June 21, 2018

Brian Holian
Acting Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

RE: Docket ID NRC-2018-0101, Turkey Point Nuclear Plant, Units 3 & 4 – Subsequent License Renewal Application Scoping Process

Dear Mr. Holian,

On behalf of Miami Waterkeeper (MWK) and the National Parks Conservation Association (NPCA), we thank you for the opportunity to provide comments as part of the scoping process for the Turkey Point Nuclear Plant, Units 3 & 4 Subsequent License Renewal Application released by the Nuclear Regulatory Commission (NRC) under Docket ID NRC-2018-0101. Our organizations and our more than one million members and supporters nationwide have a strong interest in ensuring that current and future operations of Turkey Point Nuclear Plant, owned and operated by Florida Power & Light (FPL), do not cause detrimental impacts to the surrounding environment, including regional water resources, national parks, wildlife, and sensitive wetlands. As part of the National Environmental Policy Act (NEPA) review process, we strongly urge you to include as part of the Supplemental Environmental Impact Statement (SEIS) an in-depth analysis of the environmental impacts associated with the continued operation of Turkey Point's industrial wastewater facility cooling canal system (CCS) and the plant's vulnerability to sea level rise and storm events.

National Parks and Protected Areas

Located directly adjacent to Turkey Point, Biscayne National Park is a national treasure and protects a large portion of the third largest barrier reef ecosystem in the world. It safeguards some of the only living coral reef in the continental United States and is home to vast biodiversity and unique habitats. The park was established "to preserve and protect for the education, inspiration, recreation, and enjoyment of present and future generations a rare combination of terrestrial, marine, and amphibious life in a tropical setting of great natural beauty."[1] Biscayne National Park covers over 172,000 acres, 95% of which is water, and has been designated an Outstanding Florida Water (OFW) under Florida law, as part of Biscayne Bay. The park supports over 600 species of fish, 200 bird species and 21 federally listed threatened or endangered species and protects the longest stretch of mangrove shoreline along the eastern seaboard of the United States. Highly valued recreation activities within Biscayne National Park include snorkeling, paddling, wildlife viewing, fishing, camping, hiking, and scuba diving.

Turkey Point is also proximate to Everglades National Park, the Biscayne Bay Aquatic Preserve, Crocodile Lake National Wildlife Refuge, and the Florida Keys National Marine Sanctuary. These natural areas offer critical protection to sensitive ecosystems, wildlife, and unique habitat, and support the local economy through recreation opportunities, tourism, and the provision of ecological goods and services. These areas must therefore be protected from any detrimental impacts arising from the operations of Turkey

[1] 16 U.S.C. 410gg

Point. We urge you to include a thorough examination of any environmental impacts to these natural areas that may arise from the Subsequent License Renewal of Turkey Point Units 3 & 4.

Turkey Point's Industrial Wastewater Facility Cooling Canal System

Turkey Point is unique among nuclear plants in the United States in that it uses a system of unlined cooling canals to cool water from plant operations. The CCS, in place for more than 40 years, consists of approximately 5,900 acres of former wetlands along the coast of Biscayne Bay and Biscayne National Park. It is used to cool water from nuclear power Units 3 & 4 and to dispose of wastewater from the operations of natural gas Unit 5. When the system was constructed under a 1971 consent decree, the CCS was intended to be a closed loop system. However, due to South Florida's porous limestone geology, the CCS is hydrologically connected to the underlying Biscayne Aquifer and, through the Aquifer, to surrounding surface waters.[2]

Over the years, water in the CCS has become hypersaline, increasing in density and sinking into groundwater, ultimately creating an underground hypersaline plume. The plume is spreading out into the Biscayne Aquifer "at an average rate of migration to the west estimated between 525 (northern part) and 660 (southern part) feet per year,"[3] towards several wellfields that supply drinking water to the residents of the Florida Keys and southern Miami-Dade County. The plume is also moving east, under the waters of Biscayne Bay and Biscayne National Park. Moreover, monitoring data indicate that water from the CCS is also hydrologically connected to the waters of Biscayne Bay, with CCS water moving through or under berms.[4] Pollutants from the CCS, including elevated levels of ammonia, phosphorus, TKN, total nitrogen, and chlorophyll *a*, have been detected in the waters of Biscayne Bay.[5] The addition of excess nutrients like ammonia and phosphorus into the nutrient-limited waters of Biscayne Bay and Biscayne National Park has the potential to stimulate algal growth,[6] which could ultimately lead to seagrass die-offs, toxic algal blooms, and severe ecosystem disruption, thus presenting a serious ecological concern.

In response to pollution emanating from Turkey Point's CCS, both Miami-Dade County[7] and the Florida Department of Environmental Protection (FDEP)[8] issued Notices of Violation to FPL for violating applicable County and State water quality standards. FPL entered into separate Consent Orders with

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[2] Hefty, Lee, Miami-Dade Department of Environmental Resources Management, Letter to Phil Coram, Florida Department of Environmental Protection, November 26, 2014.

[3] Florida Department of Environmental Protection Administrative Order in Re: Florida Power & Light Company, Turkey Point Power Plant, DEP State License No. PA03-45, OGC No. 14-0741, December 23, 2014.

[4] Cox, William L., U.S. Department of Interior National Park Service, Letter to James D. Giattina, U.S. Environmental Protection Agency; Jonathan P. Steverson, Florida Department of Environmental Protection; and Jack Osterholt, Miami-Dade County, May 13, 2016.

[5] Miami-Dade County Report on Biscayne Bay Water Quality Observations associated with the Turkey Point Cooling Canal System operations, March 7, 2016 Memorandum from Mayor Carlos A. Gimenez to Miami-Dade County Board of County Commissioners Chair Jean Monestime and members.

[6] Cox, William, US DOI NPS letter to EPA, DEP, MDC, May 13, 2016.

[7] Miami-Dade County Department of Regulatory and Economic Resources, Notice of Violation and Orders for Corrective Action, October 2, 2015.

[8] Florida Department of Environmental Protection, Notice of Violation and Orders for Corrective Action, OGC File No: 16-0241, April 25, 2016.

both Miami-Dade County[9] and FDEP[10] aimed at ceasing CCS discharges into the Biscayne Aquifer and surrounding surface waters, retracting the plume to within Turkey Point property boundaries, mitigating for impacts related to CCS operation, and monitoring to detect additional impacts. FPL is still in the initial phases of implementing corrective actions and the efficacy of these actions in addressing the full extent of pollution emanating from the CCS has yet to be determined. Environmental impacts associated with the continued operation of Units 3 & 4 will be heavily reliant on FPL's ability to comply with the requirements of these orders. Therefore, alternatives developed as part of the Subsequent License Renewal NEPA process must include an evaluation of a range of scenarios related to FPL's ability or inability to comply with the aforementioned Consent Orders and address pollution associated with Turkey Point's CCS. We believe that compliance with these Consent Orders must be a condition of relicensing.

Vulnerability to Sea Level Rise and Storm Events

Turkey Point's geographic location makes it particularly susceptible to sea level rise and storm surge impacts. The plant is situated on a low-lying peninsula, bordered by Biscayne Bay to the east and the Everglades to the west. The License Renewal Application's Environmental Report states that "[t]he ground elevation at the site is typically less than 1 foot above mean sea level."[11] The Environmental Report also notes that "the normal tide range of Biscayne Bay is about 2 feet. Natural (undeveloped) areas are inundated during high tide and can remain under 1 to 3 inches of water at low tide. Tidal flooding is a much more significant surface hydrological feature of the area than is rainfall runoff."[12]

The CCS already interacts hydrologically with Biscayne Bay and the groundwater. Knowing this, we believe that the Subsequent License Renewal Application process should consider how the adverse impacts of these interactions will be exacerbated when coupled with sea level rise. In particular, sea level rise will contribute to increased likelihood of site inundation, accelerated saltwater intrusion into freshwater supplies, and greater susceptibility to storm surge impacts. Through inundation and flooding events, environmental contaminants could be transferred from the CCS, and the facility as a whole, to surrounding areas, including Biscayne Bay. Thus, such potential impacts must be included in the environmental analysis

Over the last 100 years, sea level around Turkey Point has risen approximately 9-12 inches. By 2100, sea level could rise between 5 and 6.75 feet according to revised projections by the U.S. Army Corps of Engineers and the National Oceanic and Atmospheric Administration.[13] Presently, FPL estimates only three quarters of a foot of sea level rise. Under the most optimistic scenarios, using projections from the U.S. Army Corps of Engineers, the plant and aspects of the Cooling Canal System will be inundated by the year 2040 – 12 years before the end of the proposed reactor license extension.[14] We urge NRC staff to consider these sea level rise projections, and more conservative projections such as those from the

[9] Miami-Dade County Department of Regulatory and Economic Resources, Consent Agreement, October 7, 2015.
[10] Florida Department of Environmental Protection, Consent Order, OGC File No:16-0241, June 20, 2016.
[11] Applicant's Environmental Report: Operating License Renewal Stage Turkey Point Units 3 & 4 Florida Power & Light Company; Docket Nos. 50-250 and 50-251 Revision 1, Page 2.2-1.
[12] Applicant's Environmental Report: Operating License Renewal Stage Turkey Point Units 3 & 4 Florida Power & Light Company; Docket Nos. 50-250 and 50-251 Revision 1, Page 2.3-1.
[13] *FPL Wants to Keep Old Reactors Running. New sea-rise studies could stand in the way.;* MIAMI HERALD, 1 June 2018, *available at* http://www.miamiherald.com/news/local/environment/article212325259.html.
[14] University of Florida Sea Level Rise Scenario Sketch Planning Tool, *available at* https://sls.geoplan.ufl.edu/beta/viewer/.

National Oceanic and Atmospheric Administration, in consideration of this License Renewal and the operational viability of these plants and ancillary facilities by 2053. We urge you to analyze best and worst-case scenarios for sea level rise during the life of the plant under a license renewal. We also urge you to incorporate sea level rise planning such that it is protective of our water resources during the license extension horizon. We feel that failing to consider sea level rise projections would disregard best available science and the legal requirements of the National Environmental Policy Act.

In addition, the SEIS should consider the increased vulnerability of Units 3 & 4 to storm surge and hurricanes as a result of sea level rise. While sea level rise occurs slowly, impacts from storm surge can be sudden and immediate. Turkey Point could be exposed to storm surge from Florida Bay in future scenarios. Elliott Key, which currently acts as a barrier to the impacts of storms, may be substantially underwater within the next few decades, leaving the facility more vulnerable to storm surge, high tides, winds and ocean swell. Given projections, it is extremely likely that water from Biscayne Bay will rise to or above levels of the cooling canal system at some point in the project's lifetime. During storm and hurricane events, it is possible that water levels may breach the height of the berms surrounding the CCS, causing Bay water to mix with the CCS water before the water returns to Biscayne Bay. The result would be an increased presence of contaminated cooling canal water in the Bay, which could contribute to, among other things, nutrient loading and potentially devastating algal blooms in the bay. Sea level rise and storm surge impacts should be considered in the SEIS and in the analysis of cumulative impacts associated with the Subsequent License Renewal Application.

In the interest of protecting the health and integrity of our valuable natural resources, limited water supplies, and national parks, we strongly urge you to thoroughly analyze the aforementioned environmental impacts as part of the NEPA review process.

Sincerely,

Rachel Silverstein, Ph.D.
Executive Director & Waterkeeper
Miami Waterkeeper

Caroline McLaughlin
Biscayne Program Manager
National Parks Conservation Association

Cc:
Brian Holian, Acting Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission
Eric Silagy, President and Chief Executive Officer, Florida Power & Light
Noah Valenstein, Secretary, Florida Department of Environmental Protection
Chairman Esteban Bovo and the Miami Dade County Board of Commissioners
Mayor Carlos Gimenez, Miami-Dade County
Lee Hefty, Director Miami-Dade County Department of Environmental Resources Management
Mayor David Rice and the Monroe County Board of commissioners
Margaret Goodro, Superintendent, Biscayne National Park
Pedro Ramos, Superintendent, Everglades National Park
Sarah Fangman, Superintendent, Florida Keys National Marine Sanctuary
Jeremy Dixon, Refuge Manager, Crocodile Lake National Wildlife Refuge
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