

TurkeyPoint34SLREISCEm Resource

From: Higgins, Jamie <Higgins.Jamie@epa.gov>
Sent: Wednesday, June 20, 2018 10:58 AM
To: Burton, William
Cc: Moser, Michelle; Higgins, Jamie; Militscher, Chris
Subject: [External_Sender] Turkey Point Scoping Comments
Attachments: EPA.turkey point 3 and 4 scoping comments.FINALdocx.pdf

Butch,

Please find attached EPA's scoping comments for FPL's License Renewal for Turkey Point Units 3 and 4. Please let us know if you have questions.

Thanks,
Jamie

Jamie Higgins
National Environmental Policy Act (NEPA) Program Office
Resource Conservation Restoration Division
Region 4, Environmental Protection Agency
61 Forsyth Street, NW
Atlanta, GA 30303
404-562-9681

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**Nuclear Regulatory Commission
Turkey Point Nuclear Plant Units 3 and 4
Environmental Impact Statement
US Environmental Protection Agency
Scoping Comments
June 20, 2018**

Background: According to the Nuclear Regulatory Commission's (NRC) Federal Register Notice of Intent (NOI) dated May 22, 2018, the Florida Power and Light (FPL) is requesting a 20-year facility operating license renewal of the Turkey Point Nuclear Plant Units 3 and 4 from the NRC. Turkey Point is located in Miami-Dade County, Florida. The NRC is requesting scoping comments from the public and state and Federal agencies for their development of the Turkey Point Nuclear Plant Units 3 and 4 (Turkey Point) Environmental Impact Statement (EIS). The current renewed operating license for Unit 3 expires at midnight on July 19, 2032, and the current renewed operating license for Unit 4 expires at midnight on April 10, 2033. The application for subsequent license renewal was submitted pursuant to Part 54 of Title 10 of the *Code of Federal Regulations* (10 CFR). Possible alternatives to the proposed action include the no action alternative and reasonable alternative energy sources. The EPA's scoping comments are based on limited information provided by the NRC's Federal Register notice and limited review of the *Florida Power and Light Turkey Point Nuclear Plant Units 3 and 4 Subsequent License Renewal Application* (FPL's Renewal Application). Although separate actions, the EPA notes that we have previously commented on the NRC's Turkey Point Nuclear Plant Units 6 and 7 Combined Licenses Draft EIS (Turkey Point Units 6 and 7 EIS) on July 14, 2015, and Final EIS on December 22, 2016. The EPA staff participated in the NRC's interagency government to government conference call on May 29, 2018, the NRC's scoping public meeting in Homestead, Florida on May 31, 2018, and the NRC's interagency meeting in Homestead, Florida on June 18, 2018.

Groundwater and Drinking Water Impacts:

- The westward extent of saltwater intrusion, or the fresh/saltwater interface (FSI), at the Turkey Point facility is approximately 4 to 5 miles. Continued migration of the FSI threatens municipal drinking water facilities and industrial complexes west of the Cooling Canal System (CCS). An above background (20 pCi/L) tritium plume roughly coincides with the FSI, however, it is difficult to determine the specific CCS effect on the position of the FSI due to diffusion and regional salt water intrusion (natural and industrial/municipal influenced). A directly attributable impact occurs as a hypersaline plume that migrated vertically downward and migrated east and west of the CCS within the Biscayne Aquifer, which has been designated a Sole Source Aquifer (<https://www.epa.gov/dwssa>, please see "SSA Project Review" Section) by the Environmental Protection Agency.

- CCS impacts on Biscayne Bay proper are also difficult to characterize as the system is extremely dynamic (waves, tides, etc.) and mixing/diffusion within the extremely large volume would quickly make impacts un-measurable. Based on contaminant detections in near-CCS and Bay-related surface water bodies (tidal waters), however, it is reasonable to postulate that impacts have occurred. The CCS has impacted and continues to impact ground and surface water resources. Therefore, the EPA recommends NRC evaluate other new, modern technology (i.e. cooling towers) to replace the antiquated CCS.
- FPL entered into consent agreements with Florida Department of Environmental Protection (FDEP) and Miami-Dade County pertaining to environmental issues at Turkey Point (Miami-Dade County, 10/6/15: FDEP, 6/20/16). The agreements addressed the western migration of hypersaline water emanating from the CCS at the site, and how to go about halting and remediating these impacts. To the extent possible or appropriate, the EPA recommends NRC be aware of these agreements, and to incorporate stipulations or conditional aspects during licensing to aid in ensuring that FPL remains compliant with the agreement requirements.

Surface Water Quality Standards Impacts: The EPA is concerned about impacts to surface water quality as it relates to Biscayne Bay. The FPL’s Renewal Application states that *“Turkey Point does not directly discharge to fresh or marine surface waters; however, because the canals are not lined, groundwater does interact with water in the canals.”* (page 2-7).

However, the EPA notes that FPL executed an addendum to an existing Consent Agreement in August of 2016 (2016 CAA) with the Miami-Dade County Department of Environmental Resources Management (MDC DERM) to take action to address violations of the water quality standards for ammonia exceedances located in deep remnant canals adjacent to the CCS (page 3-93). The 2016 CAA states, *“This Consent Agreement requires FPL to take action to address the County’s alleged violations of County water quality standards and criteria in groundwaters outside the CCS as described in the NOV.”*

Given the recent Notice of Violation (NOV) and subsequent 2016 CAA, the EPA recommends the NRC evaluate the CCS’s impacts to the surface water of Biscayne Bay. To better understand the CCS interaction of the groundwater and surface water, the EPA recommends that the NRC evaluate and verify FPL’s claim that surface water quality has not been impacted by the CCS by including surface water data on the bay side of the CCS that verifies that there are no constituents (i.e., tritium) from the CCS in the waters immediately east and south of the CCS. One way that NRC could evaluate and verify these claims is through conducting a dye study, which would visibly show the releases from the CCS to the adjacent surface waters. Additionally, the FPL could include the results of temperature monitoring and biological surveys immediately east and south of the canals to show that the applicable Florida water quality standards for temperature are not being violated, as well as any applicable water quality standards related to the biological integrity of aquatic organisms and community in surface waters in the vicinity of the CCS.

Cooling Canal System (CCS) Impacts: As previously stated, the EPA is concerned with the performance of the CCS as it relates to complying with water quality and drinking water standards. As documented in FPL’s Renewal Application, the CCS has a history of compliance issues related to groundwater and drinking water and is currently under a 2016 Consent Order (CO) with the Florida Department of Environmental Protection (FDEP) (2016 CO). As stated in FPL’s Renewal Application (page 3-93),

“The primary objectives of the 2016 CO are to: (1) cease discharges from the CCS that impair the reasonable and beneficial use of the adjacent G-II groundwaters west of the CCS; (2) prevent releases of groundwater from the CCS to surface waters connected to Biscayne Bay that result in exceedances of surface water quality standards in Biscayne Bay by undertaking restoration projects at Turtle Point and Barge Basin; and (3) provide mitigation to address impacts due to historic operation of the CCS”.

Additionally, FPL executed an addendum to an existing Consent Agreement in August of 2016 (2016 CAA) with the MDC DERM to take actions to address violations of the water quality standards for ammonia exceedances located in deep remnant canals adjacent to the CCS (page 3-93).

The EPA is also concerned with the potential impacts to the CCS due to sea level rise. Given the CCS’s close proximity to the ocean and lower elevation, the EPA is concerned that rising sea levels could impact the operations of the CCS and further exacerbate the high salinity plume underneath the CCS.

It is also EPA’s understanding that FPL has indefinitely postponed the construction of Turkey Point Units 6 and 7 due to energy resource economics, therefore, it is assumed that the additional production requirements will be met by retrofitting and uprating the existing units. Given the outdated technology, compliance issues and vulnerability to sea level rise, the EPA recommends the NRC consider evaluating potentially replacing the CCS with newer, modern alternatives (i.e., cooling towers).

Hurricane and Storm Impacts/Climate Resiliency: As a part of the Turkey Point Units 6 and 7 COL, the NRC released the *“Final Safety Evaluation Report (FSER) for Turkey Point for Units 6 and 7 Combined License (COL)”* on November 10, 2016. Within Chapter 2 (Site Characterization), FPL provided the NRC with storm surge analysis using the National Weather Service’s ‘SLOSH’ (Sea, Lake, and Overland Surges from Hurricane) and conducted a ‘Probable Maximum Storm Surge Analysis’ (PMSS). This analysis was also conducted in the context of forecasted sea level rise. The NRC also performed limited confirmatory analysis using SLOSH. Additionally, the NRC and the USACE conducted hurricane modeling and storm surge analysis by combining “various wind models, the WAM offshore and STWAVE nearshore wave models, and the ADCIRC basin-to-channel scale unstructured grid circulation model.” (Page 2-129, FSER). The EPA notes that the FSER states:

“The applicant noted that the estimated PMSS still-water level at Turkey Point Units 6 and 7, combined with coincidental wind-wave run-up, of approximately 24.8 ft (7.6 m) NAVD 88 is lower than the design plant grade elevation of 26 ft (7.9 m) NAVD 88 for safety-related facilities.” (page 2-138)

In FPL’s Renewal Application for Units 3 and 4, FPL discusses the flooding potential and the elevation of the various structures including the statement:

“Class 1 structures on the PTN site are flood protected up to a minimum elevation of 18.35 NAVD88 (20 feet mean level of water [MLW]). Components vital to safety, with the exception of the ICW pumps protected to 20.85 NAVD88 (22.5 feet MLW), are protected against flood tides, and wave runup, to 20.35 NAVD88 (22 feet MLW) on the east side of PTN.” (page 3-87)

The EPA is concerned that Units 3 and 4 (and associated facilities) are susceptible to storm surge and subsequent flooding because their elevation is below the predicted storm wind-wave runup of 24.8 feet. In EPA’s FEIS comment letter for the Turkey Point Units 6 and 7, we noted that the hurricane and storm impacts information was not included in the FEIS and included within the FSER. We noted that information should be included within the FEIS. We also stated that the potential impacts of the PMSS event that was estimated to be 24.8 ft. and any potential damage that might be incurred to the facility (i.e., wave erosion and undercutting of the facility, damage due to debris impacts, etc.) were not evaluated. In addition, the EPA expressed an environmental concern regarding the lack of analysis of reasonably foreseeable future land use and population growth in considering potential impacts of a catastrophic storm event.

The EPA recommends the NRC conduct a robust hurricane and storm surge and climate resiliency analysis that includes the potential damage to the facilities due to wave erosion, undercutting of the facility, damage due to debris impacts, etc. Additionally, the EPA recommends the NRC evaluate the facilities climate resiliency to increased frequency and intensity of future storms and sea level rise. The EPA also recommends that the NRC evaluate future population growth and land use when determining potential impacts associated with a catastrophic storm event.

Flooding Impacts: The EPA is concerned about the potential flooding impacts associated with Units 3 and 4 and associated facilities. FPL states in their Renewal Application that,

“Approximately 27 percent of the property has been designated by FEMA to be within the coastal flood zone with base flood elevations of 11 to 14 feet and 70 percent where the canal system is located has no base flood elevations determined.” (page 3-87)

The EPA is concerned that an intense storm event could pose flooding to the facility especially at the CCS. The EPA recommends the NRC evaluate the likelihood of the facility flooding (especially the CCS) and any impacts to the local population and aquatic species in Biscayne Bay.

Environmental Justice (EJ) Impacts: Pursuant to Executive Order 12898, the Applicant's Appendix E- Environmental Report (ER) (ER - Sections 3.11 and 4.10) includes demographic and impact data related to minority and low-income populations. The project area contains minority and low-income populations within the 50-mile project area that includes Miami-Dade County. Thresholds were used to compare race and income data at the block group level to the reference population and this analytical approach is consistent with the Council for Environmental Quality EJ Guidance and the Promising Practices for EJ Methodologies in NEPA Reviews. However, the EPA has environmental concerns regarding how the *Meaningfully Greater Criteria threshold* was applied. The manner in which the threshold is applied can mean that minority or low-income populations may not be appropriately identified. For example, 20% is simply added to the reference population (i.e., 20% threshold+78.5% minority population = 98.5 minority threshold).

According to the ER, impacts to minority and low-income populations and subsistence consumption from continued operations and refurbishment associated with license renewals will be addressed in plant specific reviews. The ER concluded that there are no disproportionately high and adverse environmental or health impacts on low-income and minority populations as a result of the proposed project.

The EPA recommends that the EJ communities should be involved in meaningful discussions throughout the decision-making process to help identify potential benefits and burdens associated with licensing and permitting decisions. Adaptive and innovative approaches to both public outreach and community involvement regarding project issues should take place during the project planning. We also recommend that the Draft EIS include information about the outreach and participation methods to minority and low-income populations that may have limited English proficiency, particularly because migrant workers that are primarily Hispanic are located relatively close to the proposed site. We also suggest that Native American tribes and populations that may utilize area resources for hunting, fishing or gardening as part of their cultural practice or for subsistence should continue to be coordinated with during the EIS process.

As part of the EJ analysis, the *Meaningfully Greater Criteria* threshold should be used to yield consistent benchmarks. For example, this involves taking the threshold and initially multiplying it by the percent minority population, 20% of 78.5% minority population, which is 15.7, and then adding that to 78.5+15.7, resulting in a benchmark of 94.2%. Using this mathematical calculation will yield consistent benchmarks that will be 20% higher than the reference population, regardless of the initial percent population value. We recommend that the threshold value in this manner be reincorporated into Tables 3.11-4, 3-11-4, and other relevant sections of the ER.

Biscayne National Park and Biscayne Bay Aquatic Preserve Impacts: The EPA also has environmental concerns about water quality impacts to Biscayne National Park (BNP) and Biscayne Bay Aquatic Preserve (BBAP). The BNP and BBAP are unique aquatic ecosystems of

national significance and the EPA recommends the NRC evaluate the continued operations of the Turkey Point Units 3 and 4 will have (especially the CCS) on the BNP and BBAP.

Cumulative Impacts: The EPA recommends the NRC conduct a thorough cumulative impacts analysis that considers the construction and operation of Turkey Point Units 6 and 7. The EPA acknowledges that FPL has decided to indefinitely postpone the construction and operation of Units 6 and 7. However, Units 6 and 7 should be included in the cumulative impacts analysis because the NRC has approved the license application and their eventual construction is ‘reasonably foreseeable’. We recommend that the analysis consider impacts related to sea level rise and the facilities’ resiliency to hurricane and storm events. Also, a thorough analysis would include the operation of the CCS’s long term impacts to groundwater and drinking water wells and surficial waters of Biscayne Bay and the Biscayne National Park.

Public Outreach and Risk Communication: The EPA notes that the NRC published the NOI requesting public scoping comments on May 22, 2018, and announced public scoping comment meetings for May 31, 2018. This provided the public and other stakeholders only 7 business days’ notification of the public scoping comment meetings. To ensure better participation from the public, the environmental community and other stakeholders as well as state, local and Federal agencies, the EPA recommends that the NRC give more notification prior to public meetings.

From EPA’s perspective, one of the most important aspects of the proposed action includes effective risk communication with the public and other stakeholders. There has been substantial media and public interest in the groundwater contamination from the hypersaline plume. The EPA recommends that the NRC provide periodic updates to the public on the effectiveness of ongoing remediation efforts being conducted by FPL with respect to the migration of the hypersaline plume. We also suggest that the DEIS include a summary of ongoing remediation progress to date and the efforts to meet regulatory compliance under the Consent Agreements.