



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

November 13, 2009

Electronic Mail – Received Receipt Requested

Mr. Randall R. LaBauve, Vice President of Environmental Services
Florida Power and Light (FPL)
700 Universe Boulevard, P.O. Box 14000
Juno Beach, FL 33408

Re: **Request for Additional Information**
Project No. 0250003-013-AC (PSD-FL-409)
Florida Power and Light, Turkey Point Plant
Cooling Tower Project to Support Proposed Units 6 and 7

Dear Mr. LaBauve:

On October 14th, we received your response to our initial request for additional information regarding the application for an air construction permit to construct cooling towers to support proposed Nuclear Units 6 and 7 at the existing Turkey Point Plant. The facility is located in Miami-Dade County approximately 9.5 miles east of Homestead on SW 344th Street. The application indicates that the project is subject to preconstruction review for the Prevention of Significant Deterioration (PSD) of Air Quality pursuant to Rule 62-212.400 of the Florida Administrative Code (F.A.C.). The application is incomplete. In order to continue processing your application, please provide the additional information requested below. Should your response to any of the requested items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

1. Based on the response and information provided in the application, the Department understands that each proposed nuclear unit will have three cooling towers for a total of six cooling towers. Each cooling tower will have the following specifications.

Air Flow Specifications

Number of Cells: 12 cells per tower
Discharge Height: 67 feet
Diameter: 33.67 feet
Exit Temperature: 104.7° F
Volumetric Flow Rate: 1,764,500 acfm per cell

Circulating Water Flow Specifications

Total Circulating Water Flow: 210,366.7 gpm per tower
PM Drift Rate: 0.0005%
PM Emissions: 157.2 tons/year/per tower at 65,000 ppmw TDS
PM₁₀ Emissions: 3.5 tons/year/per tower based on 4000 ppmw TDS
("TDS" means total dissolved solids in proposed cooling water.)

"PM" means particulate matter. "PM₁₀" means particulate matter with a mean particle diameter of 10 microns or less.

- a. The above information was updated based on your initial response. Please confirm the above specifications.
- b. In your response, you state that the treatment criterion is 336 to 580 mg/L of TDS, which is approximately 336 to 580 ppmw of TDS. Does this mean that the reclaimed water will be treated from 4000 ppmw to 580 ppmw before being used in the cooling towers?

REQUEST FOR ADDITIONAL INFORMATION

- c. The second source of water will be from radial collector wells, for which you estimate a maximum TDS concentration of 65,000 ppmw. In your response, you provided a representative analysis of the actual TDS for this source of water as 33,800 to 35,800 mg/L, which is approximately 33,800 to 35,800 ppmw. At this concentration, would the maximum total PM emissions from the cooling towers be reduced to approximately 518 tons/year?
 - d. In your response you state that the cooling water will be made up from a combination of these water sources. Is there sufficient supply to operate the cooling towers solely on treated effluent? Will this be the preferred source? If the sources are blended, what is the expected blend ratio?
 - e. For the six cooling towers for proposed Units 6 and 7, the application estimates potential PM emissions of 943 tons/year and PM₁₀ emissions of 21 tons/year. Based on the expected actual TDS concentrations and the blend of cooling waters, estimate the expected actual PM and PM₁₀ emissions.
2. The project also proposes to construct two service water cooling towers (one per nuclear unit) with the following specifications per tower.

Air Flow Specifications

Number of Cells: 2 cells per tower

Discharge Height: 63 feet

Diameter: 35 feet

Exit Temperature: 96.9° F

Volumetric Flow Rate: 1,358,000 acfm per cell

Circulating Water Flow Specifications

Total Circulating Water Flow: 21,000 gpm per tower

PM Drift Rate: 0.0005%

PM Emissions: 0.92 tons/year/per tower

PM₁₀ Emissions: 0.35 tons/year/per tower

(Emission based on high range of TDS in proposed cooling water.)

- a. The above information was updated based on your initial response. Please confirm the above specifications.
 - b. Your response indicates that the service water cooling towers will use potable water from Miami-Dade County, which has a TDS concentration of 318 ppmw that would be 1272 ppmw at four cycles of concentration. Please explain this statement.
3. As shown in Table 2-1, the cooling tower PM emission rate for a TDS concentration of 65,000 ppmw is 107.7 lb/hr per unit or about 45 times higher than the maximum modeled PM₁₀ emission rate of 2.42 lb/hr per unit. The modeling results show a maximum predicted 24-hour average PM₁₀ project impact of 4.934 ug/m³. Based on the ratio of maximum PM to PM₁₀ emissions, the predicted modeling impacts are around 220 ug/m³, 24-hour average, for PM emissions. Please address the potential air quality impacts of PM emissions on soils, vegetation and wildlife.
4. Please address the following additional questions and comments from the Air Facilities Section of the Miami-Dade County Environmental Resources Management (DERM).
- a. With regard to off-site nonmetallic mineral processing operations that may be performed in association with the construction project, FPL will be required to obtain a Miami-Dade County Air Emissions Annual Operating Permit prior to conducting rock mining/crushing operations, as well as registering with FDEP for a Nonmetallic Mineral Processing Plant Air General Permit. Please acknowledge.
 - b. Please address each of the following:
 - 1) Provide a technical discussion and analysis of the heat transfer process on the constituents identified in the circulating cooling waters (both reclaim and radial well/subsurface waters).
 - 2) Provide the anticipated mix of cooling waters. In other words, what are the expected percentage of reclaim water and the expected percentage of radial well/subsurface water that will be utilized in the cooling towers?

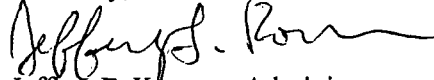
REQUEST FOR ADDITIONAL INFORMATION

- 3) FPL plans to install a treatment facility for the partially treated wastewater effluent. As noted in the response, the radial well/subsurface water contains high concentrations of chlorides (20,700 mg/l) and sulfates (2,540 mg/l) from the "saltwater". Identify available pre-treatment processes that could be used on this source of cooling water to reduce TDS. Evaluate the energy, environmental and economic impacts as well as other associated costs of such treatment.

The above information is requested pursuant to the following F.A.C. regulations: Rule 62-4.050 (Procedures to Obtain Permits and Other Authorizations; Applications); 62-4.055 (Permit Processing); 62-4.070 (Standards for Issuing or Denying Permits; Issuance; Denial); 62-4.120 (Construction Permits); 62-204.800 (Federal Regulations Adopted by Reference); 62-212.300 (Permits Required); 62-210.370 (Emissions Computations and Reporting); 62-210.900 (Forms and Instructions); 62-212.300 (General Preconstruction review); and 62-212.400 (Prevention of Significant Deterioration of Air Quality). All applications for a Department permit must be certified by a professional engineer registered in the State of Florida pursuant to Rule 62-4.050(3), F.A.C. This requirement also applies to responses to Department requests for additional information of an engineering nature. For any material changes to the application, please include a new certification statement by the authorized representative or responsible official.

We will resume processing your application after receipt of the requested information. You are reminded that Rule 62-4.055(1), F.A.C. requires applicants to respond to requests for information within 90 days or to provide a written request for an additional period of time to submit the information. If you have any questions regarding this matter, please contact the project engineer, Tammy McWade (850/488-1906) or me (850/921-9536).

Sincerely,



Jeffery F. Koerner, Administrator
New Source Review Section

This letter was sent to the following people by electronic mail with received receipt requested.

Mr. Randall R. LaBauve, FPL (randall_r_labauve@fpl.com)
Mr. Matthew J Raffenberg, FPL (Matthew.Raffenberg@fpl.com)
Mr. Kennard F. Kosky, Golder Associates Inc. (kkosky@golder.com)
Mr. Lennon Anderson, SED Office (lennon.anderson@dep.state.fl.us)
Mr. Patrick Wong, Miami-Dade DERM (wongp@miamidade.gov)
Ms. Mallika Muthias, Miami-Dade DERM (muthim@miamidade.gov)
Mr. Mike Halpin, DEP Siting Office (mike.halpin@dep.state.fl.us)
Ms. Kathleen Forney, EPA Region 4 (forney.kathleen@epa.gov)
Ms. Heather Abrams, EPA Region 4 (abrams.heather@epa.gov)
Ms. Ana M. Oquendo, EPA Region 4 (oquendo.ana@epa.gov)
Mr. Dee Morse, NPS (dee_morse@nps.gov)
Ms. Vickie Gibson, DEP BAR Reading File (victoria.gibson@dep.state.fl.us)

JFK/tm

Livingston, Sylvia

From: Livingston, Sylvia
Sent: Friday, November 13, 2009 1:51 PM
To: 'randall_r_labauve@fpl.com'
Cc: matthew.raffenberg@fpl.com; kkosky@golder.com; Anderson, Lennon; wongp@miamidade.gov; muthim@miamidade.gov; mike.halpin@dep.state.fl.us; forney.kathleen@epa.gov; abrams.heather@epa.gov; oquendo.ana@epa.gov; dee; victoria.gibson@dep.state.fl.us; Koerner, Jeff; McWade, Tammy; Walker, Elizabeth (AIR)
Subject: RAI 11-13-09 - 0250003-013-AC/PSD-FL-409 (FPL - Turkey Point Plant)

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The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: <http://www.adobe.com/products/acrobat/readstep.html> .

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RAI

003-013-AC-11130:

Sylvia Livingston
Bureau of Air Regulation
Division of Air Resource Management (DARM)
850/921-9506
sylvia.livingston@dep.state.fl.us

Tracking:

Livingston, Sylvia

From: LaBauve, Randall R [Randall.R.LaBauve@fpl.com]
Sent: Friday, November 13, 2009 1:58 PM
To: Livingston, Sylvia
Subject: RE: RAI 11-13-09 - 0250003-013-AC/PSD-FL-409 (FPL - Turkey Point Plant)

Received and viewed. Thanks,

Randy

From: Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]
Sent: Friday, November 13, 2009 1:51 PM
To: LaBauve, Randall R
Cc: Raffenberg, Matthew; kkosky@golder.com; Anderson, Lennon; wongp@miamidade.gov; muthim@miamidade.gov; mike.halpin@dep.state.fl.us; forney.kathleen@epa.gov; abrams.heather@epa.gov; oquendo.ana@epa.gov; dee; victoria.gibson@dep.state.fl.us; Koerner, Jeff; McWade, Tammy; Walker, Elizabeth (AIR)
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<<RAI 0250003-013-AC-111309.pdf>>

Sylvia Livingston

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