



March 18, 2010

L-2010-059
10 CFR 50.36.b
EPP 3.2.4

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

RE: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Environmental Protection Plan Report
Request to Change Industrial Wastewater Facility Permit

The enclosed request to change the St. Lucie Industrial Wastewater Facility Permit is being submitted pursuant to the requirements of Section 3.2.4 of the St. Lucie Units 1 and 2 Environmental Protection Plans.

Please contact Celine Ali at (772) 467-7263 if there are any questions on this matter.

Sincerely,

Eric S. Katzman
Licensing Manager
St. Lucie Plant

ESK/CAA

Enclosure

St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Environmental Protection Plan Report
Request to Change Industrial Wastewater Facility Permit

L-2010-059

Enclosure:

FPL letter to Marc Harris for Request for Substantial Revision dated March 17, 2010
(2 pages)

FDEP Wastewater Application Form 2CS (31 pages)

Golder Associates Inc. Thermal Discharge Study (bound)

FPL St. Lucie Plant Estimated Cost of Lost Generation Due to Cooling Water Discharge
Limit (1 page)



March 17, 2010

Marc Harris, P.E.
Supervisor, Power Plant NPDES Permitting
Industrial Wastewater Section
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 3545
Tallahassee, Florida 32399-2400

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7006 3450 0003 0174 3595

RE: FPL - St. Lucie Plant
State IWW Permit No. FL0002208
Request for Substantial Revision

Dear Mr. Harris:

Attached please find the following items to support the request for a revision to the Florida Power & Light Company (FPL) St. Lucie Plant State Industrial Wastewater Facility Permit No. FL0002208:

- 1) Four (4) signed, sealed copies of FDEP Form 62-620.910(5) 2CS, "Application to Discharge Process Wastewater from New or Existing Industrial Wastewater Facilities to Surface Water" with Attachments.
- 2) An FPL Check payable to the Florida Department of Environmental Protection for the \$7,500 application fee.
- 3) An Antidegradation Analysis addressing the potential impact of the proposed modification.

FPL has received a modification to the existing Conditions of Certification under the Florida Power Plant Siting Act, as well as a previous State of Florida Industrial Wastewater Facility Permit minor revision (Permit No. FL0002208 – Minor Revision D) to add about 200 MW of electrical generation resources to its system in order to continue to provide reliable, safe, and cost-effective service to its customers. This increase will be accomplished by the St. Lucie Update Project (Project) which is an innovative application of technological advancements and efficiencies that will increase the net power output of both Unit 1 and Unit 2 from about 840 Megawatts (MW) to 943 MW each. The extra power output will result from improving the performance of the steam turbines and from using more nuclear fuel which will result in increased thermal MWs produced in the reactor cores. The additional heat will raise the temperature exchange between the primary and secondary systems, creating more steam for turning the turbines.

The Project consists of upgrades to each unit. The upgrades will include refurbishment and improvement activities to the steam turbine-electric generators, electrical systems, and cooling systems. These refurbishment and improvement activities will primarily occur during outages starting in spring of 2010 and will be completed during the spring of 2012. Certain improvements will also be made while the units are operating. None of the proposed modifications will involve land disturbance or new construction outside of the established facility areas.

St. Lucie Units 1 and 2 use once-through cooling water from the Atlantic Ocean to remove heat from the main (steam-turbine) condensers via the Circulating Water System (CWS) and to remove heat from other auxiliary equipment via the Auxiliary Equipment Cooling Water System (i.e. Intake Cooling Water System). The great majority of this cooling water is used for the CWS.

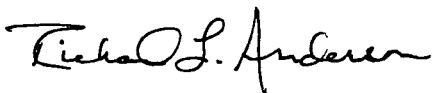
Circulation of water in the CWS is provided by a total of eight circulating water pumps (four per Unit). Nominal design capacity of the pumps is 974,600 gpm, though actual flow may range from 800,000 gpm to 1,120,000 gpm, depending on system conditions. When all pumps are operating and both units are operating at 100% capacity, temperature rise across the condensers is approximately 25.7°F. After the uprate is completed, the CWS flow rate will be unchanged; however, the temperature rise across the condensers will have increased by approximately 3°F.

Temperature of the discharged cooling water is currently limited by the State of Florida Industrial Wastewater Facility Permit No. FL0002208. The current permit limits require that heated effluent from the diffusers, as measured near the "Point of Discharge" in the Discharge Canal, not exceed 113°F or 30°F above ambient during normal operations. A maximum temperature of 117°F or 32°F above ambient is permitted during certain maintenance operations, when throttling circulating water pumps to minimize use of chlorine, and when biofouling of the CWS occurs. The previously approved temperature rise associated with the EPU, in conjunction with increased Atlantic Ocean "ambient" temperatures observed over the past few years, are the reasons FPL is requesting in this application for a permit revision, that:

- 1) The current 113°F instantaneous discharge temperature limit be revised to a 115°F monthly average limit and;
- 2) The 30°F above ambient instantaneous maximum be revised to a 30°F monthly average.

If you have any questions or need additional information on this matter, please contact Ron Hix at (561) 691-7641.

Sincerely,



Richard L. Anderson
Vice President – St. Lucie Plant

VPPSL007

Enclosures

cc:

USNRC Document Control Desk

FDEP – SE District – Tim Powell

FDEP – PSL Office – Terry Davis

FDEP – Tallahassee - Siting Office – Mike Halpin