

PMTurkeyCOLPEm Resource

From: Kugler, Andrew
Sent: Thursday, May 05, 2011 7:54 AM
To: Orthen, Richard; Franzone, Steve; Maher, William; steven.hamrick@fpl.com
Cc: Bryce, Robert W; TurkeyCOL Resource; Moulding, Patrick; Clouser, Megan L SAJ; Haque, Mohammad; Masnik, Michael
Subject: Forwarding Draft RAIs 5765 and 5768-Hydrology for Chapters 4 and 7
Attachments: 110505-Draft RAI 5765 - Hydro 4-2.doc; 110505-Draft RAI 5768 - Hydro 7-2.doc

Steve

Attached are draft RAIs 5765 and 5768 prepared by the NRC staff for the environmental review of Turkey Point Units 6 and 7. These RAIs are related to the Hydrology evaluation for Chapters 4 and 7, respectively.

Note that because of the evolution of the NRC staff environmental impact statements (EISs) for new reactors, there are some differences between the ESRP (on which your ER was modeled) and the EIS format. So, for example, eRAI 5768 relates to ER Section 5.11, but EIS Section 7.2.

After you've had an opportunity to review the RAIs, we can set up a call involving FPL and NRC for any clarifications of the request. At that time we can also discuss an appropriate timeframe for the FPL response. If you have any questions, please give me a call.

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Hearing Identifier: TurkeyPoint_COL_Public
Email Number: 295

Mail Envelope Properties (94A2A4408AC65F42AC084527534CF41656B8CFA2C4)

Subject: Forwarding Draft RAIs 5765 and 5768-Hydrology for Chapters 4 and 7
Sent Date: 5/5/2011 7:53:46 AM
Received Date: 5/5/2011 7:53:48 AM
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Post Office: HQCLSTR01.nrc.gov

Files	Size	Date & Time
MESSAGE	895	5/5/2011 7:53:48 AM
110505-Draft RAI 5765 - Hydro 4-2.doc		37882
110505-Draft RAI 5768 - Hydro 7-2.doc		33786

Options

Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Draft Request for Additional Information No. 5765

Turkey Point Units 6 and 7
Florida P and L
Docket No. 52-040 and 52-041
SRP Section: EIS 4.2 - Water-Related Impacts
Application Section: Part 3, Environmental Report, Section 4.2

QUESTIONS for Environmental Technical Support Branch (RENV)

EIS 4.2-***

FSAR Figure 3.4.2-203 provides the drainage pattern during operation of the plant. Provide a plan view of surface water flow routing (runoff throughout the facility), with quantification of runoff throughout the area prior to disturbance for building activities. Include a depiction in GIS format for the period prior to disturbance. Provide a discussion comparing changes in flow magnitude and direction as a result of building and operating Units 6 & 7. Identify how the uprate to Units 3 and 4 and activities to be completed under CERP will alter surface water flows.

EIS 4.2-***

Provide the locations for all effluent discharge points, including runoff, effluents associated with blowdown, and other ancillary flows. Provide data in GIS format for effluent locations and flow directions and magnitudes. In addition, provide water quality information (TDS, nitrogen, phosphorus, dissolved oxygen, carbon, inorganics/metals, and organic contaminants for all flows with expected variability in the concentrations) for all effluents.

EIS 4.2-***

Explain how, if at all, dewatering of the site and routing of the dewatering flows to the cooling canals will change the velocity structure within the cooling canals, the height/depth of the cooling canals, and the exchange rates with the Biscayne Aquifer and Biscayne Bay. Provide the total volume of dewatering-sourced water (upper estimate) that will be routed to the cooling canals, and the time frame for the dewatering to be routed to the cooling canals – (number of weeks, for example). Discuss the possibility for, and consequence of, the cooling canals' capacity being exceeded at any time during dewatering. Provide, in a table or other suitable form, the capacity of the cooling canals to receive dewatering flows.

EIS 4.2-***

Provide the capacity of the makeup water reservoir. Explain how the reservoir will alter groundwater flow patterns and how it will exchange with surface water resources

including the Biscayne Bay. Provide quantification for the changes in groundwater and surface water flows and justification for assumptions used.

EIS 4.2-***

What are typical sedimentation rates and transport patterns along the shoreline in the vicinity of the location where the dredging will take place for the barge turning basin, and along the Turkey Point Peninsula? How will sedimentation patterns change locally with the dredging needed for the barge turning basin, and the emplacement of pipelines along the coast, including the radial well and reclaimed water pipelines? In addition, provide an aerial photo prior to the original plant's construction (preferably early 1960's) which includes the Turkey Point Peninsula and coastal Biscayne Bay near the plant, including the barge turning area.

EIS 4.2-***

Provide all data being gathered for surface waters associated with the Units 3 and 4 uprate monitoring program, including water quality (salinity, temperature, TDS, dissolved oxygen, organics, heavy metals, nitrogen, phosphorus, carbon, tritium), velocity, and exchange measurements. The provided data should include some measures of its temporal variability. This information is requested for the cumulative impacts analysis.

EIS 4.2-***

Describe any changes to the plans presented in the ER for controlling groundwater inflow to the power block excavations, any revised calculations of groundwater inflow to the excavations, and any revised plans for disposal of water removed from the excavations.

Describe the maximum expected flow rate and total volume of groundwater expected to be removed while dewatering the power block excavations.

EIS 4.2-***

Describe the range of volumes of groundwater expected to be removed or the range of expected flow rates and durations, and describe the affected aquifers, for all anticipated dewatering activities associated with installation of pipelines, radial collector wells, transmission towers, roads, the reclaimed water treatment facility, and other buildings and facilities other than the power block excavations. Also describe specific techniques that will be used to control withdrawal rates and protect the quality of surface and groundwater.

EIS 4.2-***

Describe the effects, if any, that groundwater pumping and discharge associated with excavation dewatering will have on the hypersaline groundwater plume from the existing cooling canals.

EIS 4.2-***

Describe the potential impacts to groundwater and to the L-31 canal that may be caused by evaporation from the approximately 300 acre lake that would result from using the FPL owned fill source described in the ER. If other commercial sources of fill material will be used, describe the effects, if any, on groundwater and surface water from the expansion of these sources to meet FPL's needs, including impacts to groundwater from any active or passive dewatering of the shallow aquifer.

EIS 4.2-***

Provide "Hydrologic Associates 2009: Summary of Hydrologic, Geologic, and Salinity for FPL Owned Fill Source Water Mgmt Project Area (June 2009)."

EIS 4.2-***

Borrow areas are mentioned in Section 4.2.1 Hydrologic Alterations, which are created from excavation activities to provide fill material for building Units 6 and 7. One of those borrow areas includes a "water management feature" created at an FPL fill source and is discussed in Section 4.1.2.3 FPL-Owned Fill Source and in Section 5.2.1.2.1 Fill Borrow Areas. In Section 4.1 the "water management feature" is stated as being a "newly created lake," and according to Section 5.2 it "would be designed to store excess stormwater to complement regional wetland rehydration projects." Clarify the intended use of the "water management feature," and whether this would be a water of the state of Florida or of the United States. If the "water management feature" is to be used to store stormwater, provide the estimated average and maximum monthly discharges into the water management feature.

Draft Request for Additional Information No. 5768

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-***

During the site audit staff reviewed the document "Task 1.4: Analysis of Baseline water source technical review report: HDR Dec. 2007", in particular Figure 1.0, which shows overlap of plant footprint with projects that result in cumulative impacts to surface and groundwater resources. Provide this document in a referenceable form.

EIS 7.2-***

During the Site Audit staff reviewed "Water Management Project Design Document: CH2MHill Oct 2009". Provide this document in a referenceable form. 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-***

Provide a copy of the personal communication between Scroggs (FPL) and Marc C. LaFerrier/Miami Dade County, Department of Planning and Zoning dated August 7, 2008, as cited in Water Management Project Design Document: CH2MHill Oct 2009.

EIS 7.2-***

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.

EIS 7.2-***

Explain to what extent the building and operation of the new units (radial 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 and assumptions for determining the impacts.

EIS 7.2-***

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 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-***

Provide available historical and current data on groundwater chemistry including chemical constituents (including barium), radionuclides, and stable isotopes from wells within a 2 mile radius of the proposed plant locations. Also, provide any additional data on chemical constituents (including barium), 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.

EIS 7.2-***

Describe the current understanding of the lateral and vertical configuration of the hypersaline plume from the existing cooling canals, including the location and temporal movement of chloride isopleths and temperature isopleths.