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COMMENT (6)  
PUBLICATION DATE:  
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CITATION # 84 FR 13322

**Docket:** NRC-2018-0101  
Turkey Point Nuclear Plant Units 3 and 4

**Comment On:** NRC-2018-0101-0034  
Florida Power & Light Company; Turkey Point Nuclear Generating Unit Nos. 3 and 4

**Document:** NRC-2018-0101-DRAFT-0039  
Comment on FR Doc # 2019-06612

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## Submitter Information

**Name:** Sarah Fangman

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## General Comment

Please see the attached comment letter from NOAA Florida Keys National Marine Sanctuary regarding Docket ID NRC-2018-0101.

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## Attachments

NOAA FKNMS comments\_NRC NUREG-1437\_May 20, 2019



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SERVICE

Florida Keys National Marine Sanctuary  
33 East Quay Road  
Key West, Florida 33040

May 20, 2019

Office of Administration  
Mail Stop: TWFN-7-A60M  
ATTN: Program Management, Announcements and Editing Branch  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 2055-0001

Re: Docket ID NRC-2018-0101

To Whom It May Concern:

NOAA's Florida Keys National Marine Sanctuary (FKNMS or sanctuary) appreciates the opportunity to comment on the U.S. Nuclear Regulatory Commission's (NRC) NUREG-1437, Supplement 5, Second Renewal, draft, which contains a draft supplemental environmental impact statement (DSEIS) for the 20-year subsequent license renewal for Turkey Point Nuclear Generating Unit Nos. 3 and 4 (Turkey Point) proposed by Florida Power & Light Company. We offer the following comments on the extension of the operating license for the two units.

FKNMS, established in 1990 to protect nationally significant aquatic and marine resources, includes Card Sound – a body of water that borders the southeastern edge of Turkey Point's Cooling Canal System (CCS). The sanctuary is managed and protected by NOAA under authority of the National Marine Sanctuaries Act (NMSA, 16 USC §§ 1431 *et seq.*), Florida Keys National Marine Sanctuary and Protection Act (Pub. Law 101-605), and associated regulations (15 CFR part 922, subpart P). Under Section 304(d) of the NMSA, a Federal agency must consult with NOAA's Office of National Marine Sanctuaries if the Federal agency action, including licensing or permitting, is likely to destroy, cause the loss of, or injure any sanctuary resource. Please see <https://sanctuaries.noaa.gov/management/consultations/> for additional information regarding the 304(d) consultation process.

FKNMS determined that the DSEIS contained an insufficient analysis of the potential effects to the sanctuary and sanctuary resources for the following reasons:

*1. Deficient Analysis of the Potential Impacts from Ammonium, Tritium and Other Nutrients on sanctuary resources*

As stated in Section 4.8.1.1 of the DSEIS, the waters of the CCS enter Biscayne Bay, including FKNMS waters of Card Sound, because "the porous nature of the limestone bedrock that forms the Biscayne aquifer results in some groundwater exchange between the CCS and the aquifer. This exchange of groundwater between the CCS and the Biscayne aquifer creates a pathway through which the CCS may influence Biscayne Bay." However, the DSEIS does not specifically consider how this interaction may affect the sanctuary. The DSEIS also does not acknowledge the potential for occasional breaching of the CCS during storm events, as demonstrated through

National Weather Service modeling conducted by the National Park Service.<sup>1</sup> Monitoring data documents the hydrological connections between polluted CCS waters and ground and surface waters, including in canals in the immediate vicinity of the CCS. The S-20 Get Away Canal has been shown to have CCS plume waters with elevated ammonia and tritium.<sup>2</sup> These polluted plume waters presumably mix with waters from the wetlands to the east and may be discharged into the sanctuary when the S-20 structure is opened for drainage purposes. Similarly, Card Sound Canal, which is tidally connected to the sanctuary, is also the receiver of CCS plume water.<sup>3</sup>

In addition, Section 4.8.1.1 of the DSEIS states that in

July 2018, the Miami-Dade County Division of Environmental Resources Management (DERM) found that several sampling locations at the Barge Basin, Turtle Point Canal, Card Sound Canal, S-20 Get Away Canal, and the Sea-Dade Canal exceeded the applicable Miami Dade County surface water standard for total ammonia concentrations (MDC 2018a)... [B]ecause the DERM believed that the CCS may be one source contributing to the elevated ammonia levels, it required FPL to take action to submit and implement a mitigation plan within 90 days of the date of the letter. The mitigation plan must address potential CCS nutrient impacts to groundwater and surface water resources beyond the boundaries of the CCS.

While the effects of higher than background levels of tritium on marine life are not yet fully understood, the influence of excess nutrients is well studied. Seagrass monitoring data show that phase shifts in these important marine communities adjacent to the CCS are occurring due to excess nutrients, specifically higher than normal phosphorus, a known component of CCS plume water.<sup>4</sup> Changes in seagrass composition may in turn modify the species supported by such habitats, and excess nutrients over longer time periods can lead to complete collapse of seagrass habitat and associated organisms. Therefore, FKMNS suggests that NRC specifically examine the potential impacts from tritium, ammonium, and phosphorus on the sanctuary, including biota that use the sanctuary.

## *2. Deficient Analysis of Seagrass Monitoring Data and Potential Impacts to Sanctuary Biota*

In Section 3.7.4 of the DSEIS, NRC states that “FPL performs aquatic ecological sampling in three locations adjacent to the CCS within Biscayne Bay and Card Sound (BB1, BB2, and BB3) and one reference site in Barnes Sound (BB4), which lies directly south of Card Sound (see Figure 3-22).” The NRC then goes on to explain how FPL sampled seagrasses as part of the

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<sup>1</sup> Vogel, Robert A.; Regional Director, Southeast Regional Office, National Park Service, Atlanta, GA. Letter to Ben Beasley, Chief, Environmental Review and NEPA Branch, U.S. Nuclear Regulatory Commission, Rockville, MD. 5 March 2019.

<sup>2</sup> Mayorga, Wilbur; Environmental Monitoring and Restoration Division, Department of Regulatory and Economic Resources, Miami-Dade County, Miami, FL. “Re: Site Assessment Report (SAR) Dated March 17, 2017 and the SAR Supplemental Information Dated November 11, 2017.” Received by Matthew J. Raffenberg, Sr. Director, Environmental Licensing and Permitting, Florida Power & Light Company, Juno Beach, FL. 10 July 2018.

<sup>3</sup> *Id.*

<sup>4</sup> Reynolds, L., J. Fourqurean, W. Nuttle. 2019. Future Impacts on Biscayne Bay of Extended Operation of Turkey Point Cooling Canals. Greater Everglades Ecosystem Restoration (GEER). <https://conference.ifas.ufl.edu/geer2019/posters/Reynolds-%20Future%20Impacts%20on%20Biscayne%20Bay.pdf>

monitoring study. However, the conclusion for this monitoring data states on pages 3-102 to 3-104 that the

major findings were as follows.

- The marsh and mangrove areas are representative of the hydrologically modified or nutrient-limited communities found along the coastal fringe of south Florida.
- Data collected during the reporting period continue to support the conclusion that the CCS does not have an ecological impact on the surrounding areas, and there is no clear evidence of CCS water in the surrounding marsh or mangrove areas from a groundwater pathway. Rather, ecological changes observed during the reporting period are more seasonally and meteorologically driven.

These conclusions appear to describe potential impacts to marshes and mangroves. Elsewhere in the SEIS potential impacts to water quality within Biscayne Bay are described. However, no analysis in the SEIS evaluates the results of the seagrass monitoring program or the potential impacts to seagrasses and other biota (other than ESA-listed species) that occur within the sanctuary. Furthermore, as noted above, independent seagrass monitoring data show that phase shifts in these important marine communities adjacent to the CCS are occurring due to excess nutrients, specifically higher than normal phosphorus, a known component of CCS water.<sup>5</sup>

Seagrasses provide important nursery, foraging, and spawning grounds to sanctuary resources. Seagrasses are also integral to the life cycle of several species of fish that provide a foundation for the recreational and commercial fisheries that occur within the sanctuary. Therefore, FKNMS recommends that NRC analyze the potential impacts to sanctuary resources, including seagrasses, fish, and other biota.

### *3. Deficient Analysis of Reasonably Foreseeable Activities Regarding Flooding*

In Section 3.5.1.1 (page 3-37) of the DSEIS, the NRC states that the L-31E Canal

includes a levee with a crest elevation of 7 ft. (2.1 m) MSL. However, it is not designed to prevent flooding from severe hurricanes with tidal flooding. Based on published storm-tide frequency studies, it is estimated that a 7 ft. (2.1 m) tide may occur once every 20 to 25 years near the Turkey Point site (FPL 2018f). The increased potential for future coastal flooding based on climate change projections is discussed in Section 4.15.3.2 (Climate Change) of this SEIS.

In Section 4.15.3.2 of the DSEIS, the NRC then describes various reasonably foreseeable forecasts whereby sea level rise would increase such that the L-31E Canal would no longer prevent flooding during large tides and especially during severe hurricanes with tidal flooding.

In Section 4.16 of the DSEIS, NRC evaluates the potential cumulative impacts of reasonably foreseeable activities. However, this analysis is deficient because it does not analyze any

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<sup>5</sup> *Id.*

reasonably foreseeable flooding events, in which case water from the CCS would directly enter the sanctuary. FKNMS agrees with the analysis, “Modeled Storm Surge from Category 3 and Category 5 Hurricanes,” provided by the National Park Service,<sup>6</sup> a cooperating agency on the DSEIS. Therefore, FKNMS recommends that NRC analyze the environmental impacts of a reasonably foreseeable flooding event whereby the waters within the CCS enter the sanctuary.

### *Conclusion*

For the reasons stated above, and given the engineered features of the existing CCS and reasonably foreseeable likelihood that sea level rise will lead to flooding events of the low-lying CCS, FKNMS believes that analysis of impacts to sanctuary resources in the DSEIS is insufficient and should be further evaluated. NOAA would then review any such revised analysis to determine if consultation under Section 304(d) of the National Marine Sanctuaries Act (16 USC § 1434(d)) is required. In addition, FKNMS believes that the least damaging alternative to the sanctuary would be implementations of the cooling water system alternative. NRC should initiate a joint process, which includes the U.S. Environmental Protection Agency and Florida Department of Environmental Protection, to examine CCS replacement and decommissioning alternatives. Any final SEIS for the current license renewal process for Units 3 and 4 should commit to a timeline and process for the decommissioning analysis, which should occur prior to expiration of the current licenses for Units 3 and 4. It is only through this action that removal of threats to sanctuary resources may eventually be achieved. This action would also alleviate impacts from CCS operations on Comprehensive Everglades Restoration Plan projects in the area that are authorized under the Water Resources Development Act.

If you have any questions, please contact Joanne Delaney, FKNMS Resource Protection and Permit Coordinator, at [Joanne.Delaney@noaa.gov](mailto:Joanne.Delaney@noaa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "M. Sarah Fangman", with a long horizontal flourish extending to the right.

Sarah Fangman  
Superintendent

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<sup>6</sup> Vogel, Robert A.; Regional Director, Southeast Regional Office, National Park Service, Atlanta, GA. Letter to Ben Beasley, Chief, Environmental Review and NEPA Branch, U.S. Nuclear Regulatory Commission, Rockville, MD. 5 March 2019.