



United States Department of the Interior
NATIONAL PARK SERVICE



Everglades and Dry Tortugas National Parks
40001 State Road 9336
Homestead, Florida 33034

In Reply Refer to:

N3615

January 18, 2007

A.A. Linero, Program Administrator
Department for Environmental Protection
Permitting South Section
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RECEIVED

JAN 26 2007

BUREAU OF AIR REGULATION

Dear Mr. Linero:

We have reviewed the Florida Power & Light (FPL) Prevention of Significant Deterioration (PSD) permit application for the Glades Power Park (GPP) located in Glades County, Florida. The proposed GPP facility would be located approximately 113 kilometers north of Everglades National Park, a Class I air quality area administered by the National Park Service (NPS). The facility would also be located approximately 65 kilometers north of Big Cypress National Preserve and approximately 160 kilometers northwest of Biscayne National Park, both Class II areas administered by the NPS. The facility will be a 1,960 megawatt power plant consisting of two pulverized coal-fired boilers which will burn a blend of coal and petroleum coke. According to the FPL PSD permit application, the GPP facility will emit a total of 3,811 tons per year (TPY) of nitrogen oxide (NO_x), 3,049 TPY of sulfur dioxide (SO₂), 1,281 TPY of total particulate matter (PM), 1,022 TPY of particulate matter less than 10 microns (PM₁₀), 305 TPY of sulfuric acid mist (H₂SO₄), and 260 TPY of volatile organic compounds.

Based on our initial review of the GPP permit application, we find it does not include all of the information we need to assess potential impacts from GPP emissions on sensitive resources at Everglades National Park. We have the following comments concerning the permit application.

PSD Increment and Visibility Concerns

The air quality modeling files and the permit application we received on January 4, 2007, show that FPL based its visibility impacts and 3-hr and 24-hr increment consumption analyses on 30-day rolling average emission rates. FPL used emission rates of 696 lb/hr for SO₂, 870 lb/hr for NO_x, 226 lb/hr for speciated PM₁₀ and 69.6 lb/hr for H₂SO₄ in these analyses. These rates are only applicable for the annual increments and acid deposition impacts analyses. Therefore, FPL's visibility impacts analyses for Everglades National Park and its short-term Class I and Class II increment analyses (i.e., the 3-hour and 24-hour SO₂ and 24-hour PM₁₀ averaging periods) are incorrect. Thus, FPL should redo its short-term Class I and Class II

the level of emission control (BACT analysis) to similar facilities that do have appropriate short-term limits. We ask FPL to provide this information in its permit application.

Conclusion

We are concerned that emissions from the proposed GPP facility will cause or contribute to a change in the air quality in Everglades National Park. Specifically, the emissions from the GPP facility have the potential to impact air quality and cause visibility impairment in Everglades National Park. We are also concerned that emissions from the GPP facility have the potential to exacerbate methylmercury conditions and to affect threatened and endangered species.

We ask that you require FPL to redo the air quality modeling analyses and to provide the requested additional information on BACT before deeming the permit application complete. We also ask that you allow us sufficient time to review this and all other relevant information in accordance with the Federal Land Manager notification requirements in 40 CFR 51.307. With the requested information and analyses, we will be in a better position to assess the air quality impacts on sensitive resources at Everglades National Park.

Thank you for involving us in the review of GPP's PSD permit application. Please do not hesitate to contact Mr. Dee Morse of our Air Resources Division in Denver (303-969-2817) or me (305-242-7712) if you have any questions concerning the comments provided above.

Sincerely,



Dan B. Kimball
Superintendent



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blairstone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor
Jeff Kottkamp
Lt. Governor
Michael W. Sole
Secretary - Designee

January 18, 2007

SENT BY ELECTRONIC MAIL – RECEIVED RECEIPT REQUESTED

Mr. Randall R. LaBauve, Vice President
Environmental Services Department
Florida Power and Light Company (FPL)
700 Universe Avenue
Juno Beach, Florida 33408

Re: DEP File No. 0430017-001-AC (PSD-FL-385)
FPL Glades Power Park
Nominal 1,960 megawatt (MW) Solid Fuel-fired Power Plant

Dear Mr. LaBauve:

On December 19, 2006 we received your application for an Air Construction Permit pursuant to the Rules for the Prevention of Significant Deterioration (PSD Permit) to construct a solid fuel-fired power plant in the vicinity of Moore Haven, Glades County.

Pursuant to Rules 62-4.055, and 62-4.070 F.A.C., Permit Processing, the Department requests submittal of the additional information prior to processing the application. Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

1. Refer to the attached letter from the Federal Land Manager (Superintendent, Everglades and Dry Tortugas National Parks). The Department requires the same information as detailed therein. Also please document the contacts and consultations to-date about this project with the Vero Beach office of the U.S. Fish and Wildlife Service related to endangered species on site and in the environs of the proposed site.
2. General Electric and Conoco Phillips have described bituminous coal reference plants for Integrated Gasification and Combined Cycle (IGCC) units characterized by very low emissions. For example, the claimed emission values are 0.01 pounds per million Btu of heat input (lb/mmBtu) for sulfur dioxide (SO₂) and 0.02 lb/mmBtu for nitrogen oxides (NO_x). The assumptions for these cases are deep sulfur removal and selective catalytic reduction (SCR) to control emissions of SO₂ and NO_x. The provider's descriptions are available at:
www.gasification.org/Docs/2005_Papers/29KEEL.pdf and
www.iea-coal.org.uk/publishor/system/component_view.asp?LogDocId=81264&PhyDocId=5653

Please provide documentation of FPL's review of IGCC.

[Rule 62-210.200, F.A.C. (Definitions-BACT); Rule 62-212.400, F.A.C. (PSD and BACT)]

3. Are there future phases planned for the facility?
4. Very little information is provided regarding the characteristics of the air pollution control equipment in terms of vessel sizes, reagent use estimates, air to cloth ratios, electrostatic precipitator capacities (ESP fields), etc. Please update the information in the application with the most recent information available to FPL based on the present status of front end engineering design (FEED).
[Rule 62-210.070, F.A.C. (Standards for Issuing or Denying Permits)]
5. Please update the status of the mercury (Hg) control equipment design. Advise whether FPL will actually install another electrostatic precipitator (ESP) in front of the sorbent injection equipment and fabric filter. [Rule 62-070, F.A.C.]
6. Clarify the thermal cycle efficiency of the units given their designation as ultracritical pulverized coal units. The literature typically describes such technologies as capable of yielding efficiencies greater than 40 percent (%). Describe the basis for the efficiency estimate (e.g. net, higher heating value, semi-tropical conditions, etc.).
7. Include a mass balance calculation including a simplified process flow diagram depicting the approximate average Hg flows in and out of the process steps. The flows should include: Hg in the incoming fuel; the amount exiting via the ESP fly ash; the amount captured by sorbent injection and fabric filtration; the amount removed by the wet scrubber; and the amount exiting the stacks. Also describe any discharges via scrubber effluent to treatment or disposal.
8. According to the application, emissions of volatile organic compounds (VOC) are estimated to be 260 tons per year (TPY). Estimated emissions of NO_x are approximately 3,800 TPY. Please provide conduct an ambient impact analysis for ozone including the gathering of ambient air quality data.
[Rule 62-212(2)(e)1.e., F.A.C.; 40 CFR 52.21(i)(5)(i)(footnote 1)(July 1)]
9. The maximum ambient concentrations predicted at ground level in Table 6-7 are all based on a single emission rate per pollutant irrespective of applicable averaging times. This analysis should be redone using the maximum emission values that will occur during the specified averaging times (i.e. 3-hour, 24-hour, annual, etc. as applicable) The information provided is insufficient to conclude that ambient monitoring is not required for the pollutants and related averaging times given in Rule 62-212.400, F.A.C. or in 40 CFR 60 52.21(m).

Please identify or evaluate locations near the proposed facility for a fully equipped ambient air monitoring station.

10. Compare the emission rates for the proposed project those proposed for the 1500 megawatt Site Desert Rock Energy Facility. Provide comparisons on same averaging times, e.g. 24-hour SO₂ and 24-hour NO_x. This can be done in terms of pounds per megawatt-hr (lb/MWH) to take advantage of the high efficiency characteristics of the Glades Project. The permit is available at:

www.epa.gov/region09/air/permit/desertrock/desert-rock-proposed-permit.pdf

[Rule 62-212.400, F.A.C. (BACT)]

11. Review the possibilities of lower carbon monoxide (CO), hydrogen fluoride (HF) and sulfuric acid mist (SAM) emissions. For example review CO requirements for the Desert Rock project as well as the Seminole Electric Unit 3 project. The planned use of the wet scrubber and wet electrostatic precipitator (WESP) should greatly decrease HF and SAM emissions. [62-212.400, F.A.C. (BACT)]
12. Evaluate the possibility of lower PM₁₀ emissions based on the additional ESP under consideration for installation prior to the sorbent injection/fabric filter equipment. Also provide a set of PM, PM₁₀ and PM_{2.5} limitations based on filterable and condensable fractions. Compare to the extent possible with the values for the Desert Rock project.
13. Review the possibility of particulate continuous emissions monitoring systems (PM-CEMS).
14. Provide estimates of ammonia (NH₃) emissions and strategies to minimize slip and fine particulate formation potential. What kind of ammonia is proposed to be used (aqueous or anhydrous)? What safety measures will be in place for the transportation and storage?
15. Provide information comparing the Hg emissions from the proposed project with stationary source information from other emitters of Hg in South Florida. Estimate the relative contribution and increase of the proposed project to the total Hg emissions from substantial stationary sources of Hg such as waste to energy plants, other power plants, etc.
16. Indicate measures that will be taken to insure that Hg removed by the various air pollution control processes and discharged via the coal combustion by-products, scrubber effluents, etc. does not reenter the environment.
17. Please provide more information regarding air emissions during the construction phase of the proposed project, including number and types of vehicles, description of heavy equipment, etc. Describe the measures to minimize the effects of construction activities at the site.
18. Is there a plan to minimize construction and transportation equipment emissions by using ultra low-sulfur diesel fuel and minimizing idling?
19. Please provide more information regarding the types of vehicles and equipment used during operation of the proposed facility. Will there be a commitment to minimizing pollution by reducing idling and utilizing the use of ultra low sulfur fuel? Further, provide a detailed assessment of all traffic, including vehicle used, purpose of vehicle and miles traveled.
20. Describe the purpose and duration and emission characteristics of the batch plant shown in Figure 2-1 of the application.
21. Please expand the narrative description of the process, the coal handling system, limestone and reagent preparation system, and the fly and bottom ash handling system (include each emissions point).
22. What activities are contemplated for the train/engine repair location? Are there any emissions associated with this activity?

23. The application listed petroleum coke and U.S. and imported bituminous coal. It states (page 2-1) that the units will co-fire up to 20 percent by weight petroleum coke with coals and that the amounts of each type will vary depending of economic conditions. What combination of fuels was used to calculate emissions? What is the worst case scenario?
24. Please identify the likely sources of the various fuels (coal and petcoke) mentioned in the application.
25. The BACT proposal for NO_x is stated as Advanced Combustion Technology (ACT) and SCR. Is the ACT a combination of low NO_x burners, overfire air or reburn or any other technology? Please explain.
26. Provide the protocol for the start up and shutdown to minimize emissions and quantify emissions during this period.
27. Provide estimates of and any considerations given to carbon dioxide emissions. Advise of any studies or pilot demonstration projects in which FPL participates or plans to participate.
28. Please evaluate and provide information regarding the feasibility of dry cooling techniques versus mechanical draft cooling towers with drift eliminators.
29. Please total up the hazardous air pollutants (HAPs) estimated for the project.
30. What are the distances between the proposed project and the following geographical features and municipalities: the City of Moore Haven; Clewiston; Lake Okeechobee; Brighton Seminole Reservation; Everglades National Park; and Big Cypress National Preserve? Show these relationships on a map.
31. In general, the results of the ambient air quality analyses should be displayed in more reader-friendly graphical formats on maps that include geographic features and municipalities to allow a better appreciation of the degree to which they are affected by the proposed project. This will make the subject matter more readily understandable to all readers including experts and laymen.
32. Section 6.5 of the PSD Report states that the land use data of the Ft. Myers National Weather Service station was compared to the land use of the proposed project site. It also states that this comparison found that land use values were similar between the Ft. Myers station and the project site. Please provide these data to the Department for verification purposes.
33. The proposed project is PSD for VOC and NO_x, which are precursors to the pollutant ozone. In the PSD Report, impacts from the proposed project with regards to ozone are solely evaluated with respect to vegetation, specifically in the Class I areas. VOC emissions in excess of 100 TPY require an ambient air quality analysis for ozone. Please submit an ambient air quality analysis for ozone.
34. The proposed project triggers PSD for Total Fluorides. There are modeled concentrations for HF impacts listed in Table 6-7 of the PSD Report. Please provide additional information regarding the impact of Total Fluorides. For example, how would a 24-hour concentration of 0.028 micrograms per cubic meter impact the surrounding Class II area?
35. Table 6-7 in the PSD Report shows the emission rates used in the modeling analyses for the proposed project. The long term emission rates are equal to the short term emission rates.

The modeling analyses should reflect the worst case scenario. Please model all short term impacts using short term emission rates (i.e. the highest 24-hour emission rate, not 30 day average, for the 24-hour averaging period) for the Class I and Class II areas. Please submit all new modeling to the Department, including a Preconstruction Monitoring Analysis, a Significant Impact and Increment Analysis for all short-term averaging periods.

36. The CALPUFF modeling system was used to model impacts from the proposed project for the Class I areas. However, there are various versions of the model. The VISTAS version was used in the analysis for the Glades Power Park. While this version is accepted for use by the National Park Service, the EPA requires the use of the "regulatory" version (available on the EPA web site) to model the Class I Significant Impact Analysis and Increment, if required. Please model using the preferred EPA version or submit necessary documentation to obtain approval for using the VISTAS version.
37. Are the Results in Table 7-6 of the PSD Report for Method 6 results of modeling with the Initial or New IMPROVE equation?
38. The PM modeling including fugitive emissions has stack diameter inputs of 42 feet while Table 2-3 in the PSD Report states that the diameter will be 30 feet. Please correct the modeling or the Table to reflect the correct diameter. The modeled diameter of the cooling tower cells and emission rates do not correspond with Table 2-4 as well.
39. The PM modeling including fugitive emissions shows an Emission Factor for Wind Speed Emission Rate Variation of 1 for higher wind speeds for source ID AREA9WE, AREA2WE and BYPRODWE. Please explain.
40. Please explain how the Initial Vertical Dimension was determined for the volume sources.
41. Please provide further information regarding Railcar emissions. For example, emission source ID EP-45 includes railcar unloading, TP-3, according to Table A-2. However, Table A-3 shows railcar loading as TP-1, which is not a part of any emission points listed in Table A-2. Further, please explain which source ID's in the modeling analysis includes emissions listed in Table A-3.
42. Please provide further information regarding the truck/bulldozer traffic emissions. Please provide the truck traffic source ID's used in the modeling analysis.
43. Table A-4 in the PSD Report lists 2 inactive coal piles, F-14 and F -13. However, Table A-9 (page 1 of 3), states that F-14 is an active coal pile and Table A-9 (page 2 of 3) only has one inactive pile, F-13. Please clarify and note which Source ID is used in the modeling for these emissions.
44. Table A-4 in the PSD Report includes all emissions for all bulldozers and front end loaders listed in Table A-10 except for Bottom Ash Handling F-76. Was F-76 accounted for in the material handling operation emissions?

45. Table 6-6 in the PSD Report lists the building dimensions used in the modeling analysis. The modeling shows 19 of the 22 listed in the table. The 3 missing are the Railcar Area, the Limestone Track Hopper and the second Coal Transfer House. Please add these buildings to the modeling analysis. Should the Administration, Warehouse and Maintenance buildings be added to the modeling analysis?
46. The receptor grids for the SO₂ and PM₁₀ Increment analyses have 450-500 receptors. The PM₁₀ analysis only has receptors along the fence-line. Please verify that receptors are placed in "areas," not just "points" of "significance."
47. Where in the stack will CEMS be placed? Where will stack sampling platforms be located?

Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. Please advise the professional engineer to make sure he/she uses the correct seal in compliance with the applicable requirements of the Florida Board of Professional Engineers.

If there are any questions, please call me at 850-921-9523 or Debbie Nelson at 850/921-9537.

Sincerely,



Alvaro A. Linero, Program Administrator
Bureau of Air Regulation
South Permitting Section

AAL/al

cc: Jim Little, EPA Region 4: little.james@epamail.epa.gov
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Chair, Glades County BCC, attention Secretary: sbrown@gladesclerk.com
Mayor, City of Moore Haven, attention City Clerk: mbrantley@moorehaven.net
Manager, Glades County: wtaylor@myglades.com
Chairman, Seminole Tribal Council: mitchellcypress@semtribe.com
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increment analyses and its visibility impact analysis (including both filterable and condensable PM) using the correct 3-hour and 24-hour emission rates. Also, if the Class I Significant Impact Levels are exceeded, FPL should perform cumulative Class I increment impact analyses using the correct 3-hour and 24-hour emission limits. If a cumulative Class I impact analysis is completed, we ask that FPL provide information as to how the cumulative increment analyses were conducted. FPL should provide a discussion of the methods used to determine which sources were included in the cumulative inventory, and how it determined changes in emissions from those sources relative to baseline emissions. We also ask that FPL provide us example calculations for the more significant sources. Spreadsheets (in Excel format) should be provided containing the sources in the inventory, their distances from Everglades National Park, and their changes in emissions. In conclusion, based on the incorrect Class I and Class II air quality and visibility analyses in the FPL permit application, the NPS cannot determine the frequency, magnitude and extent of the visibility impacts at Everglades National Park, nor the amount of Class I increment consumed in the park. We ask that FDEP require FPL to conduct these analyses and include them in the GPP permit application.

Sulfate Deposition and Mercury Concerns

Mercury contamination of fish and wildlife is widespread throughout Everglades National Park. Emissions from the GPP facility will increase mercury deposition to the area, increasing the risk of toxic effects to both humans and wildlife. In addition, the modeling analysis for the facility predicts an increase in sulfate deposition to Everglades National Park. Increased sulfate deposition will likely increase methylation of mercury in sediments, with subsequent increased methylmercury bioaccumulation in the food web.

Therefore, we would like FPL to evaluate the impact of increased mercury and sulfate deposition on mercury methylation and subsequent mercury bioaccumulation in Everglades National Park. In addition, we would like FPL to mitigate mercury and sulfate deposition so that mercury methylation and accumulation potential is minimized.

Threatened and Endangered Species Concerns

We are also concerned about the potential effects of GPP emissions on threatened and endangered plants and wildlife protected by the Federal Endangered Species Act. Information regarding threatened and endangered species effects will be pertinent to federal actions or approvals needed before GPP is permitted or commences construction. In order to avoid delays, it may be prudent for FPL to examine potential effects on threatened and endangered species as soon as practical.

Best Available Control Technology (BACT)

Because the short-term (3-hour and 24-hour average) emissions rates are not specified for SO₂ and NO_x, and the averaging period for H₂SO₄ is not identified, we can not properly compare

the level of emission control (BACT analysis) to similar facilities that do have appropriate short-term limits. We ask FPL to provide this information in its permit application.

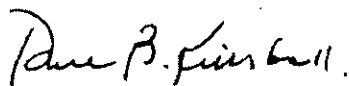
Conclusion

We are concerned that emissions from the proposed GPP facility will cause or contribute to a change in the air quality in Everglades National Park. Specifically, the emissions from the GPP facility have the potential to impact air quality and cause visibility impairment in Everglades National Park. We are also concerned that emissions from the GPP facility have the potential to exacerbate methylmercury conditions and to affect threatened and endangered species.

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Thank you for involving us in the review of GPP's PSD permit application. Please do not hesitate to contact Mr. Dee Morse of our Air Resources Division in Denver (303-969-2817) or me (305-242-7712) if you have any questions concerning the comments provided above.

Sincerely,

A handwritten signature in cursive script that reads "Dan B. Kimball".

Dan B. Kimball
Superintendent
Everglades and Dry Tortugas National Parks