

RE: Notice of Intent to Prepare a Supplement to the Final Supplemental Environmental Impact Statement for the Subsequent License Renewal for Turkey Point Nuclear Generating Unit Nos. 3 and 4, Docket ID NRC-2022-0172

Dear Stacy Schumann:

The U.S. Environmental Protection Agency (EPA) has reviewed the Nuclear Regulatory Commission's (NRC) Notice of Intent (NOI) to prepare an Environmental Impact Statement Supplemental 2 (SEIS), in accordance with Section 309 of the Clean Air Act (CAA) and Section 102(2)(C) of the National Environmental Policy Act (NEPA). The CAA Section 309 role is unique to EPA. It requires EPA to review and comment publicly on any proposed federal action subject to NEPA's environmental impact statement requirement. The purpose of the SEIS is to address the environmental effects associated with obtaining relicensing renewals for Florida Power & Light Company's (FPL) DPR-31 and DPR-41 for Turkey Point Nuclear Generating Unit Nos. 3 and 4 (Turkey Point).

According to the NOI, the subsequent relicensing renewed (SLR) operating licenses would authorize the applicant to operate Turkey Point for an additional 20 years beyond the period specified in each of the current licenses. The current operating licenses for Turkey Point Unit Nos. 3 and 4 expire on July 19, 2032, and April 10, 2033, respectively.

The EPA recommends that the SEIS evaluate the historical effects of the proposed projects and describe efforts to address the following potential impacts of the proposed action in the SEIS.

- (1) National Environmental Policy Act-** The 40 CFR §1502.22 states, *“If the agency is considering a cost-benefit analysis for the proposed action relevant to the choice among alternatives with different environmental effects, the agency shall incorporate the cost-benefit analysis by reference or append it to the statement as an aid in evaluating the environmental consequences. In such cases, to assess the adequacy of compliance with section 102(2)(B) of NEPA (ensuring appropriate consideration of unquantified environmental amenities and values in decision making, along with economical and technical considerations), the statement shall discuss the relationship between that analysis and any analyses of unquantified environmental impacts, values, and amenities.”* If a cost-benefit analysis is being considered, then the SEIS should include a discussion about how the cost-benefit analysis could affect the alternatives.
- (2) Indirect and Cumulative Impacts-** Several potential, cumulative, and indirect project impacts are of particular concern at Turkey Point, including radionuclides and hypersalinity in surface water and groundwater. Also, there are issues of concern related

to nuclear power plants, including: groundwater monitoring for radionuclides, underground injection of effluent, spent nuclear fuel storage, contaminant transport and deposition, Clean Water Act (CWA) issues for surface and groundwater discharges, the impact of severe storm events affected by climate change, and analysis of communities with Environmental Justice concerns.

The existing unlined Industrial Waste Facility/Cooling Canal System (CCS) for Units 3 and 4 has issues regarding radionuclides and hypersalinity that represent the EPA's primary concerns. Releases from the CCS into the adjacent Biscayne Bay, surrounding terrestrial environments, and inland groundwater could potentially contribute to existing issues, and thereby increase cumulative impacts.

The EPA notes that the Florida Department of Environmental Protection (FDEP) and the Miami-Dade County Department of Environmental Resources Management (DERM) have historically entered into consent agreements with FPL to address issues related to the CCS. The EPA supports the FDEP and DERM's efforts to work with FPL to remediate impacts of the hypersaline plume on groundwater and impacts of ammonia on surface waters. Past consent agreements have outlined various corrective actions to address issues related to the CCS. The EPA recommends that NRC consider incorporating language into the SEIS or license stating that FPL develop and submit an alternative mitigation plan to address water quality if FPL's monitoring results demonstrate that corrective measures identified in the consent agreements were not effective. As part of this condition, we recommend that the NRC and the licensee provide a detailed discussion on the re-evaluation process that would reassess alternative corrective measures with respect to the CCS.

- (3) ***Groundwater Impacts-*** The Biscayne aquifer, an EPA-designated sole source aquifer serving as a drinking water resource in the south Florida area, has unacceptable hypersalinity impacts, and the EPA is concerned that the proposed project may result in further migration of a hypersaline lens towards public water supply wells. We are concerned about the potential for additional and cumulative impacts to this aquifer, and the risks to public drinking water supply. The SEIS should address the condition of the Biscayne aquifer.
- (4) ***Underground Injection of Effluents-*** The EPA has a concern regarding the underground injection of effluent into the Boulder Zone, a cavernous, high-permeability South Florida geologic horizon within the Lower Floridan aquifer system. The SEIS should address the blowdown from the cooling towers, and other plant discharge effluents from proposed Units 6 and 7, if these discharges are to be injected into the Boulder Zone. The SEIS should address issues regarding vertical migration of injectate.
- (5) ***Radionuclides-*** Existing and historic operations at Turkey Point have resulted in radionuclides (tritium, strontium, cesium) migrating into Biscayne Bay and Biscayne Aquifer. The SEIS should include a discussion regarding potential cumulative impacts and environmental stressors related to additional discharges.

- (6) **Nuclear waste storage-** Liquid, gaseous, and solid radioactive waste management systems would collect and treat the radioactive byproducts of operating the proposed Turkey Point Units 6 and 7, and these byproducts would be handled separately from existing Units 3 and 4. Spent nuclear fuel will require continued on-site storage. Due to the uncertainty regarding the future availability of a geologic repository or other away-from-reactor storage facility, on-site storage may be required for many decades, until a permanent repository is established. The SEIS should evaluate safety concerns for potential flooding and should evaluate storage plans of spent nuclear fuel that will be handled to prevent contamination in the event of flooding at the site.
- (7) **National Pollution Discharge Elimination System (NPDES)-** The EPA acknowledges that the NRC conducted a water balance analysis and provided additional information from past studies. In addition to the water balance calculation of the CCS, the EPA also recommended the NRC address the structural integrity of the CCS. While the current NPDES permit requires monitoring of the berms for structural issues, to ensure that there are no point source discharges from the cooling ponds to the adjacent surface waters, it is important for the facility to use relevant techniques to verify that all CCS barriers are intact and able to retain nutrient-rich wastewater. The EPA recommends NRC consider this issue as part of the Aging Management Program or other relevant mechanism and include the potential discharges of increased peak storm events such as tropic storms and hurricanes.
- (8) **Wetlands and Streams-** To support wetland and stream mitigation decisions and to help FDEP evaluate potential stream impact requirements for the Clean Water Act (CWA) Section 401 Water Quality Certification, information regarding CWA Section 404(b)(1) should be included in the SEIS. Providing adequate wetland and stream information within the NEPA process can help to streamline the final environmental review and permitting processes for these resources.
- The SEIS should provide a detailed discussion regarding the potential significant impacts to state and federal resources, such as the Everglades National Park, Biscayne National Park, and Biscayne Bay Aquatic Preserve that comply with the most current Comprehensive Everglades Restoration Plan.
- (9) **Waste Disposal-** The SEIS should indicate if there will be any changes in the generation of waste including low-level radioactive waste, mixed low-level radioactive waste, transuranic waste, and hazardous and Toxic Substance Control Act wastes over the life of the program. The SEIS should indicate where FPL will send the spent nuclear fuel and spent fuel debris for storage pending long-term disposal options.
- (10) **Climate-** Climate change may impact the proposed project, posing threats to aging infrastructure, worker health and safety and the environment. We recommend that the SEIS include an evaluation of climate-related impacts including discussions of frequency and severity of major storm events, wildfires, or drought that could lead to power disruptions or increased cooling demands in summer months. Efforts that FPL is taking at

FPL to address and adapt to potential climate impacts should also be discussed in the SEIS.

(11) Hurricane and Storm Impacts-The EPA acknowledges past environmental assessments have been updated to better explain the hurricane surge description differences between the licensing of Turkey Point Units 6 and 7 and the relicensing of Units 3 and 4. The NRC SEIS should explain the differences that result from using different storm prediction models as well as the validations of these models. Sea level rise should be incorporated into a discussion with a Sea, Lakes, Overland and Surge from Hurricane (SLOSH) model, which is also used by the National Weather Service and federal agencies when determining storm surge predictions. The EPA recommends that the SEIS provide a detailed description of any other model used for determining storm surge and flooding, and the rationale for using another model over the SLOSH model.

(12) Environmental Justice- Executive Order (E.O.) 12898 directs federal agencies to identify and address any disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority, low-income, tribal, and indigenous populations. The SEIS should include an analysis that is consistent with E.O. 12898. The analysis should indicate whether minority, low income, tribal, and indigenous populations reside within the vicinity of the proposed project area. It would also be helpful to include a current map depicting the population demographics near the facility.

Assessing data using EJScreen (<https://www.epa.gov/ejscreen>), the EPA's nationally consistent environmental justice (EJ) screening and mapping tool, is a useful first step in understanding or highlighting geographic locations that may need further review or outreach. The tool provides information on environmental and socioeconomic indicators as well as pollution sources, health disparities, critical service gaps, and climate change data. The tool can help identify potential community vulnerabilities by calculating EJ Indexes and displaying other environmental and socioeconomic information in color-coded maps and standard data reports.

If communities with EJ concerns are located within the vicinity of the proposed project area or potentially affected by the proposed project, the EPA recommends the NRC meaningfully involve these communities throughout the decision-making process to help identify potential benefits and burdens associated with relicensing and permitting decisions. Adaptive and innovative approaches to both public outreach and community involvement regarding project issues should take place during the project planning.

The EPA appreciates the opportunity to provide comments on the proposed project. If you have any questions regarding our comments, please contact Mr. Larry Long of the NEPA Section by phone at (404) 562-9460, or by e-mail at long.larry@epa.gov.

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