

## **PMTurkeyCOLPEm Resource**

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**From:** Williamson, Alicia  
**Sent:** Wednesday, March 14, 2012 10:57 AM  
**To:** Orthen, Richard  
**Cc:** TurkeyCOL Resource  
**Subject:** NRC draft RAIs 5766 and 5768  
**Attachments:** RAI 5768.doc; RAI 5766.docx

Rick

Attached are the draft RAIs for tomorrows call at 3:00pm.

Please let me know if you have any questions or problems with the proposed time.

Thanx

Alicia

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Request for Additional Information No. 5768 Revision 2

Turkey Point Units 6 and 7  
Florida P and L  
Docket No. 52-040 and 52-041  
SRP Section: EIS 7.2 - Water Use and Quality  
Application Section: Part 3, Environmental Report, Section 5.11

QUESTIONS for Environmental Technical Support Branch (RENV)

EIS 7.2-1

During the Site Audit staff reviewed "Water Management Project Design Document: CH2MHill Oct 2009". Provide this document. Clarify whether the "Water Management Feature" described in the ER (sections 4.1 and 5.2) will be included in the final plant design.

EIS 7.2-2

What is the current status of discussions between FPL and Federal, State and local agencies regarding the use of the FPL fill source and any subsequent use of that location as a water management feature? Provide copies of the most recent communications (letters, emails, telecom summaries) between FPL and those agencies that reflect the current status.

EIS 7.2-3

Provide a discussion of any adaptations being considered to account for the changes in environmental impacts, if any, anticipated to result from sea level rise at the site of at least 1 ft by 2050, including potential impacts from operating the Turkey Point Units 6&7 radial collector wells at such increased sea levels. Also provide a discussion of changes in environmental impacts, if any, expected to result from operation of other infrastructure, such as the reclaimed water treatment plant, under such conditions. How will this amount of sea level change affect how the cooling canals function, how they respond to the operation of the RCWs, and how will these changes be mitigated or affect the operations of the proposed new plant (Units 6 & 7).

EIS 7.2-4

Explain to what extent the building and operation of the new units (radial collector well operations, site stormwater runoff, site dewatering flows, concrete island emplacement) could interact hydraulically with the existing cooling canal system. In particular, explain to what extent the building and operation of the new units, including the operation of the radial wells, could affect intrusion of saltwater from the cooling canals into aquifers, and/or into the Biscayne Bay. Provide quantification, assumptions and references for determining the impacts.

#### EIS 7.2-5

Explain how the activities related to building and operating the new units would interact with activities in the Comprehensive Everglades Restoration Project (CERP). Include in the response a quantitative description, to the degree possible, of the extent to which the activities on the site of Units 6&7 (e.g., dewatering, land modifications) and off the site (e.g., mining, roads, transmission) would affect hydrology, water resource availability, water clarity and water quality (dissolved oxygen, nutrient, chlorophyll a, TDS, organic and inorganic water quality constituents).

#### EIS 7.2-6

Provide available historical and current data on groundwater chemistry including, but not limited to, chemical constituents (including barium), radionuclides, and stable isotopes from wells within a 5 mile radius of the proposed plant locations. Also, provide any additional data on chemical constituents (including barium), conductivity, temperature depth, salinity, radionuclides, and stable isotopes for groundwater or surface water samples related to the cooling canal investigation or the FPL Turkey Point Power Plant Groundwater, Surface Water, and Ecological Monitoring Plan. Provide spatial extent and direction of chemical constituents including barium pursuant to the uprate monitoring requirements.

#### EIS 7.2-7

Describe the current understanding of the lateral and vertical configuration of the industrial waste water plume from the existing cooling canals, including the location and temporal movement of chloride isopleths, temperature isopleths, and tritium signature. Describe current efforts to determine the extent of this plume, including all pore water data collected to date as part of the state process to determine the extent of the interaction with the plume, the wetlands, and the bay.

Provide access to all data collected as part of the Units 3 & 4 Uprate monitoring provided to the State of Florida.

#### EIS 7.2-8

Beginning with the current rate of chloride increase in the cooling canal system as a baseline, provide an analysis of the increasing salt concentration and rate due to additional salt deposition from the cooling towers when the proposed radial collector wells are in operation. This calculation should include the additional salt loading that is predicted to occur due to the assumed evaporation increases in the cooling canals from the Uprate project, since the Uprate project is proposed to be operational prior to the use of the proposed radial collector wells and would therefore be considered as background to units 6 & 7 changes.

In addition, provide an analysis showing how the increasing salt concentration will affect the wetlands known as the "Model Lands", Biscayne Bay, Biscayne National Park and Card Sound.

Request for Additional Information No. 5766 Revision 2

Turkey Point Units 6 and 7  
Florida P and L  
Docket No. 52-040 and 52-041  
SRP Section: EIS 5.2 - Water Related Impacts  
Application Section: Part 3, Environmental Report, Section 5.2

QUESTIONS for Environmental Technical Support Branch (RENV)

EIS 5.2-1

The radial collector well system is described as a backup water supply. Describe the maximum amount of time each year that the radial collector wells (RCW) will be operated, the maximum continuous time they will be operated, the distribution of operational time through the year, and the lengths of time and pumping rates during the operational periods of the radial collector wells. Explain any assumptions used to support this response.

Different reports supporting the COL propose different lateral lengths for the radials of the RCW. The Groundwater Modeling Report states 700 feet and the Cooling Water Supply and Disposal Conceptual Design Report states 900 feet. Please clarify the length and number of the RCW laterals. Please provide a map to scale showing the layout of the RCW laterals and the Biscayne National Park boundaries including the proposed coordinates of the position of the RCWs and the projected cone of influence of the full scale operation of the RCWs.

EIS 5.2-2

Describe any monitoring of chemical parameters that will be conducted on the water produced by the radial collector wells and the water within the overlying Biscayne Bay during radial collector well operations. Describe how this data could be used to verify the model-predicted proportions of water taken from the Bay versus water taken from the Biscayne aquifer under lands to the west of Biscayne Bay.

EIS 5.2-3

What is the predicted additional drawdown at the nearest offsite water supply well caused by operation of the radial collector well system? Describe how this predicted drawdown was calculated, including all parameters, assumptions and model implementation details.

#### EIS 5.2-4

Describe the effects, if any, that pumping from the radial collector wells will have on the hypersaline groundwater plume from the existing cooling canals, considering the potential for density-driven unsteady flow of the hypersaline plume.

#### EIS 5.2-5

Provide the current status and content of the agreement for access to/appropriation of 90 MGD reclaimed water described in the ER. The staff is aware of an unsigned version of a Joint Participation Agreement between Miami-Dade County and FPL providing for development of a reclaimed water project.

#### EIS 5.2-6

During the site audit, staff reviewed the document "Cooling water supply and disposal conceptual design report: FPL proposed units 6&7 at Turkey Point" prepared in March 2009. This document discusses several possible routes to be used for the reclaimed water pipeline in the area near the South Dade Waste Water Treatment Plant. Provide information on these identified routes in a referenceable form. If a route has been chosen from among these possible routes, provide a description of the proposed route and a GIS overlay of the route (the available GIS layer shows all the possible routes).

#### EIS 5.2-7

ER Revision 2 Section 2.3.1.1.4 Industrial Wastewater Facility states that the water level in the industrial wastewater facility (IWF) rises and falls with the tide in Biscayne Bay. Provide water level time series data in the IWF that show this phenomenon at a time frequency (minimum interval of 1 hour) adequate to resolve the shape, tidal range, maximum water levels, and minimum water levels. Also, include a map of the measurement locations. Include the maximum measured range in water level. Include data for a period of at least two weeks. Also, provide a discussion of a plausible conceptual model that accounts for the tidally-induced water level variation in the IWF. Provide a discussion concerning the effects of the operation of the RCW's on these phenomena. This information is requested for the cumulative impacts analysis.

#### EIS 5.2-8

Recent RAI response L-2012-101 provided conventional and priority pollutant data on the reclaimed water. Provide a technical discussion and analysis of the effect that the proposed cooling tower (heat transfer) process will have on the reclaimed water and radial well water constituents (concentrations and transformations). This information will be used to better understand the constituents expected to occur in the cooling tower drift. Source water analysis constituents to be addressed include: TDS, total suspended solids, etiologic agents (protozoa, viruses, and bacteria, including fecal coliform), chlorides, carbon, nutrients (nitrogen and phosphorus); pharmaceuticals (e.g., triclosan, warfarin, estradiol or other hormones), organics (including but not limited to pesticides, benzene, anthracene, phenol, phthalates) and metals.

EIS 5.2-9

Provide any comprehensive geological subsurface survey that would identify karst features and quantify the potential for fracture or collapse of the limestone bay bottom for the area proposed to be drilled. Provide any models and reports to show that the area for drilling will not collapse (e.g., the lithographic information collected as part of the well construction for monitoring under the Uprate Monitoring Plan).

EIS 5.2-10

In the Salinity Impact Analysis, the ocean salinity concentration of 35 ppt does not reflect the actual seasonal variability in salinity concentrations that occur in Biscayne Bay. The analysis assumes that the annual average rainfall on the Bay is equal to the annual average evaporation in the Bay in the calculation. Provide the basis for this assumption including a reference for the evaporation value used (e.g., a value obtained from a weather station in close proximity to the site).