



L-2012-256  
10 CFR 52.3

June 25, 2012

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D.C. 20555-0001

Re: Florida Power & Light Company  
Proposed Turkey Point Units 6 and 7  
Docket Nos. 52-040 and 52-041  
Response to NRC Request for Additional Information Letter 120510  
(RAI 6384 Rev. 1) Related to ESRP Section 5.2 – Water Related Impacts

Reference:

NRC Letter to FPL dated May 10, 2012, Environmental Request for Additional Information Letter 120510 Related to ESRP Section 5.2, Water Related Impacts, for the Combined License Application Review for Turkey Point Units 6 and 7

Florida Power & Light Company (FPL) provides, as an attachment to this letter, its response to the Nuclear Regulatory Commission's (NRC) Request for Additional Information (RAI) EIS 5.2-1 provided in the referenced letter. The attachment identifies changes that will be made in a future revision of the Turkey Point Units 6 and 7 Combined License Application (if applicable).

If you have any questions, or need additional information, please contact me at 561-691-7490.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on June 25, 2012.

Sincerely,

William Maher  
Senior Licensing Director – New Nuclear Projects

WDM/RFO

DO97  
LRO

Proposed Turkey Point Units 6 and 7  
Docket Nos. 52-040 and 52-041  
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Attachment: FPL Response to NRC RAI No. EIS 5.2-1 (RAI 6384 Rev. 1)

cc:

PTN 6 & 7 Project Manager, AP1000 Projects Branch 1, USNRC DNRL/NRO  
Regional Administrator, Region II, USNRC  
Senior Resident Inspector, USNRC, Turkey Point Plant 3 & 4

**NRC RAI Letter 120403 Dated April 4, 2012**

**SRP Section: EIS 5.2 – Water Related Impacts**

Questions from Environmental Projects Branch (RAP1)

**NRC RAI Number: EIS 5.2-1 (RAI 6384 Rev. 1)**

Two distinct water supplies are proposed by Florida Power and Light (FPL) for cooling water purposes for Turkey Point Units 6 and 7: a primary freshwater supply using reclaimed wastewater and a backup marine water supply using radial collector wells that draw water from Biscayne Bay. Early on in the environmental review process, FPL indicated they were planning to do a “reliability study” on the reclaimed wastewater supply from Miami-Dade County. Subsequently, FPL has decided not to complete the study. A concern of the review team with the use of the radial collector wells is the impact on Biscayne Bay salinity, particularly the frequency and duration of use in the event reclaimed wastewater is not available. Because of the potential use of water drawn from Biscayne Bay, FPL provided a bounding analysis of salinity in the bay within the environmental report. As part of the environmental review process, the review team enlisted additional models for consideration to independently assess impacts to Biscayne Bay from the use of the radial collector wells. These models provide a reasonable spatial and temporal resolution of the system as well as a high degree of consistency with known physical processes in Biscayne Bay and regional groundwater systems. Preliminary examination of the independent model results suggests a different impact in Biscayne Bay than provided in FPL’s analysis. The degree of impact is related to the frequency and duration of use of the radial collector wells. Consequently, the review team needs additional information in order to properly evaluate the environmental impacts of operating the radial collector wells. Specific information on the radial collector well system needed include the potential frequency and duration of operating the wells.

Please provide estimates of mean time between failure and durations for each of the reclaimed water delivery system failure modes listed below:

1. Miami-Dade unable to meet water quality requirements of treated waste water
2. Miami-Dade unable to meet full water supply requirement
3. Failure of pipeline (including pipeline breach or loss of pumps)
4. Failure of onsite water treatment plant
5. Inability to get sludge removed from site

Where appropriate, consider break-in, wear-out, and normal wear periods. Only events with durations in excess of those that can be managed with the water storage basins need to be addressed.

## **FPL RESPONSE:**

### Reliability Study

The RAI requests mean time between failure and durations for five postulated reclaimed water delivery system failure modes. The request implies that the information would be used to develop an estimate of the reliability of the reclaimed water delivery system proposed for the FPL Turkey Point Units 6 & 7 project. FPL provides the following information in response to this request, based on its experience and other considerations not identified in the RAI:

- The analysis would necessarily be very complex and of limited value. Attempts to estimate the reliability of the entire reclaimed water delivery system requires modeling of several key subsystems: municipal sewer collection and delivery to South District Wastewater Treatment Plant (SDWWTP), SDWWTP system, reclaimed water pipeline to Turkey Point, FPL Reclaimed Water Treatment Facility, pipeline delivery to cooling water reservoir, transfer system to cooling tower basins. Simplistic aggregation of these individual systems or components of systems into a single failure probability (such as "Miami-Dade failure to meet full water supply requirement" or "failure of pipeline including pipeline breach or loss of pumps") will introduce inestimable error, rendering the resulting analysis of low quality and of little value.
- The necessary data for such an analysis is non-existent or of very poor quality. FPL's attempts to gather relevant municipal water treatment industry information was unsuccessful due to the very different design and operating paradigm for these systems. There are limited standards and practices in the wastewater treatment industry for recording material condition and operating statistics that are considered common in the power generation industry. It is for this reason that FPL could not complete the reliability analysis previously indicated to staff, that could then be relied upon as a basis for determination of estimated reclaimed water delivery failures in quantity or quality.
- FPL communications with the Miami-Dade Water and Sewer Department (MDWASD) regarding the operational reliability of their SDWWTP suggest that the most directly relevant information is the Hurricane Andrew recovery experience, which was an approximate 30 day outage.
- Importantly, there are other aspects of the operation of the facility as a whole that FPL is taking into account when it examined the various sources of cooling water so as to maintain the operation of the facility. The engineering reliability of the delivery system for the primary source of cooling water does not take into account the financial ramifications of such a failure including non-recoverable losses. Therefore, FPL's need for a backup source is not solely predicated on the estimated reliability of the primary source, but the unmitigated financial impact of such a failure on the continued operation of the facility, the associated challenge to nuclear safety in shutting down the facility in an orderly fashion based on lack of cooling water, and subsequent impact on its customers.

FPL will revise its response to the NRC's Environmental Audit Information Need H-63 (FPL, 2010) to indicate the reliability study was not completed.

#### Radial Collector Well (RCW) Operation Limitation

FPL (and its parent company NextEra Energy) has gained operational knowledge in the use of reclaimed water at several locations. Based on that experience, and on the historic failure duration at SDWWTP, FPL has proposed and would be agreeable to a 90 day use restriction within a 12 month period (FPL 2011). This concept is consistent with an existing use restriction on the back-up supply for the FPL West County Energy Center in Palm Beach County, FL, where reclaimed water is used as a primary cooling water source. It is anticipated that the final nature and limitations of a use restriction will be established by a condition of certification to the Florida Site Certification.

FPL believes that the NRC should be able to complete its analysis of environmental impacts and concur with our finding that any such impacts from RCW operation are SMALL.

FPL would be interested in examining the results of the independent model(s) that the NRC says exhibits a different impact in Biscayne Bay than what FPL has provided.

This response is PLANT SPECIFIC.

#### **References:**

FPL, 2010. FPL Letter L-2010-295 dated December 15, 2010, NRC June 2010 Environmental Audit Supplemental Information Request Response 2 Part 2, Attachment 10: Response to Environmental Audit Information Need No. H-63. ADAMS Accession No. ML103560533.

FPL, 2011. Turkey Point Units 6 & 7 5<sup>th</sup> Round Site Certification Application (SCA) Completeness Responses, Miami-Dade County, Plant and Associated Non-Transmission Facilities, July, 2011. Available at:  
[http://publicfiles.dep.state.fl.us/siting/outgoing/FPL\\_Turkey\\_Point/Units\\_6\\_7/Completeness/Plant\\_Associated\\_Facilities/5th\\_Round\\_Completeness/5-MDC-FPL%20Responses.pdf](http://publicfiles.dep.state.fl.us/siting/outgoing/FPL_Turkey_Point/Units_6_7/Completeness/Plant_Associated_Facilities/5th_Round_Completeness/5-MDC-FPL%20Responses.pdf).  
Accessed on May 21, 2012.

#### **ASSOCIATED COLA REVISIONS:**

No COLA changes have been identified as a result of this response.

#### **ASSOCIATED ENCLOSURES:**

None.