂. Please verify that the information in the PSD permit application is adequate for assuring compliance with the SO₂ SAAQS.
12. Emergency Generator - SECI states on page 12 of the application that "the emergency generator is an exempt emission unit and can be considered an insignificant activity for air permitting purposes." Just as a reminder, the concept of an "exempt emission unit" or an "insignificant activity" does not exist in PSD permitting rules. Any new or modified unit or activity that causes a net increase in emissions of a pollutant subject to PSD review should be assessed.

Memorandum

Florida Department of Environmental Protection

TO: Buck Owen, SCO
Ann Seiler, SCO
THRU: Trina Vielhauer, Chief, BAR
THRU: Jeff Koerner, North Permitting Section, BAR
FROM: Mike Halpin
Cleve Holladay
DATE: May 1, 2005
SUBJECT: Seminole Electric Cooperative, Inc.
Seminole Generating Station Unit 3
PA 78-10

Please include the following questions and comments in your sufficiency package to Seminole Electric:

1. The Department is not clear regarding Seminole's rationale that baghouses are not considered as equivalent to ESP's in high sulfur coal applications. Please explain.
2. Within the cost effectiveness calculations for a baghouse compared to an ESP, please explain the rationale for expecting that the removal rates are identical (8.5 lb/MMBtu inlet and 0.015 lb/MMBtu outlet).
3. What consideration was given to PM_{2.5} in the selection of an ESP versus a baghouse?
4. The proposed BACT emission rate for CO appears to be high, for a newly designed, non-retrofit application. Please comment.
5. No comprehensive SO₂ ambient air quality standards (AAQS) or PSD Class II increment modeling has been performed in the area of Seminole Generating Station in the last ten years. Generally, when a large power plant is requesting a major modification, the Department requests SO₂ multiple source ambient quality modeling for comparison with the AAQS and Class II PSD increments in the vicinity of the facility, even if projected SO₂ emissions do not trigger PSD review. Please submit an SO₂ AAQS and Class II PSD air quality analysis in the vicinity of the plant for all averaging times.
6. Please provide a map showing the location of the fenceline and fenceline receptors in UTM coordinates around Seminole Generating Station. The map should have a scale and preferably should be in AUTOCAD format. Any roads into and out of the property should be shown.
7. As was done for the Okefenokee Wilderness Area, please perform a multiple source SO₂ PSD Class I increment analysis for the Chassahowitzka National Wilderness Area showing the impacts of reduced SO₂ emissions from this project. Please use 2001-2003 CALPUFF meteorological data.

We will provide Park Service and EPA comments as soon as they are available and they will comprise a part of our review.

Please advise Seminole that they may contact me at 850/245-8993 or Cleve Holladay at 850/921-8986 regarding the above questions.

Seiler, Ann

From: Oven, Hamilton
Sent: Monday, May 01, 2006 12:50 PM
To: Seiler, Ann
Subject: FW: SECI Unit 3 Site Certification

Attachments: SECI commentsTemp.doc

From: Hatcher, Michael
Sent: Friday, April 28, 2006 1:47 PM
To: Oven, Hamilton
Cc: Hubbard, Allen; Blyden, Tamara
Subject: SECI Unit 3 Site Certification

We have completed our review of the subject document. Our comments are attached.



SECI
mentsTemp.doc (29

Seminole Electric Cooperative, Inc
Unit 3 Site Certification PA78-10

3.1, page 3-3: Paragraph 3 indicates that a new wastewater surge pond will be installed to accommodate the storage of wastewater during times when the ZLD is not in service. The Water Use Diagram, Figure 3.5.0-1, does not include the new surge pond (although the water use diagram does include an equalization basin). Please clarify.

The hydraulic storage capacity of the new surge pond in terms of days of storage needs to be specified. Adequate storage capacity should be provided for periods of time when wastewater cannot be reused such as maintenance downtime. What alternate means of wastewater disposal are provided?

3.5.4, page 3-23: This section indicates that wastewater from Units 1, 2, and 3 will continue to be treated in the plant's wastewater treatment facility. The Water Use Diagram, Figure 3.5.0-1, does not include the plant's wastewater treatment facility (although the equalization basin is shown which is part of the plant's wastewater treatment facility). The water use diagram should be revised as necessary.

3.5.4.4, page 3-24: This section refers to the gypsum dewatering and washing system. Please provide a brief description of the gypsum dewatering and washing system including wastewater streams that are generated. The Water Use Diagram, Figure 3.5.0-1, should also include the gypsum dewatering and washing system.

Figure 3.5.0-1, Water Use Diagram: The diagram indicates cooling tower blowdown flow rates for Units 1 and 2 that are significantly greater than current permitted flow rates. Please explain reason for the significant increase in cooling tower blowdown from Units 1 and 2.

General: The addition of Unit 3 to the Seminole Generation Station will require a substantial revision to the existing NPDES wastewater permit. Please note that the proposed Unit 3 addition may invoke Department's antidegradation requirements for new or expanded facilities that would need to be addressed as part of the permit revision.

Florida Department of Environmental Protection

Memorandum

DEPARTMENT OF
ENVIRONMENTAL PROTECTION

MAY 02 2006

SITING COORDINATION

TO: Mr. Hamilton Oven, P.E. Administrator
FL Dept. of Environmental Protection
Siting Coordination Office
MS #48

Ann Seiler, Environmental Specialist – Web Manager
Florida Energy Office, Siting Coordination
MS #48

FROM: Emerson C. Raulerson, P.E. *ECR*

DATE: April 27, 2006

SUBJECT: Review of the Site Certification Application for Seminole Electric Cooperative, Inc.
Facility I.D. No. FL0036498
Power Plant Site Certification No. PA78-10
Seminole Generating Station, Unit 3
Palatka, Putnam County, Florida

The Northeast District's Solid Waste Section has reviewed the above-referenced document prepared by Golder Associates, Inc. (dated March 2006) on behalf of Seminole Electric Cooperative, Inc. The application indicates that wastes will either be disposed at an offsite permitted landfill or will be managed onsite with the installation of a composite or double-lined landfill with a leachate collection and removal system at the existing landfill area. However, it does not provide any details regarding the design, construction or operation of such a landfill. Therefore, the following information is needed:

1. An indication of the precise location of the proposed lined landfill (e.g., will it be next to the existing landfill or on top of it).
2. A layout of the landfill design, including the thickness and hydraulic conductivity of each layer and an analysis of the sufficiency of the design.
3. A geotechnical investigation of the adequacy of the landfill site.
4. A specification of how the landfill will be constructed, including both the QA/QC of the project and the minimum experience of the individual in charge of the same.
5. A landfill operations plan.
6. An indication of the expected life of the landfill and how it will be maintained after closing.
7. An indication of how financial assurance for the closure and subsequent care of the landfill will be established.

Also, please refer to the accompanying review memorandum from Richard S. Rachal, P.G. and Craig D. Parke, P.G. which focuses primarily on groundwater related issues as they relate to the disposal and storage of solid waste.

ECR/ddb *db*

Memorandum

Florida Department of Environmental Protection

Northeast District -- Jacksonville

TO: Mary C. Nogas, P.E.
Solid Waste Section

Emerson Raulerson, P.E.
Solid Waste Section

FROM: Richard S. Rachal, P.G. *RSR*
Waste Cleanup Section
Craig D. Parke, P.G. *CDP*
Waste Cleanup Section

DATE: April 26, 2006

SUBJECT: Seminole Electric Cooperative, Inc.
Facility I.D. No. FL0036498
Power Plant Site Certification No. PA78-10
Seminole Generating Station, Unit 3
Palatka, Putnam County, Florida

The Waste Cleanup Section has reviewed the above-referenced document prepared by Golder Associates Inc. (Golder) on behalf of Seminole Electric Cooperative, Inc. (Seminole) dated March 7, 2006. The subject document was submitted to the Florida Department of Environmental Protection (FDEP) in partial fulfillment of Rule 62-17.205(1) requirements. This review has primarily focused on groundwater related issues as they relate to the solid waste disposal or storage areas and comments are provided as follows:

1. The documents provided make reference to the existing groundwater monitoring program but does not provide an evaluation of that program or make an affirmation of the adequacy of the existing well network and sampling requirements. Please provide a detailed evaluation of the groundwater monitoring program and its adequacy to detect potential contaminant releases. Insofar as the on-site existing solid waste disposal unit has contributed to groundwater degradation that was not detected by the existing monitoring wells, it is appropriate that the adequacy of the existing site wide groundwater monitoring system be evaluated. Revisions to the groundwater monitoring system may be required.

CDP/RSR/



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
NORTHEAST DISTRICT
7825 BAYMEADOWS WAY, SUITE B200
JACKSONVILLE, FL 32256-7590

Interoffice Memorandum

TO: Mrs. Ann Seiler
Siting Coordination Office

THROUGH: James R. Maher, P.E.
SLERP Administrator

FROM: Junhong Shi, P.E.
Wastewater and Stormwater Permitting

DATE: May 1, 2006

SUBJECT: RAI for Stormwater Co-Review
Seminole Generating Station, Putnam County
Unit 3 Project Power Plant Siting
Application No. PA 78-10A2

This office has reviewed Section 10.9 Stormwater Management Calculations of the application and found that following additional information may necessary for a complete evaluation of the application:

1. It appears that information provided in Table 10.9.0-1 are not consistent with the information provided in Wet Detention Pond Design Notes and Calculations. Please verify and provide updated information.
2. Rule 40C-42.026(4)(b) requires that outfall structures shall bleed down one-half of treatment volume with 24 to 30 hours. Design calculations of the proposed stormwater management system indicate that all wet detention ponds will recover one-half of the treatment volume in 48 hours. Please verify and revise each orifice design.
3. Please explain how seasonal high ground water elevations and average ground water elevations are determined. Please provide geotechnical report(s) with soil borings conducted at each proposed pond and swale location. At minimum, the report(s) shall include soil profiles and estimated seasonal high ground water elevations. For swales, site specific permeability at proposed swale locations shall also be provided.

4. For each pond, please provide a plan view, a typical cross section and control structure details. These drawings shall provide information of pond dimensions at top and bottom, pond elevations at top and bottom, weir and orifice elevations and pond slopes at various depths.
5. For each swale, please provide a plan view, a typical cross section. These drawings shall provide information of swale dimensions at top and bottom, swale elevations at top and bottom, swale slopes and elevations of 12" culverts. The invert elevation of each culvert shall be high enough so that treatment volume will be maintained in each swale.
6. Please provide Tc calculations for all basins to support ponds and swales design.
7. Will skimmers be provided for all ponds and swales? Please indicate each of them on drawing.
8. Please provide a plan of best management practices for erosion and sediment control during construction.
9. The design report provides two stage-storage tables for Pond #1. It appears that pond size inputted into computer modeling is larger than pond size used for determine treatment volume. Please explain and indicate the final pond design.
10. For Pond #4, please clarify impervious area at pre-development. Design Summary indicates 15% of the total basin area. But modeling input indicates 50%.
11. Will depths of swale #1, 2, 3 and 4 be 2.0 feet, swale #5 be 2.6 feet and swale #6 be 2.4 feet?
12. 10.9.1 Stormwater Management and Calculation indicates that area within the coal pile railroad loop and area of landfill/FGD effluent processing are not included within the Unit 3 stormwater management system because runoff from various portions of these basins which are impacted by the construction or operation of Unit 3 are reused. Please provide more information regarding location and acreage of the impacted areas, runoff collection and reuse.

Seiler, Ann
From: Martin, Robert L.
Sent: Friday, May 05, 2006 10:53 AM
To: Seiler, Ann; Oven, Hamilton
Cc: Davis, John; Cordova, Ed; Shi, Junhong
Subject: Seminole Electric Cooperative - Ground Water Comments for Site Certification Application No. PA 78-10A2

With regard to IW ground water monitoring issues, I have reviewed the subject application for the proposed addition of Unit 3. Please excuse the delay in getting my review to your office, but I was almost overlooked, and wasn't aware of the application until 5/2. I have the following questions and comments to include in the upcoming sufficiency response:

C 1) Once the facility eliminates the wastewater discharge(s) into the three percolation ponds, the ponds will need to be closed out. A condition can be included in the modified Site Certification that requires submittal of a pond closure plan 90 days prior to eliminating the wastewater discharge to these ponds.

2) Based on potentially known contamination sources, the current ground water monitoring plan will be modified to include the following additional parameters at the indicated frequencies and well locations: for the four monitor wells that are sampled quarterly, combined nitrite + nitrate, vanadium, and turbidity. For the five monitor wells that are monitored annually, the above mentioned parameters, total organic carbon (TOC), and total organic halogens (TOH). TOC and TOH will be included as annual parameters in the four wells that are sampled quarterly, also. After discussions with the plant staff, it was determined that there are no sodium chemicals used in the process, and monitoring will not be required.

C 3) At some point in time after the facility eliminates the waste discharge(s) into the three percolation ponds, the Department may allow a reduction in the ground water monitoring requirements for the industrial wastewater areas. Please provide a proposal indicating appropriate reductions for ground water monitoring after elimination of the percolation pond system. It should be noted that continued monitoring will be required for other potential sources of contamination at the facility. A condition can be included in the modified Site Certification that indicates separate monitoring requirements for before and after the ponds are eliminated.

4) A updated monitor well location map, drawn to scale, and in reference to the percolation ponds, landfill areas, property lines, roads, buildings, wetlands, water bodies, etc. is requested.

5) Since the facility has it's own on-site staff that conducts monitoring of the wells, please clarify that the sampling is conducted in accordance with today's DEP Standard Operation Procedure Manual for Field Sampling. This should include a brief summary of experienced personnel that are trained in sampling monitor wells, field\sampling equipment used, purge volumes and techniques, field measurements that are tested, decontamination procedures.

6) In Section 5.2.1, it is referenced that contact stormwater is discharged into an equalization basin. Please clarify if this basin is lined, or unlined, and the type of liner.

Rob Martin, P.E.

Professional Geologist

FL Department of Environmental Protection

Water Facilities\Ground Water Section, Room B-213

7825 Baymeadows Way, Suite B200

Jacksonville, Florida 32256-7590

Email: Robert.L.Martin@dep.state.fl.us

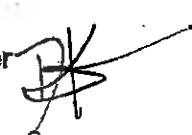
(904) 807-3341, SC 804-3341, Fax 448-4366

Memorandum

Florida Department of
Environmental Protection

TO: Hamilton Owen, P.E. Administrator
Office Siting Coordination

THROUGH: Jan Mandrup-Poulsen, ^{ME} Environmental Administrator
Watershed Assessment Section

FROM: Douglas Gilbert, Environmental Manager 
Watershed Assessment Section

DATE: April 20, 2006

SUBJECT: Seminole Electric, FL0036498; Putnam County, WBID 2213L, Group 2: Site Certification for Unit 3 proposed mixing zones for mercury, temperature, specific conductance, copper, iron, oil and grease, cyanide, selenium, cadmium, and lead.

RECEIVED

APR 21 2006

Florida Energy Office

We have reviewed the mixing zone components of the March, 2006 submittal by SECI and have the following comments and concerns.

General Comments and Concerns:

The following proposed changes to the SECI Putnam facility will result in significant changes to the effluent characteristics.

1. The annual average daily flow will increase from ~5.62 mgd to ~8.598 mgd.
2. A new zero liquid discharge system to remove dissolved solids from wastewater (units 1, 2, & 3) will be installed.
3. All existing process wastewater discharged to the river from units 1&2 and from the proposed unit 3 will be eliminated. The only discharge will be from units 1, 2, 3 cooling water blowdown.

The outfall will be modified to increase the size of the discharge port from the current 12 inches to 16 inches in diameter.

At this point, there are three different sets of effluent limits and mixing zones related to this facility. To keep track of the changes between permits, we have summarized these differences. Table 1 contains the effluent limits, ambient criteria, and mixing zones in the permit that is currently in effect (current permit). This permit expired in January 2005 and has been administratively continued pending adoption of a nutrient TMDL and the allocation of nutrient loadings to the NPDES facilities discharging into this section of the St. Johns River. The second set are the ambient criteria, effluent limitations, and mixing zones within the draft permit for Units 1 and 2 that will be issued once the TMDL issues are resolved (Table 2). The third set of ambient criteria, effluent limits, and mixing zones are those proposed by the facility for the Site Certification of Unit 3 (Table 3). These proposed limits and mixing zones are a result of changes in the ambient condition and changes in the effluent characteristics brought about by eliminating waste streams, adding treatment, adding Unit 3, and increasing the discharge flow.

We believe tracking these changes is important because there are apparent trends for several of the metals that indicate the available dilution is decreasing over time. The criterion for mercury is 0.012 ug/L, while the 95th percentile of the ambient data (used as worst-case ambient for mixing zones) is 0.010 ug/L. These data demonstrate that an additional increase in the worst-case ambient concentration for mercury of only 0.002 ug/L would result in the DEP denying any request for a mercury mixing zone (or renewal). This also supports the need to continue frequent (monthly) ambient monitoring for the metals for which mixing zones have been granted. Additionally, we continue to have reservations concerning the mercury mixing zone at this facility. Mercury may pose a serious danger to human and wildlife health through bioaccumulation in fish and shellfish that can be consumed by humans and wildlife.

Table 1
 Mixing Zones for Permit that expired January 2005 (units 1&2)
 Flow not known

Parameter	Criterion Ambient *	Effluent Limit *	Mixing zone size Meters ²
Cyanide	5.2	19.6	108
Iron	1.0 (mg/L)	2.33 (mg/L)	15
Mercury	0.012	0.20	36,277
Copper	17.6	295.0	36,949
Selenium	5.0	11.7	7
Zinc	157.0	419.0	29
Oil&grease	5.0 (mg/L)	7.68 (mg/L)	23
Specific Conductivity	1,879 (umhos/cm)	8,653 (umhos/cm)	170
Temperature		98.9 F	39

* ug/L unless otherwise indicated

Table 2
Mixing Zones in current Draft Permit (units 1&2)
Flow = 5.62 mgd AADF
Changes are noted in red and italics

Parameter	Criterion Ambient *	Effluent Limit *	Mixing zone size Meters ²
Cyanide	5.2	19.6	173
Iron	1.0 (mg/L)	1.51 (mg/L)	3.4
Mercury	0.012	0.09	67,323
Copper	17.6	139.0	253
Selenium	5.0	11.7	19.3
Zinc	157.0	Eliminated	
Oil&grease	5.0 (mg/L)	Eliminated	
Specific Conductivity	1,879 (umhos/cm)	8,653 (umhos/cm)	170
Temperature		98.9 F	6.9

* ug/L unless otherwise indicated

Table 3
Mixing zone Proposed for Units 1, 2, &3
Based on Administrative Continued Permit
Flow = 8.598 mgd

Parameter	Criterion Ambient *	Effluent Limit *	Mixing zone size Meters ²	Applicant Required Dilution (D)	CORMIX Available Dilution (S)	Ambient worst case (ug/L)
Cyanide	5.2	9.1	12.8	1.5:1	2.5	2.6
Iron	1.0 (mg/L)	1.5 (mg/L)	5.9	0.9:1	1.9	0.43 (mg/L)
Mercury	0.012	0.035	1,022	13.29:1	14.29	0.010
Copper	15.1	17.5	1.3	0.2:1	1.2	5.0
Selenium	5.0	8.75	12.8	1.5:1	2.5	2.5
Zinc	193.0	Eliminated				
Oil&grease	5.0 (mg/L)	10.8 (mg/L)	42	3.0:1	4	3.08 (mg/L)
Specific Conductivity	1,991 (umhos/cm)	4,645 (umhos/cm)	73	4.0:1	5	1,327 (umhos/cm)
Temperature		98.9 F	120	5.39:1	6.39	
Cadmium	1.765	3.5	27	2.3:1	3.3	1.0
Lead	6.5	11.4	12.79	1.5:1	2.5	3.26

* ug/L unless otherwise indicated

Beginning with Table 2, constituents in red italics are those that are different from the version of the permit used for the Site Certification package in Table 1. Examining Tables 1 and 2 shows that the effluent limits for temperature, cyanide, selenium, and specific conductance were the same. Effluent concentrations for zinc and oil & grease were always in compliance with the ambient criterion, so mixing zones for those constituents were eliminated at the request of the applicant. A combination of improvements at the facility and in the lab analysis methods resulted in the effluent concentrations for mercury, copper, and iron being reduced consistently enough to warrant reductions in the effluent limits. The addition of Unit 3 is not expected to result in any increase or decrease of the iron concentration. The addition of Unit 3 is expected to result in reductions of the effluent concentrations for cyanide (by a factor of 2.1), mercury (by 2.6), selenium (by 1.3), copper (by 7.9), and specific conductance (by 1.8). The addition of Unit 3 is expected to result in increases of the effluent concentration for oil and grease (increase by a factor of 2.1), cadmium (by 1.9), and lead (by 1.7). These increases for oil and grease, cadmium, and lead are expected to result in these constituents exceeding their respective criterion concentrations.

As the river is the source of the cooling water, the effluent characteristics will change based on changes in river water quality, as well as changes within the facility. The proposed effluent concentrations appear to be determined by multiplying the 95th percentile of the current influent (river) monitoring data by the number of concentration cycles (3.5) for the cooling tower. Considering that Unit 3 may not be completed until 2012, the characteristics of the effluent may be different from those of today. The applicant should be made aware that final approval of any mixing zones in the NPDES permit will be made at the time the permit revisions occur and will be based on the characteristics of the river and the effluent at that time.

Questions for the Applicant:

The applicant used the CORMIX model to calculate the dilution characteristics for the requested mixing zones. Based on the derivation of dilution in our Attachment 1, the dilution factors in Table 10.1.2-4 appear to be calculated as dilution (D) instead of (S) as used by CORMIX. All CORMIX concentrations are expressed as 'excess' concentrations after the ambient concentration has been subtracted from both the effluent and the criterion concentrations. Dilution (S) in CORMIX is then the ratio of the excess concentration at the discharge port (after subtracting out the ambient concentration) to the 'diluted' concentration at any downstream location. To correctly match up predicted dilution to required dilution, the ambient concentrations must be subtracted from both the effluent and criterion concentrations in the calculation of required dilution. This is important, even when modeling as a percent reduction, as the predicted dilution (S) in the model assumes the background ambient concentration has been subtracted out. It appears to us that the applicant used the equation $[(EC-C)/(C-BC)]$ from our Attachment 1 for the required dilution. It is our understanding that to match up with the CORMIX dilution (S) the equation $[(EC-BC)/(C-BC)]$ should be used to calculate the required dilution. This will have the effect of adding 1 to each of the required dilutions in Table 10.1.2-4 and increasing the size of the mixing zones. Please have the applicant address this concern.

The water quality criterion for specific conductance is 1275 umhos or 50 percent above background, whichever is greater. Please have the applicant explain the derivation of the specific conductance criterion of 1,990. umhos/cm that was used in the modeling. Include all calculations and assumptions.

Please have the applicant provide the details for how the worst-case criteria were developed for each of the hardness dependent metals. Include all calculations and assumptions. In previous renewal cycles we have provided the applicant with the following recommendations. Worst-case ambient criteria and effluent concentrations for hardness dependent metals should be based on the lowest hardness (worst case) for both effluent and receiving water. For mixing zones it should be the lowest 5th percentile hardness from either the receiving water or the effluent and not the average. Alternatively, it would be more accurate to use actual paired hardness and metal data. By this we mean, use the actual hardness (if available) from the same station/date/time as the metal sample to calculate the criterion value and compare it to the metal concentration of the same sample.

The CORMIX model switches between predicting flux-average dilution and centerline dilution depending on which module is in use. The output clearly indicates whether the prediction of dilution is centerline or flux-average. The CORMIX manual provides guidance for converting between the two values. Guidance previously provided to the applicant clearly states that the DEP requires the required dilution be met along the centerline as opposed to using the flux-average. Please have the applicant address this concern.

The applicant states that if all samples from the river were less than the detection limit then the constituent was assumed absent. We have previously provided the applicant with the rule requirements (Rule 62-4.246, FAC) and guidance for handling this situation. Rule 62-4.246(11), FAC, allows for the use of zero only when there is no evidence that the pollutant is present in the ambient water. For all naturally occurring constituents, the assumption made by the applicant could be a violation of Rule 62-4.246(8), FAC, which requires the use of one half the MDL or the criterion whichever is less when there is evidence that the pollutant is present. This is particularly important as the river is the source of the water used by the facility. Therefore, all naturally occurring constituents of the St. Johns River should be believed present. Data less than DEP approved detection limits would indicate compliance with the criteria, but not the absence of the constituent. Please have the applicant address this concern.

The applicant notes that no toxicity data are available that are representative of the proposed discharge. However, it is our understanding that the current discharge is not in compliance with the acute toxicity criterion. As such, no mixing zones other than thermal can be implemented in a permit without a demonstration of compliance with the acute toxicity criterion. This is in accordance with Rule 62-4.244, FAC requirements that all waters of the state, (even inside mixing zones) comply with the minimum criteria for surface waters. Please have the applicant address this concern.

According to Table 10.1.2-3, the ambient data used to determine worst-case ambient concentrations were in an ECT report dated 2005 and the effluent concentrations were based on data reported by ECT in 2004 (Table 10.1.2-4). As Unit 3 may not be online until 2015, any conclusions reached by DEP at this time regarding these proposed mixing zones and effluent limits will need to be re-evaluated by including the most recent data collected for the river and the facility at the time a modification to the NPDES permit is requested for Unit 3. Please have the applicant make note of this concern.

Seminole Electric, FL0036498, Putnam County, WBID 2213L,
Group 2: Site Certification for Unit 3 proposed mixing zones
April 20, 2006
Page Six

During the most recent renewal process for the current permit, no mixing zones were sought for oil and grease, cadmium, zinc, or lead as these constituents had not exceeded their respective criterion for several permit cycles. Additionally, under the proposal for Unit 3, all other metal concentrations are expected to stay the same or to decrease due to the removal of dissolved solids. Please have the applicant explain why oil and grease will become a constituent of concern when no mixing zone was requested for the most recent renewal. Also, have the applicant explain why the concentrations of cadmium and lead are expected to increase while the concentrations for all other metals will either remain the same or decrease.

The applicant explains that the mixing zones are sized based on the 'composited' results from the six different scenarios run with the CORMIX model. The results of these analyses are presented in Table 10.1.2-5, as distance parallel to shore and distance perpendicular to the shore. The area calculated from these distances is double the area of the requested mixing zones. Please have the applicant provided a detailed explanation of how the mixing zones were sized and why the requested mixing zones are smaller than the area calculated from the dimensions of the 'composited' model results.

The applicant provided the DEP with an electronic copy of the report in PDF format. The DEP was not able to search or extract information (data) from this PDF file. Therefore, we could not verify the determination of worst-case effluent and ambient conditions. Please have the applicant provide all ambient and effluent data used in the application in a usable electronic form such as EXCEL or ACCESS.

Due to our concerns related to appropriate use of the calculated required dilutions and concerns related to the development of appropriate worst-case criteria for specific conductance and the hardness-based metals, we did not run the CORMIX model to verify the size of mixing zones and the model results. Once these issues related to development of worst-case conditions for both the effluent and the ambient concentrations are resolved, we will review the actual model runs.

This staff assessment is preliminary and designed to assist in the review of the application prior to final agency action. The comments provided herein are not the final position of the Department and may be subject to revision pursuant to additional information and further review.

Please contact Douglas Gilbert at Suncom 245-8450 if you have any questions regarding our comments.

DG/was/dg

Attachment

ec: Wayne Magley w/att
ec: Tamara Blyden w/att
ec: Candice Burger w/att
ec: Douglas Gilbert w/att
ec: Ann Seiler w/att
ec: Al Hubbard w/att

Calculation of Required and Available Dilution

Consider a simple mass balance where the mass of effluent plus the mass of background equals the total mass of mixture.

$$V_{EC} * (EC) + V_{BC} * (BC) = (V_{EC} + V_{BC}) * C$$

Where:

V_{EC} = volume per unit time of effluent
 EC = effluent concentration
 BC = background concentration
 V_{BC} = volume per unit time of background
 C = concentration of "completely mixed" waters

For mixing zones this is the criterion value applied to the edge of the mixing zone.

Then:

$$V_{EC} * (EC - C) + V_{BC} * (BC - C) = 0$$

Divide through by V_{EC} ,

$$(EC - C) + V_{BC}/V_{EC} * (BC - C) = 0$$

Dilution (D) = V_{BC}/V_{EC}

Substitution:

$$(EC - C) + D * (BC - C) = 0$$

Subtract $D(BC - C)$ from both sides:

$$(EC - C) = -D * (BC - C)$$

Multiply both sides by $-1/(BC - C)$

$$-1/(BC - C) * (EC - C) = D$$

Multiply $-1/(BC - C)$ by $-1/-1$

$$1/(-BC + C) * (EC - C) = D$$

or

$$D = (EC - C)/(C - BC)$$

From Fischer's (using our terms):

$$D = ((EC - BC) / (C - BC)) - 1 \text{ which } = (EC - C) / (C - BC)$$

From Fischer's S = :

$$S = (EC - BC) / (C - BC)$$

(See how $D = S - 1$)

This document is the opinion of Douglas Gilbert, it is used for training and does not represent Department policy

We use S and D as follows:

One, to determine how much dilution would be available in the stream at complete mix (S).
Second, to determine how many unit volumes of receiving water would have to be mixed with each unit volume of effluent so that the criterion value would not be exceeded at complete mix (D). Because we can not assume that complete mix even occurs, we use models or other means to represent the actual instream mixing characteristics.

Most models predict S; the mixed downstream dilution, where dilution would be some single number, say 4. The way to read this is that at that point downstream of the outfall, there are a total of 4 unit volumes of mixed water. D, or (S-1) expresses the relationship, how many unit volumes of ambient water are present for each unit volume of effluent. In this case, S-1 equals 3. So 3 unit volumes of ambient for each unit volume of effluent. The way you may be used to seeing this written is 3:1.

For example, given;

$$EC = 19$$

$$BC = 7$$

$$C = 10$$

the downstream required dilution S would be:

$$S = (EC - BC) / (C - BC) = (19 - 7) / (10 - 7) = 12/3 = 4$$

So the required upstream dilution D would be either

$$D = (EC - C) / (C - BC) = (19 - 10) / (10 - 7) = 9/3 = 3 \text{ or more simply } (S-1, 4-1) \text{ and would be expressed as } 3:1.$$



St. Johns River Water Management District

Kirby B. Green III, Executive Director • David W. Fisk, Assistant Executive Director

4049 Reid Street • P.O. Box 1429 • Palatka, FL 32178-1429 • (386) 329-4500
On the Internet at www.sjrwmd.com.

DEPARTMENT OF
ENVIRONMENTAL PROTECTION

April 27, 2006

MAY 01 2006

SITING COORDINATION

Hamilton S. Oven, Administrator
DEP Siting Coordination Office
Twin Towers Office Building
2600 Blair Stone Road, MS 48
Tallahassee, FL 32399-2400

**RE: Seminole Electric Cooperative Seminole Generating Station Unit 3,
Power Plant Siting Application No. PA78-10A2;
DOAH Case No. 06-0929EPP; DEP File No. 06-0780; FOR No. 2006-38**

Dear Mr. Oven:

Pursuant to Section 403.5253, Florida Statutes, the St. Johns River Water Management District transmits its requests for additional information to you. See the attached memo from Todd Eller. The information requested must be provided in order to render this application sufficient to enable the District to carry out its statutory review responsibilities.

Should you have any questions about the memo, please contact Mr. Eller directly at 386-329-4210.

Sincerely,

Vance Kidder
Assistant General Counsel
Office of General Counsel

VK/kp

cc: Todd Eller, PDS/Palatka

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MEMORANDUM

TO: Vance Kidder

FROM: Todd Eller

RE: Seminole Electric Cooperative, Inc.
Power Plant Certification No. PA78-10
Site Certification Application
Consumptive Use Review – questions

DATE: April 27, 2006

1. The application requests 33.2 million gallons per day (MGD) or 12,136 million gallons per year (MGY) of surface water withdrawal from the St. Johns River for various uses at the site. The application also indicates 8.6 mgd or 3,138 mgy of surface water returned to the St. Johns River. This results in a net loss of 24.6 mgd or 8,979 mgy of surface water from the St. Johns River. Please provide reasonable assurance that the proposed surface water withdrawals from the St. Johns River will not cause adverse impacts to the River and associated wetlands. Please provide documentation that the proposed withdrawals from the St. Johns River will not harm individuals or populations of the endangered West Indian manatee (*Trichechus manatus*). [Paragraph 10.3; (d) A.H.]
2. Please submit a map delineating all the existing and proposed surface water pumps for this project. This map must be a USGS quad map that includes the project's property boundary. Please provide the following information for each of these pumps: pump number, pump capacity (gpm), operation in hours per week, status (date if proposed), name of source, and type of use. [Paragraph 10.3; (a) (b) (c) (d) A.H.]
3. The District requires the most efficient use of water for each process. The application indicates a request for 33.2 mgd of surface water from the St. Johns River for various uses (processes) at the site. Please substantiate the amount of surface water requested by providing the methodology

used for determining the amount of water necessary for each use. This shall include an explanation of the water requirements for each process by providing a detailed description of each process with an emphasis on water use requirements. [Paragraph 10.3; (a) (b) A.H.]

4. Please provide a Water Conservation Plan for all processes that use surface water at this site. [Paragraph 10.3; (e) A.H.]
5. The application states that numerous temporary dewatering activities conducted at various locations throughout the site will last approximately 16 months. Please answer the following questions concerning these dewatering activities:
 - (a) Please describe what procedures you propose to implement at the site to ensure that dewatering will not cause or contribute to flood damage. This should include the proposed rate and duration of water pumped for dewatering.
 - (b) Please provide a map delineating the portions of the property where the dewatering activities will take place, and the extent of the proposed excavations, both vertically and laterally. Also include locations and dimensions of the proposed onsite stormwater detention ponds that are proposed to receive dewatering discharges.
 - (c) Please provide the proposed locations and capacities (gpm) of proposed dewatering pump(s).
 - (d) Please provide a detailed description of turbidity treatment and erosion control measures at the discharge point(s). Please fully describe the means to be taken to ensure there will not be turbid discharge or erosion at or downstream of the discharge point(s). Will there be use of silt screens, bales, socks, and/or discharge of water through a culvert before reaching receiving bodies? [
 - (e) Please submit a map showing the extent of the projected drawdown in the surficial aquifer due to dewatering. Please be aware that based on the projected drawdown and the location of wetland areas and existing legal users in relation to the withdrawal point(s), a demonstration that drawdowns due to dewatering will not result in adverse impacts to wetlands or existing legal users is required. [Paragraph 10.3; (d) (i) (k) A.H.]



DEPARTMENT OF
ENVIRONMENTAL PROTECTION

(MAY 02 2006)

Florida Department of Transportation

SITING COORDINATION

JEB BUSH
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

DENVER J. STUTLER, JR.
SECRETARY

May 1, 2006

Mr. Hamilton S. Oven, P.E., Administrator
Siting Coordination Office
Florida Energy Office
Department of Environmental Protection
2600 Blair Stone Road, MS 48
Tallahassee, Florida 32399-2400

Re: Seminole Electric Cooperative Seminole Generating Station Unit 3 Power Plant Siting
Application
No. PA 78-10A2
DOAH Case No. 06-0929EPP

Dear Mr. Oven:

The Florida Department of Transportation has reviewed the subject application and has found the following additional transportation related information is needed:

An engineering diagram of the access of the Unit 3 Project Entrance Road to U.S. 17.

A description with accompanying engineering diagrams of proposed improvements necessary at the intersection of the Unit 3 Project entrance Road and U.S. 17 to assure the safety of vehicles (especially trucks) turning in and out of the site, including all exclusive auxiliary lanes, rail crossing and water pipeline improvements in the vicinity of the intersection.

Plans for a signalization warrant study.

Identification of any new facilities with a height of 200 feet or more.

A description with accompanying engineering diagrams of any stormwater ponds required as a result of widening the roads at this intersection.

If you have any questions, please call me at 414-5387 or Sandra Whitmire, Siting Coordinator, at 414-4812. Thank you.

Sincerely,

Sheauching Yu
Assistant General Counsel

cc: James Alves, Hopping, Green & Sams, P.A.; Chris O'Gara, District 2; Sandra Whitmire

FLORIDA

DIVISION

Mr. Scott Osbourn
Golder Associates, Inc.
5100 West Lemon Street, Suite 114
Tampa, Florida 33609

Re: DHR No.: 2006-2386
Received by DHR: March 31, 2006
Seminole Electric Cooperative, Inc.
Seminole Generating Station Unit 3
Palatka, Putnam County

For Report

+

Need a
Condition

DEPARTMENT OF
ENVIRONMENTAL PROTECTION

MAY 03 2006

PLANNING COORDINATION

May 2, 2006

Dear Mr. Osbourn:

Our office received and reviewed the referenced project in accordance with Chapters 267, 373, and 403, *Florida Statutes*, Florida's Coastal Management Program, and implementing state regulations, for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places*, or otherwise of historical, architectural or archaeological value. The State Historic Preservation Officer is to advise and assist state and federal agencies when identifying historic properties, assessing effects upon them, and considering alternatives to avoid or minimize adverse effects.

A review of the Florida Master Site File and our records indicates that several historic homestead sites (8PU114 – 8PU116) are located within the project parcel. Based on available information, 8PU114 and 8PU116 are outside of the proposed project area, but 8PU115 may be located within the proposed "site laydown area". It is the opinion of this agency that Seminole Electric Cooperative, Inc. should avoid site 8PU115 in all project activities, including staging areas. Contingent upon the avoidance of site 8PU115 and based on available information, the proposed project should have no effect on historic properties.

If there are any questions concerning our comments or recommendations, please contact April Westerman, Historic Sites Specialist, by phone at (850) 245-6333, or by electronic mail at amwesterman@dos.state.fl.us. We appreciate your continued interest in protecting Florida's historic properties.

Sincerely,



Frederick P. Gaske, Director, and
State Historic Preservation Officer

Xc: Hamilton S. Oven, DEP

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office
(850) 245-6300 • FAX: 245-6436

☐ Archaeological Research
(850) 245-6444 • FAX: 245-6452

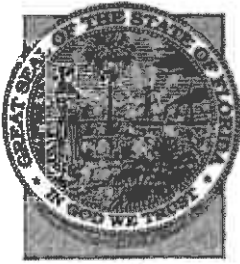
☒ Historic Preservation
(850) 245-6333 • FAX: 245-6437

☐ Historical Museums
(850) 245-6400 • FAX: 245-6433

☐ Southeast Regional Office
(954) 467-4990 • FAX: 467-4991

☐ Northeast Regional Office
(904) 825-5045 • FAX: 825-5044

☐ Central Florida Regional Office
(813) 272-3843 • FAX: 272-2340



Florida Department of Agriculture and Consumer Services
CHARLES H. BRONSON, Commissioner
The Capitol • Tallahassee, FL 32399-0800

Please Respond to:
Forest Resource Planning
& Support Services
3125 Conner Blvd., C23
Tallahassee, FL 32399

Mr. Hamilton Oven, P.E.
Administrator, Siting Coordination Office
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 48
Tallahassee, FL 32399-2400

Re: Seminole Electric Cooperative
Seminole Generating Station
Unit 3 Project Power Plant Siting
Application No. PA 78-10A2

Dear Mr. Oven:

The Florida Department of Agriculture & Consumer Services welcomes the opportunity to review the application for certification of the Seminole Electric Cooperative, Inc.'s Seminole Power Plant Unit 3 pursuant to the Florida Electrical Power Plant Siting Act. We anticipate completing our review by the established deadline(s).

To assist in our review, we would like to know from the applicant if a portion of the fuel used in the proposed power plant could be biomass? It is our understanding the Lakeland McIntosh Unit 3 can burn a small percent of municipal waste with the coal it uses. The use of biomass as an alternative fuel is worthy of consideration as the successful utilization of biomass may generate positive attention for efforts to use a renewable resource that may decrease impacts on air quality as well as alleviate some of the load stress current waste disposal sites may experience now and in the future. The production of crops for the purpose of generating biomass has the potential to become an important agricultural commodity that could significantly support rural economies.

If you have any questions you can call me at 850-414-0842 or at the mailing address listed above.

Sincerely,

Forrest Watson, Planner
Florida Division of Forestry



Florida Agriculture and Forest Products
\$62 Billion for Florida's Economy



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

4APT-APB

MEMORANDUM

To: Mike Halpin - Florida Department of Environmental Protection

From: Jim Little - U.S. Environmental Protection Agency (EPA), Region 4

Subj: Initial Comments on Permit Application for Seminole Electric Unit 3

Date: May 2, 2005

On behalf of EPA Region 4, this memo provides my initial comments on the prevention of significant deterioration permit application for the addition of a new coal-fired unit (Unit 3) at the Seminole Electric Cooperative generating station near Palatka, Florida. Although these comments do not address the air quality modeling analysis for the project, EPA Region 4 has been in contact with the Florida Department of Environmental Protection about the modeling analysis.

The following acronyms and abbreviations are used in this memo in addition to commonly understood abbreviations such as "lb" for pound and "MMBtu" for million British thermal units:

Terms

BACT - best available control technology
CEMS - continuous emissions monitoring system
ESP - electrostatic precipitator
EUSGU - electric utility steam generating unit
FGD - flue gas desulfurization
IGCC - integrated gasification combined cycle
PC - pulverized coal
PSD - prevention of significant deterioration
SAAQS - state ambient air quality standards
SCR - selective catalytic reduction
SECI - Seminole Electric Cooperative, Inc.
ZLD - zero liquid discharge

Pollutants

CO - carbon monoxide

NO_x - nitrogen oxides

PM - particulate matter

PM₁₀ - particulate matter with a diameter of 10 micrometers or less

SAM - sulfuric acid mist

SO₂ - sulfur dioxide

VOC - volatile organic compounds

The words "you" and "your" in the comments below mean the Florida Department of Environmental Protection.

1. Design Information - The PSD permit application itself contains very few design details for project equipment components (boiler manufacturer and design specifications, emissions control equipment manufacturers and design specifications, etc.). I hope that additional details are provided in the other documents that comprise the total site certification package.
2. Creditable Emissions Decreases for Netting - I have the following comments on the netting analysis for the project:
 - a. A critical component of the proposed project is the use of emissions decreases that allow the project to net out of PSD review for SO₂, NO_x, and SAM emissions. You of course need to check the quantitative netting calculations. You also need to decide if emissions controls being applied for other regulatory purposes such as compliance with the Clean Air Interstate Rule are acceptable as a creditable emissions decrease for PSD netting purposes.
 - b. Table 3-3, PSD Netting Analysis, contains this footnote: "Units 1 and 2 baseline actual emissions are based on Tables B-4E through B-4S, supplied with Units 1 and 2 application." For a complete public record of the Unit 3 permitting process, the netting tables need to be included with the Unit 3 project docket and not merely cited by reference to another application.
 - c. As you review the PSD netting analysis for the proposed Unit 3 project, please keep in mind a regulatory requirement that is often overlooked. The requirement is found in your definition of "net emissions increase." 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."
3. Particulate Matter BACT - SECI's proposed PM/PM₁₀ BACT emissions rate is 0.015 lb/MMBtu. I am not sure if this rate is for filterable particles only or for both

filterables and condensibles. I recommend that any permit issued for this project include a filterables emissions limit for which compliance will be assessed using a PM CEMS, and a total PM₁₀ emissions limit for which compliance will be assessed using annual Method 201A/Method 202 tests or some comparable test method that accounts for condensibles. I understand that PM CEMS equipment may exist for measurement of both filterable and condensible particles, but I do not have any details on this.

4. CO and VOC BACT - SECI comments on page 52 of the draft application that the proposed CO and VOC BACT emissions rates are "within the range of emission rates recently established as BACT." For a proposed new coal-fired EUSGU with the latest design features, justification is needed as to why the proposed BACT emissions rates are not at the low end of the range of previous BACT determinations or even less.
5. Petroleum Coke - SECI has based its application on a fuel mix containing up to 30 percent petroleum coke (petcoke). Any permit you issue for this project should contain a permit condition specifying the maximum allowed petcoke percentage and a method of tracking this percentage. (Also see additional comment about petcoke in next item.)
6. Sulfur Dioxide - Although the netting analysis appears to exempt the project from PSD review (and BACT) for SO₂ emissions, methods for minimizing SO₂ emissions should still be given careful consideration. I have the following comments on control of SO₂ emissions:
 - a. SECI describes four types of bituminous coal with similar heating values ranging in sulfur content from 0.1 to 3.8 percent by weight. A variability factor of 38 ($3.8 \div 0.1$) in sulfur content is considerably more than is typical for a permit application. If you decide to issue a permit without further selection of a specific coal type on SECI's part, the permit should contain variable SO₂ limits pegged to coal type and coal sulfur content.
 - b. Whatever coal type is selected, SECI will have to import coal from long distances. SECI's preference for a bituminous coal appears to be based in part on the convenience of using a coal type that is similar to the coal type currently burned in Units 1 and 2. I recommend that you ask SECI for an explanation as to why exclusive use of low-sulfur Western coal (such as Powder River Basin coal) is not an option.
 - c. SECI proposes to burn a fuel blend with up to 30 percent petroleum coke (petcoke) in Unit 3. The stated petcoke sulfur content is as high as 6.8 percent by weight. If SECI can not assure that the petcoke sulfur content will seldom be at this high level, you should give consideration to restricting the fuel blend to less than 30 percent petcoke content.

- d. SECI plans to use No. 2 distillate fuel oil with a sulfur content of 0.5 percent by weight as fuel for an emergency generator and for three ZLD spray dryers. No. 2 fuel oil with much lower sulfur content than 0.5 percent is readily available now and will be even more so in the future. Unless SECI can show that the availability of a lower sulfur fuel oil is questionable or that the cost of lower sulfur fuel oil is prohibitively expensive, you should give consideration to prescribing that fuel oil sulfur content be on the order of 0.05 percent or less. (Incidentally, it is not clear to me from the PSD permit application why a ZLD design requiring combustion of millions of gallons of fuel oil per year is preferable to a liquid discharge design from an environmental and energy use standpoint.)
7. Nitrogen Oxides - The netting analysis appears to exempt the project from PSD review (and BACT) for NO_x emissions. Methods for minimizing NO_x emissions should still be given careful consideration, however. Specifically, the proposed NO_x emissions limit for Unit 3 of 0.07 lb/MMBtu is not representative of the emission rate that could be expected for a newly designed supercritical PC boiler firing bituminous coal. A recent example related to this point is the Louisville Gas & Electric (LG&E) Trimble County project in Kentucky. LG&E recently received a permit to construct a new PC supercritical bituminous coal-fired EUSGU at an existing power station. Although the project netted out of PSD review for NO_x, the NO_x emissions limit for the EUSGU is equivalent to an emissions rate of 0.05 lb/MMBtu.
8. Startup and Shutdown Conditions - Emissions from proposed new coal-fired EUSGU's during startup and shutdown conditions have been receiving increased attention. As a case in point, a number of recent coal-fired power plant projects have been opposed by environmental groups, and startup/shutdown issues have been among the concerns raised by these groups. If you issue a permit for Unit 3, the permit will need to include provisions on startup and shutdown. Some ideas on this point are as follows:
- a. The permit should contain an objective definition of what constitutes a condition of startup or shutdown so that emissions occurring during startup and shutdown can be identified separately from other emissions.
 - b. Since startup and shutdown events are part of normal operation for a utility boiler, you should give consideration to establishing numeric emissions limits for these events.
 - c. You might also consider a permit requirement that SECI provide a startup and shutdown emissions minimization manual by a date certain prior to start of commercial operation. Such a manual would include specific measures for minimization of emissions during startup and shutdown and not just a general statement that "good work and maintenance practices and manufacturer's recommendations" will be followed. For example, the manual would specify the

time at which control methods (SCR, ESP, FGD) must be activated following the initiation of a startup.

9. IGCC Discussion - On page 56 of the permit application SECI comments on IGCC technology with reference to the letter from Stephen Page of EPA dated December 13, 2005. Please consider the following two points concerning the EPA letter: (1) Mr. Page does not say in the letter that a state reviewing authority is prohibited from considering IGCC in a BACT evaluation for a PSD permit. (2) Although Mr. Page states an opinion that EPA would not require consideration of IGCC as a BACT option, he points out that consideration of IGCC might be appropriate with respect to section 165(a)(2) of the Clean Air Act specifying that opportunity be afforded for public comment on "alternatives" to a proposed project.
10. Mercury - The method of controlling mercury emissions from Unit 3 proposed by SECI is a co-benefit approach. That is, mercury emissions will be reduced as a co-benefit of controls installed for other pollutants. I recommend that consideration also be given to use of a specific add-on mercury control method. If you decide to issue a permit for this project without specific mercury controls, I further recommend that the permit specify a project layout that will accommodate future installation of a specific mercury control method.
11. State Ambient Air Quality Standards - In addition to national ambient air quality standards and PSD increments, you have state ambient air quality standards (SAAQS) for SO₂. Please verify that the information in the PSD permit application is adequate for assuring compliance with the SO₂ SAAQS.
12. Emergency Generator - SECI states on page 12 of the application that "the emergency generator is an exempt emission unit and can be considered an insignificant activity for air permitting purposes." Just as a reminder, the concept of an "exempt emission unit" or an "insignificant activity" does not exist in PSD permitting rules. Any new or modified unit or activity that causes a net increase in emissions of a pollutant subject to PSD review should be assessed.