

PMTurkeyCOLPEm Resource

From: Kugler, Andrew
Sent: Thursday, May 05, 2011 7:56 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 5766 and 5767-Hydrology for Chapter 5
Attachments: 110505-Draft RAI 5767 - Hydro 5-3.doc; 110505-Draft RAI 5766 - Hydro 5-2.doc

Steve

Attached are draft RAIs 5766 and 5767 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 Chapter 5.

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 5767 relates to ER Section 5.3, but EIS Section 5.2.

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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Draft Request for Additional Information No. 5767

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 5.3

QUESTIONS for Environmental Technical Support Branch (RENV)

EIS 5.2-***

Provide site-specific measurements of the vertical and horizontal hydraulic conductivity and the thickness of the confining geologic unit that is expected to isolate the Boulder Zone from the overlying Upper Floridan aquifer at the site of the wastewater injection wells.

EIS 5.2-***

Describe the expected range of temperature and specific gravity of the wastewater that will be injected to the Boulder Zone.

EIS 5.2-***

Provide measurements of the temperature and specific gravity of groundwater within the depth interval of the Boulder Zone where wastewater will be injected.

EIS 5.2-***

Explain why upward leakage from the Boulder Zone to the Upper Floridan aquifer is not expected at the FPL wastewater injection wells in light of observed upward leakage at the Miami-Dade County South District Wastewater Treatment Plant.

EIS 5.2-***

Provide details of the planned operational monitoring of the deep injection wells including parameters, sampling frequency, reporting methods, action levels, and actions that will be taken if vertical migration of injected wastewater is detected.

Draft Request for Additional Information No. 5766

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-***

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 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.

EIS 5.2-***

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-***

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-***

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-***

Provide the document, "Cooling water supply and disposal conceptual design report: FPL proposed units 6&7 at Turkey Point" prepared in March 2009. This report is requested to provide information on the temporal distribution and maximum and average water available as reclaimed water, and the temporal distribution and maximum and

average water quality for the reclaimed water. The document also provides other information about water quality and chemicals to be used for treatment, including the planned treatment at the South Dade Waste Water Treatment Plant.

EIS 5.2-***

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-***

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-***

Provide an analysis of the reclaimed water treatment facility stormwater capacity and runoff. Include a figure showing storm water discharge locations.

EIS 5.2-***

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. This information is requested for the cumulative impacts analysis.

EIS 5.2-***

The review team requests information on the quality of water that will be delivered to the Turkey Point Site. Provide water quality data (concentrations) for proposed plant water supply sources including reclaimed wastewater and water from radial wells. Provide the water quality data at a frequency sufficient to characterize seasonal variability (monthly intervals if available). The water quality constituent data of interest focuses on EPA priority and non-priority constituents and emerging constituents of concern. These include but are not limited to such constituents as the following: salinity; total suspended

solids; nutrients (e.g., nitrogen, phosphorus); etiologic agents (e.g., fecal coliform); heavy metals/inorganics (e.g., mercury, antimony, arsenic, selenium, beryllium, cadmium, lead); pharmaceuticals (e.g., triclosan, warfarin, estradiol or other hormones); and organics (for example, but not limited to, phenol, anthracene, naphthalene, phthalate, benzene). Discuss the transitioning between sources that would be necessary during times of low water availability.

EIS 5.2-***

The proposed cooling water supply sources are reclaimed wastewater and marine water from Biscayne Bay. The use of reclaimed wastewater may necessitate the use of treatment to produce water quality suitable for use in the cooling water system. Explain anticipated treatment needs and methods. Provide an estimate of the volume of waste that would be generated from treatment. Provide a discussion of the methods for disposal of any sludge produced from treatment. Include in the discussion the effect of treatment on concentrations of EPA priority pollutants and emerging constituents of concern.

EIS 5.2-***

The review team requests information on the quality of water that will enter the condenser cooling system and how the condenser cooling system will alter the water quality. Provide a process flow diagram with description of the proposed FPL reclaimed water treatment plant including characterization of plant effluent. Provide a technical discussion and analysis of the effect that the proposed cooling tower (heat transfer) process will have on the reclaimed water constituents (concentrations and transformations). 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-***

Provide water quality/chemical concentrations for cooling water to be used from radial collector wells. Provide an evaluation on the effect that the cooling tower (heat transfer) process has on the radial collector well water constituents (concentrations and transformations).

Radial collector well water constituents to be addressed include: TDS, total suspended solids, chlorides, organics and metals.