

TurkeyPoint34SLREISCEm Resource

From: Caroline McLaughlin <cmclaughlin@npca.org>
Sent: Monday, May 20, 2019 4:52 PM
To: TurkeyPoint34SLREIS Resource
Cc: Drucker, David; ho-nieh@nrc.gov; Eric.Silagy@fpl.com; noah.valenstein@dep.state.fl.us; district3@miamidade.gov; bjordan@miamidade.gov; district2@miamidade.gov; district4@miamidade.gov; district5@miamidade.gov; district6@miamidade.gov; District7@miamidade.gov; District8@miamidade.gov; DennisMoss@miamidade.gov; district10@miamidade.gov; district11@miamidade.gov; district12@miamidade.gov; district13@miamidade.gov; mayor@miamidade.gov; heftyl@miamidade.gov; Boccdis5@monroecounty-fl.gov; boccdis1@monroecounty-fl.gov; Boccdis2@monroecounty-fl.gov; Boccdis3@monroecounty-fl.gov; Boccdis4@monroecounty-fl.gov; Margaret_Goodro@nps.gov; Pedro.ramos@nps.gov; 'Sarah Fangman'; Biscayne.Bay@dep.state.fl.us
Subject: [External_Sender] NPCA Comments Turkey Point DSEIS Units 3&4 Subsequent License Renewal NUREG-1437
Attachments: NPCA Comments NRC TP DSEIS 3&4 Subsequent License Renewal.pdf

Dear Mr. Drucker,

Kindly find attached comments from the National Parks Conservation Association on the Subsequent License Renewal for Turkey Point Nuclear Generating Unit Nos. 3 and 4 Draft Supplemental Environmental Impact Statement, NUREG—1437, Supplement 5, Second Renewal, Draft. Please feel free to reach out with questions or for additional information.

Best,
Caroline



Caroline McLaughlin

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Your parks. Your turn.

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Comment Number: 1688

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May 20, 2019

Mr. David Drucker
Senior Project Manager
Office of Administration
TWFN-7-A60M
ATTN: Program Management, Announcements and Editing Staff
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

RE: Docket ID NRC-2018-0101– Subsequent License Renewal for Turkey Point Nuclear Generating Unit Nos. 3 and 4 Draft Supplemental Environmental Impact Statement, NUREG—1437, Supplement 5, Second Renewal, Draft

Dear Mr. Drucker,

On behalf of the National Parks Conservation Association (NPCA) and our more than 1.3 million members and supporters, we write to express our concerns with the analysis and conclusions provided in the Draft Supplemental Environmental Impact Statement (DSEIS) for the Subsequent License Renewal for Turkey Point Nuclear Generating Units, Numbers 3 & 4, owned and operated by Florida Power & Light (FPL). For decades, the operations of Turkey Point's antiquated cooling canal system (CCS) have contaminated the surrounding environment because of connectivity between the CCS and surrounding waters, threatening our national parks, sensitive natural areas, and the drinking water supply for millions. As outlined by the DSEIS, FPL has repeatedly violated various state and local water quality standards through the discharge of salinity and nutrients from the CCS into surrounding ground and surface waters. And yet, Nuclear Regulatory Commission (NRC) staff comes to a wholly unsupported conclusion that the environmental impacts of the subsequent license renewal and continued operation of the CCS will be mostly small. These conclusions are based on unsupported assumptions that FPL's efforts to remediate existing pollution and prevent future pollution will be successful. Until and unless there is concrete, scientific evidence to support such a conclusion, FPL should not be given a subsequent license renewal that allows the continued operation of the CCS. Rather, alternatives that involve the complete decommissioning of the CCS and a transition to other cooling technology, such as mechanical draft cooling towers, should be considered.

About NPCA

The National Parks Conservation Association is America's leading voice in protecting and enhancing our National Park System for present and future generations. NPCA is a nonprofit, nonpartisan parks advocacy organization with more than 1.3 million members and supporters. NPCA and its members care deeply about the health of our national parks, protecting water and biodiversity, and conserving cultural resources. Unfortunately, many park waterways are in jeopardy from threats beyond park boundaries, such as incompatible development, pollution, demands for water use, and climate change. These are

among the many threats that are of great concern to NPCA and its members posed by the continued operations of the CCS at Turkey Point and their impacts on the surrounding environment, including our national parks.

Ecological Importance of Surrounding National Parks and Natural Areas

Located directly adjacent to Turkey Point, Biscayne National Park is a national treasure and protects a significant portion of the third largest barrier reef ecosystem in the world. It contains part 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 is designated as an Outstanding Florida Water (OFW) 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 recreational activities within Biscayne National Park include snorkeling, paddling, wildlife viewing, fishing, camping, hiking, and scuba diving. In 2017, Biscayne was visited by close to 447,000 people. These visitors spent nearly \$28 million, supporting a total of 364 jobs and generating a total economic output of around \$38.5 million.²

Everglades National Park, located west of Turkey Point, was established in 1934 as a “public park for the benefit of the people. It is set aside as a permanent wilderness, preserving essential primitive conditions including the natural abundance, diversity, behavior, and ecological integrity of the unique flora and fauna.”³ Renowned worldwide for its rich array of unique ecosystems and wildlife, Everglades National Park covers around 1.5 million acres of land and water, protecting 34 native species that are either federally listed or candidates for threatened or endangered status. Recognized by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) as a World Heritage Site and International Biosphere Reserve, Everglades National Park is home to the largest mangrove ecosystem in the Western Hemisphere and the most significant wading bird breeding ground in North America.⁴ Over one million visitors to Everglades National Park spent more than \$197 million in 2017, sustaining 1,320 jobs in the local area. Park visitation had a cumulative benefit of more than \$144 million to the local economy.⁵

Due to the impacts of the hydrological reengineering of the Everglades that took place in the early 20th century to pave the way for development, the greater Everglades ecosystem, including Biscayne National Park and Biscayne Bay, has been in decline for decades. In 2000, Congress authorized the Comprehensive Everglades Restoration Plan (CERP) through the Water Resources Development Act, which put forth an overarching plan to achieve restoration of the quantity, quality, distribution, and timing

¹ 16 U.S.C. 410gg

² Cullinane Thomas, C., L. Koontz, and E. Cornachione. 2018. 2017 national park visitor spending effects: Economic contributions to local communities, states, and the nation. Natural Resource Report NPS/NRSS/EQD/NRR—2018/1616. National Park Service, Fort Collins, Colorado.

³ U.S. Department of the Interior, National Park Service, *Everglades Park Management*, <http://www.nps.gov/ever/learn/management/index.htm>.

⁴ United Nations Educational, Scientific and Cultural Organization, *Everglades National Park: Statement of Significance*, <http://whc.unesco.org/en/list/76>.

⁵ Cullinane Thomas, C., L. Koontz, and E. Cornachione. 2018. 2017 national park visitor spending effects: Economic contributions to local communities, states, and the nation. Natural Resource Report NPS/NRSS/EQD/NRR—2018/1616. National Park Service, Fort Collins, Colorado.

of water flows throughout the system. The Biscayne Bay Coastal Wetlands (BBCW) project is a component of CERP that aims to restore the coastal wetlands of Biscayne Bay and reduce damaging point-source discharges to the system.

The Florida Keys National Marine Sanctuary protects more than 2,900 square nautical miles of Florida Keys coastal and ocean waters. Established in 1990 in response to concerns about the decline of the coral reef ecosystem, the Florida Keys National Marine Sanctuary was designated by Congress as the ninth sanctuary to join the National Marine Sanctuary System. The Sanctuary is home to a variety of threatened and endangered species endemic to Florida and its health is critical to the broader Keys economy.

Established in the 1970s, the Biscayne Bay Aquatic Preserves were created to preserve Biscayne Bay and its native wildlife and habitat. The Preserves protect over 64,600 submerged acres of Biscayne Bay and a diverse array of marine organisms including sponges, corals, over 500 species of fish, marine reptiles, marine mammals, and over 800 species of tropical marine invertebrates.

The Proposed Action, involving the continued operation of Turkey Point nuclear Units 3&4 and the antiquated CCS through the 2050s, could result in numerous adverse environmental impacts to our national parks, protected areas, and the treasured natural resources they were designated to protect. Specifically, threatened wildlife and wetland habitat in Biscayne National Park could be harmed through impacts of the Proposed Action on ground and surface waters. The continued operation of the CCS also threatens the goals of CERP through potential negative impacts to the benefits of BBCW. The primary objectives of BBCW are to rehydrate coastal wetlands located adjacent to Turkey Point, restore overland and subsurface water flows, and reduce salinity levels in coastal ground and surface waters. The continued deposition of salt and nutrients into natural areas, areas poised to benefit from the BBCW project, jeopardizes the investment of hundreds of millions of local, state, and federal dollars to generate ecosystem benefits and increase the resiliency of the ecosystem to the impacts of climate change.

Failure of 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 to surrounding surface waters.⁶

Over the years, water in the CCS has become hypersaline, increasing in density and sinking into the underlying Biscayne Aquifer, 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,"⁷ 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

⁶ Hefty, Lee, Miami-Dade Department of Environmental Resources Management, Letter to Phil Coram, Florida Department of Environmental Protection, November 26, 2014.

⁷ 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.

that water from the CCS is also hydrologically connected to the waters of Biscayne Bay, with CCS water moving through or under berms.⁸ 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.⁹ The addition of excess nutrients, such as ammonia and phosphorus, into the nutrient-limited waters of Biscayne Bay and Biscayne National Park has the potential to stimulate algal growth,¹⁰ which could ultimately lead to seagrass die-offs, toxic algal blooms, and severe ecosystem disruption, thus presenting a serious ecological concern.

Failure to Accurately Characterize Connectivity Between CCS and Surrounding Environment

In the DSEIS, NRC staff fail to present a consistent, accurate characterization of the connectivity between the CCS and surrounding ground and surface water and thus fail to adequately analyze the significance and impacts of these interactions. DSEIS language regarding how the CCS connects to the surrounding environment is contradictory and NRC staff somehow refer to the CCS as a closed system while simultaneously recognizing the contribution of water from the CCS into the surrounding environment because of hydrologic connectivity. NRC staff write that, “at Turkey Point, water from the cooling water loop is discharged into a *closed body of water* called the cooling canal system.”¹¹ Indeed, NRC staff incorrectly state that “the CCS does not connect to any other surface water bodies,”¹² and that, in order to comply with a 1971 consent decree that required FPL to discharge cooling water from plant operations into a closed-cycle cooling canal system, “FPL designed and constructed the CCS and ensured that it had no surface water connection to any outside water body.”¹³

And yet, NRC staff go on to explicitly recognize the connectivity between the CCS and outside water bodies: “Water in the CCS is in direct contact with the Biscayne Aquifer and with earthen plugs located in the perimeter of the CCS.”¹⁴ This connectivity results in water leaving the CCS via the Biscayne Aquifer, with more water moving from the CCS into the aquifer than water moving from the aquifer into the CCS.¹⁵ Indeed, “the CCS affects the hydrology and groundwater quality of the Biscayne aquifer. The CCS is unlined and hydraulically connected to the upper Biscayne aquifer because permeable aquifer strata permit the movement of water between the aquifer and the CCS.”¹⁶ NRC staff explain the close connection between ground and surface water:

⁸ 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.

⁹ 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.

¹⁰ Cox, William, US DOI NPS letter to EPA, DEP, MDC, May 13, 2016.

¹¹ United States Nuclear Regulatory Commission, *Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 5, Second Renewal Regarding Subsequent License Renewal for Turkey Point Nuclear Generating Unit Nos. 3 and 4, Draft Report for Comment*, NUREG-1437 Supplement 5 Second Renewal, March 2019, pg. 3-4, emphasis added.

¹² *Ibid.*, 3-5

¹³ *Ibid.*, 3-8, 3-9

¹⁴ *Ibid.*, 3-11

¹⁵ *Ibid.*, 3-11

¹⁶ *Ibid.*, 3-55

At the Turkey Point site, surface water (including the area's freshwater canals, wetlands, and the adjoining Biscayne Bay) and groundwater are closely connected. This close relationship is attributable to the very high permeability of the underlying Biscayne aquifer, which permits water to move relatively freely between the surface and subsurface and vice versa. As a result, the CCS is hydraulically connected to surface waters including Biscayne Bay via the groundwater pathway.¹⁷

Despite the NRC's identification of the close connection between groundwater and surface water and the hydraulic connection of the CCS to surface waters via a groundwater pathway, NRC staff also assert that the CCS "does not connect to any other surface water bodies."¹⁸ The characterization made by NRC of the CCS as a closed loop system that does not connect to surrounding surface bodies is inaccurate and directly contradicted by information contained within the same document.

Repeated Violations of Water Quality Standards

The connectivity between the CCS and surrounding waterways combined with persistent water quality issues involving hypersalinity and nutrification has resulted in the repeated violation of water quality standards by FPL over the years. Prior to 2010, seagrasses in the CCS served to remove nutrients that were added to the system. However, instances of high salinity and temperature in the canals led to a massive seagrass die-off and subsequent algal blooms in the CCS, significantly degrading water quality.¹⁹ Today, waters in the CCS are known to contain nutrient pollutants, including phosphorus, nitrogen, ammonia, and chlorophyll-a, which have subsequently been discharged into surrounding waterways. Indeed, ammonia exceedances have been repeatedly recorded in nearby waterways and attributed to contributions from the CCS. On April 25, 2016, the Florida Department of Environmental Protection (FDEP) issued a warning letter to FPL notifying them that monitoring data indicated that levels of ammonia exceeded ammonia water quality standards.²⁰ On July 10, 2018, Miami-Dade County Division of Environmental Resource Management (DERM) issued a letter indicating that total ammonia concentrations in the Barge Basin, Turtle Point, Card Sound remnant canal, S-20 canal, and the Sea-Dade remnant canal were in exceedance of County surface water quality standards.²¹ Through an analysis of temperature and tritium data, the County concluded that the CCS is a contributing source of ammonia to the areas.²²

Nutrient pollution emanating from the CCS is of particular concern because of the sensitivity of waters in Biscayne Bay and other surface water bodies to the addition of excess nutrients. Even in small quantities, an increase in nutrients, particularly phosphorus, can dramatically alter the delicate ecological balance in Biscayne Bay, with the potential to cause seagrass die-offs, algal blooms, and ecological disruption. As already described, there are significant hydrologic connections between the CCS, groundwater, and surface water bodies, raising the risk of the nutrification of waters of Biscayne Bay and Biscayne National Park.

For years, the CCS has been contributing to the steady growth of a hypersaline plume, marching west in the Biscayne Aquifer towards our wellfields and east underneath Biscayne National Park. In 2015, after Miami-Dade County issued FPL a notice of violation pertaining to the County groundwater quality

¹⁷ Ibid., 3-31, 3-32

¹⁸ Ibid., 3-38

¹⁹ Ibid., p. 3-44.

²⁰ Ibid., p. 3-50.

²¹ Ibid., p. 3-52, 3-53.

²² Ibid., p. 3-52, 3-53.

standards, FPL entered into a Consent Agreement with the County to abate hypersaline water discharges and remediate the hypersaline plume to the west and north of Turkey Point. In 2016, Miami-Dade County executed an addendum to the Consent Agreement due to apparent violations of County water quality standards related to ammonia exceedances in surface water. As stated above, ammonia exceedances in surface water quality standards attributable to the CCS were detected in 2018, after the execution of the amended Consent Agreement.

In 2016, FPL and FDEP executed a Consent Order related to discharges from the CCS that impaired the beneficial use of Class G-II groundwater adjacent to the CCS, the exceedance of surface water quality standards in Biscayne Bay, and the impact of the hypersaline plume on the saltwater interface. One of the requirements of the Consent Order is for FPL to maintain the average salinity in the CCS at or below 34 PSU. Modeling from 2014 showed that by adding about 14 million gallons per day (mgd) of Upper Floridan Aquifer water with a salinity of 2 PSU to the CCS, it should only take a year to reduce salinities in the CCS to 35 PSU.²³ However, in 2016 and 2017, when FPL added approximately 12.8 mgd of Upper Floridan Aquifer water to the CCS, the average salinity was nowhere near 35 PSU. Rather, it was around 65 PSU.²⁴ While FPL has additional time to comply with Consent Order requirements regarding salinity, this example illustrates the uncertainty inherent in modeling exercises.

Uncertain Outcome of Remediation Efforts

In order to meet remediation objectives of both the Consent Agreement and Consent Order, FPL has constructed recovery wells to extract the hypersaline plume from the Biscayne Aquifer, pumping contaminated water into the Boulder Zone. According to remediation objectives, FPL has 10 years to retract the hypersaline plume to the boundaries of Turkey Point. FPL is required to conduct a series of Continuous Surface Electromagnetic Mapping (CSEM) surveys designed to illustrate the extent and boundaries of the hypersaline plume. The recovery well system went online in 2018 and has been operational for only one year. The only CSEM data currently available shows baseline data from which the future efficacy of remediation efforts will be measured. At this point there is no concrete data to support the claim that remediation efforts will be successful, or that they will be successful in the 10-year time frame stipulated in the Consent Agreement and Consent Order.

It is important to note the consequences laid out in both the Consent Order and Consent Agreement if FPL is unsuccessful at meeting remediation requirements. If FPL is unsuccessful at meeting the terms of these agreements, they only need to come up with additional remediation plans and strategies to be implemented under an indeterminate timeline. Regarding CCS salinity requirements laid out by the Consent Order with FDEP:

*If FPL fails to reach an annual average salinity of at or below 34 PSU by the end of the fourth year of freshening activities, within 30 days of failing to reach the required threshold, **FPL shall submit a plan to the Department detailing additional measures, and a timeframe, that FPL will implement to achieve the threshold.** Subsequent to attaining the threshold in the manner set forth above, if FPL fails more than once in a 3 year period to maintain an average annual salinity of at or below 34 PSU, **FPL shall submit, within 60 days of reporting the average annual salinity, a plan containing additional measures that FPL shall implement to achieve the threshold salinity level.***²⁵

²³ Ibid., p. 3-49.

²⁴ Ibid., p. 3-49.

²⁵ Florida Department of Environmental Protection, Consent Order with Florida Power & Light Company, OGC File No:16-0241, June 20, 2016, p. 8, 20.a, emphasis added.

FPL is also required by the Consent Order to implement remediation efforts that will halt the westward migration of the hypersaline plume within three years and reduce the westward extent of the plume to Turkey Point boundaries within 10 years:

*iv. To ensure overall remediation objectives are attained in a timely manner, if the second CSEM survey indicates that the net westward migration of the hypersaline plume is not being halted, then, within 180 days of the second CSEM survey, **FPL shall develop and submit for approval to the Department a plan with specific actions to achieve the objectives of the remediation project.** If the third CSEM survey still indicates the net westward migration of the hypersaline plume has not halted, FPL shall implement the approved additional measures within 30 days after submittal of the third CSEM report to the Department.*

*v. At the conclusion of the fifth year of operation of the remediation project, FPL shall evaluate and report to the Department, within 60 days, the effectiveness of the system in retracting the hypersaline plume to the L-31E canal within 10 years. If this report shows the remediation project will not retract the hypersaline plume to the L-31E canal within 10 years due to adverse environmental impacts of remedial measures or other technical issues, **FPL shall provide an alternate plan for Department review and approval.** FPL shall begin implementing the alternate plan within 30 days of receipt of notice that the alternate plan has been approved.²⁶*

Similarly, FPL's Consent Agreement with Miami-Dade County requires the implementation of a Biscayne Aquifer Recovery Well System (RWS) to intercept, capture, contain, and retract the hypersaline plume. After five years, the effectiveness of the RWS will be evaluated:

*If the analysis indicates that the RWS is not anticipated to achieve the goal to intercept, capture, contain, and ultimately retract the hypersaline groundwater plume, **FPL shall make recommendations for modifications to the project components and/or designs** to ensure the ability of the system to achieve the objectives of the Consent Agreement. The evaluation and any proposed revisions shall be submitted to DERM for review and approval.²⁷*

The Consent Agreement stipulates that the effectiveness of the RWS will also be evaluated after 10 years:

*If monitoring demonstrates that the activities are not achieving the objectives of this Consent Agreement, **FPL shall revise the project components and/or designs** to ensure the ability of the system to achieve the objectives of this Consent Agreement. The proposed revisions shall be submitted to DERM for review and approval.²⁸*

Thus, if remediation efforts as stipulated by the Consent Agreement and Consent Order prove to be ineffective and fail to meet the regulatory requirements laid out in the documents, the only real consequence is that new remediation plans will be devised and implemented over an even longer timeframe. There are no concrete requirements laid out that would guarantee a cessation of continued pollution by the CCS, such as, for instance, a requirement to decommission the CCS. Rather, the only consequence would be unspecified continued remediation efforts over an unspecified timeframe with uncertain results. It is possible that the westward migration of the hypersaline plume and surface and

²⁶ Ibid., p. 10, 20.c.iv. emphasis added.

²⁷ Miami-Dade County Department of Regulatory and Economic Resources, Consent Agreement with Florida Power & Light Company, October 7, 2015, p. 6, 17.b.iii, emphasis added.

²⁸ Ibid., p. 6, 17.b.iv, emphasis added.

groundwater quality violations could continue indefinitely, and certainly through the subsequent relicense period.

Unfounded Conclusions Regarding Impacts of Proposed Action on Groundwater Resources

In the DSEIS, NRC staff concludes that groundwater quality impacts, “are MODERATE for current operations, but will be SMALL during the subsequent license renewal term as a result of ongoing remediation measures and State and county oversight, now in place at Turkey Point.”²⁹ As described above, FPL has a history of violating water quality standards and some of the models predicting the impacts of remediation efforts have already shown to be unsound. FPL has always been responsible for operating Turkey Point under all applicable federal, state, and local laws. That they are currently under State and county oversight does not change their history of noncompliance with applicable regulations. Moreover, models are inherently uncertain. NRC staff acknowledges that, “groundwater models are approximations of natural systems and are dependent on a number of input variables based on assumptions regarding present and future environmental conditions. Thus, they entail substantial uncertainty.”³⁰

Despite the uncertainty inherent in modeling, FPL’s history of violating water quality standards, and the absence of any concrete evidence or data indicating that remediation efforts will be successful, NRC staff somehow comes to the following conclusion:

*As a result of FPL’s operation of its recovery well system and continued regulatory oversight and enforcement of the terms of the consent order and consent agreement by the FDEP and DERM, the impacts on groundwater quality from operations during the subsequent license renewal term would be SMALL.*³¹

As cited extensively above, the Consent Order and Consent Agreement do not guarantee that remediation efforts will be effective. If they are not effective, the only result would be the development of additional remediation techniques, the success of which also cannot be guaranteed. The conclusion that environmental impacts of the Proposed Action on groundwater resources would be SMALL is an unfounded, unsupported, and inaccurate conclusion. It is a very real possibility that remediation efforts will be unsuccessful, and the CCS will continue to discharge pollution into surrounding ground and surface waters, including those of Biscayne National Park. In the DSEIS, NRC staff must include any kind of assessment of the environmental impacts of the Proposed Action if remediation efforts are unsuccessful. The subsequent relicensing of Units 3 & 4 should be contingent upon the success of the remediation efforts. If they are unsuccessful, FPL should be required to decommission the CCS and implement alternative cooling technology, such as the installation of mechanical draft cooling towers.

Failure to Analyze Impacts of Sea Level Rise and Storm Surge

²⁹ United States Nuclear Regulatory Commission, *Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 5, Second Renewal Regarding Subsequent License Renewal for Turkey Point Nuclear Generating Unit Nos. 3 and 4, Draft Report for Comment*, NUREG-1437 Supplement 5 Second Renewal, March 2019, p. 4-27.

³⁰ *Ibid.*, p. 4-27.

³¹ *Ibid.*, p. 4-27.

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. FPL's License Renewal Application's Environmental Report for Units 3 & 4 states that "[t]he ground elevation at the site is typically less than 1 foot above mean sea level."³² 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."³³

South Florida is already experiencing sea level rise and is expected to experience an increase in sea level rise, flooding and severity of hurricanes in upcoming years. Over the last 100 years, sea level around Turkey Point has risen approximately 9-12 inches and according to projections by the U.S. Army Corps of Engineers and the National Oceanic and Atmospheric Administration, sea level could rise between 5 and 6.75 feet by 2100.³⁴ These estimates show that Turkey Point and parts of the CCS will be inundated by the year 2040, well within the subsequent relicensing period.³⁵ As sea levels rise, waters in Biscayne Bay will rise above CCS levels and may overtop the berms surrounding the CCS during storm events. This water could then travel either over the berms or through subsurface pathways back into Biscayne Bay. Moreover, serious storms could threaten the integrity of the berms themselves, raising the risk of a total failure of the berms. The addition of nutrient-rich water from the CCS into nutrient-limited Biscayne Bay has the potential to disrupt sensitive ecological systems that Biscayne National Park was established to protect. FPL greatly underestimates future sea level rise, and in the DSEIS, NRC staff fail to adequately analyze the potential environmental impacts associated with sea level rise and the continued operation of the CCS. By underestimating sea level rise, adjacent waters are at risk of nutrient loading and harmful algae blooms if the CCS were to freely flow into Biscayne Bay.

While the DSEIS refers to a flood analysis completed by FPL for Units 3 & 4 through 2032,³⁶ that flood analysis does not account for sea level rise and storm surge projections during the subsequent relicensing period and thus is inadequate to account for all future environmental impacts. The DSEIS fails to acknowledge the effects of climate change and sea level rise on the operations of Units 3 & 4 under the license renewal. The DSEIS must include an in-depth analysis that addresses science-based projections for sea level rise and climate change throughout the life of the requested licensing period. Specifically, the plan should detail measures to prevent future violations of stormwater and wastewater discharges into adjacent waters, violations which are inevitable under the current plan.

³² 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.

³³ 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.

³⁴ 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>.

³⁵ University of Florida Sea Level Rise Scenario Sketch Planning Tool, available at <https://sls.geoplan.ufl.edu/beta/viewer/>.

³⁶ United States Nuclear Regulatory Commission, *Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 5, Second Renewal Regarding Subsequent License Renewal for Turkey Point Nuclear Generating Unit Nos. 3 and 4, Draft Report for Comment*, NUREG-1437 Supplement 5 Second Renewal, March 2019, p. 3-36.

Thank you for your consideration of these comments.

Sincerely,



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Mayor Carlos Gimenez, Miami-Dade County
Lee Hefty, Director Miami-Dade County Department of Environmental Resources Management
Mayor Sylvia Murphy 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
Laura Eldridge, Aquatic Preserve Manager, Biscayne Bay Aquatic Preserve