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Office of Administration
Mailstop: TWFN-7A6OM
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Via email:
TurkeyPoint34SLREIS@nrc.gov

RE: Environmental Impact Statement Scoping Comments Regarding Florida Power and Light's Subsequent License Renewal Application for Turkey Point Units 3 and 4, Docket Number NRC-2018-0101

The Department of Regulatory and Economic Resources, Division of Environmental Resource Management (DERM) has reviewed the above-referenced application submitted by Florida Power and Light (FPL) to the Nuclear Regulatory Commission (NRC) to renew the operating licenses for Turkey Point Units 3 and 4 and hereby provides comments related to the site and relevant findings.

Miami-Dade County understands the scoping process is, in part, intended to identify what issues should be included in the scope of the plant-specific Environmental Impact Statement (EIS) being prepared as a supplement to the Generic Environmental Impact Statement (GEIS), in response to FPL's license renewal application. The GEIS identifies issues that may be applicable or relevant to all operating nuclear power plants and is intended to improve the efficiency of the license renewal process. However, NRC's generic assessment of certain environmental impacts is based the assumptions that the license renewal will involve plants for which 1) "…the environmental impacts of operation are well understood as a result of lessons learned and knowledge gained from operating experience and completed license renewals"; 2) "Activities associated with license renewal are expected to be within this range of operating experience; thus, environmental impacts can be reasonably predicted"; and that 3) "Changes in the environment around nuclear power plants are gradual and predictable."

However, review of monitoring data associated with the Turkey Point Cooling Canal System (CCS) and actions undertaken by FPL to address concerns with operation of the CCS as the ultimate heat sink for Units 3 and 4, suggest that the environmental impacts of the operation of the CCS are not yet fully understood or quantified and have become more significant and widespread over time; have fallen outside the range of operating experience for the plant given the decline and continued dysfunction of the CCS and the uncertainty regarding the impact of proposed solutions; and that changes in the environment around the plant have been, in some cases, precipitous and unpredictable.

Miami-Dade County believes the EIS should consider the following overarching issues associated with the operating license renewal application: the impact of continued operation of the CCS on groundwater and surface water resources in the affected environment, the impact sea level rise will have on the physical performance of the CCS as the ultimate heat sink for the facility, and the water quality impacts that may be further exacerbated by the effects of sea level rise considering south Florida's porous limestone geology. The County believes the issues outlined herein are new and significant since the publication of the updated GEIS and may not meet all of the Category 1 criteria as required to be excluded from additional review, and should be considered Category 2 issues for the NRC's consideration and further review.

Site Setting

FPL's Turkey Point Power Plant immediately borders Biscayne National Park, the Florida Keys National Marine Sanctuary, and the Biscayne Bay Aquatic Preserve, respectively, to its east. Pursuant to 62-302.700 Florida Administrative Code, these national and state designations together afford these surface waters the highest level of protection in the state, both as Outstanding National Resource Waters and Outstanding Florida Waters, with Everglades National Park boundaries existing just south of the Sanctuary's. Over 20,000 acres of publicly-owned conservation lands, portions of which are managed by Miami-Dade County's Environmental Endangered Lands program, are situated west of the plant within a wetland basin that is largely rain-driven and affected by competing freshwater needs of adjacent users, including FPL [See Exhibit A map]. This unique configuration of local, state, and federally protected lands and/or surface waters warrant consideration such that mitigation of adverse impacts as a result of operating the plant in the future should sufficiently address protection of these regional and national resources.

Operation of the CCS

Although the CCS is identified as a "closed loop system", it is important to note that due to south Florida's local geology, surface water from the CCS and underlying groundwater moves freely through the porous bedrock and beyond the boundaries of the facility. This is evident through evaluation of the monitoring data documenting the presence of Tritium above background levels in groundwater and surface water beyond the boundaries of the facility. Monitoring data indicate that operation of the Cooling Canal System (CCS) has resulted in exceedances of Miami-Dade County's groundwater and surface water standards, in violation of Chapter 24 of the Code of Miami-Dade County. The County entered into a Consent Agreement with FPL on October 7, 2015 as a result of documented chloride contamination in groundwater outside FPL's property boundaries. FPL is also under a Consent Order by the Florida Department of Environmental Protection (FDEP) to address water quality impacts associated with the CCS. Additionally, exceedances of ammonia in groundwater and surface water have also been documented and have resulted in FPL being required to submit a site assessment report (SAR) to the County to investigate the source and fate of nitrogen leaving the FPL property. An evaluation of the total ammonia (ammonia) groundwater data including historical data (since 2010) from groundwater monitoring wells within (TP-GW13 series) and immediately adjacent to the CCS (TP-GW2 and TP-GW1 series) indicate a statistically significant increasing trend (Mann Kendall Trend Analysis; 0.05 significance level, 0.95 confidence level) and a concentration gradient emanating from the CCS at the deep and intermediate intervals. Miami-Dade County continues to coordinate with FPL on implementation of remedial actions required pursuant to the Consent Agreement, including the installation and operation of a recovery well system to capture, contain and retract the hypersaline plume. However, the County does not agree with FPL's assertions as provided in the Environmental Report that the CCS is not the source of ammonia exceedances documented in adjacent surface water

bodies. Therefore, the EIS should consider all monitoring data collected as part of the FPL Units 3 and 4 Uprate project as well as data collected under the Consent Agreement, including the SAR to evaluate the potential impact of the CCS operations on water resources in the area.

The main function of the CCS is to provide water to cool the two nuclear reactors, Units 3 and 4, and serve as the Turkey Point Plant's industrial wastewater treatment facility. The system commenced operations in the early 1970s and until very recently (beginning in late February to early March of 2012) it operated as a clear water, seagrass-based biological system. Salinity data from historical NPDES required monitoring and more recently (June 2010 to present) from monitoring required by the State of Florida and Miami-Dade County as part of the State certification for the Units 3 & 4 Uprate project indicate that the salinity in the CCS experienced an increasing trend which culminated with daily average salinity levels in the low 90s PSU in 2014 and the mid-90s PSU in June 2015. Water quality data from the Uprate monitoring project indicate that the system experienced a dramatic increase in the organic nitrogen levels in surface waters that first became evident in March of 2012. The levels of organic nitrogen in the CCS surface water appear to have fueled a cyanobacteria algal bloom that marked the beginning of the biological collapse of the system which has continued to experience recurring algal blooms, ultimately resulting in the die-off of the seagrass beds, which performed a key role in allowing the system to perform its main functions as the ultimate heat sink. Among other things, the seagrass beds helped remove nutrients from the water column and maintained water clarity. The collapse of the seagrass has resulted in recurring cyanobacteria algal blooms that serve to maintain high nitrogen levels and poor water clarity, which have impacted the system's ability to perform its primary function without the use of external water sources as it did previously.

Miami-Dade County has concerns regarding the long-term viability of the CCS to meet its intended purpose as the ultimate heat sink without the need for external sources of fresh or low salinity water sources in a basin already facing water shortages, saltwater intrusion and sea level rise. The EIS should consider and analyze all available data including the most recent post Uprate data, to fully evaluate the function of the CCS over the next 34 to 35 years, including plans for the addition of external sources of fresh or low saline water, and its impact on water resources in the area.

Physical Characteristics of the CCS and Vulnerability to Sea Level Rise

Changing conditions associated with sea level rise will contribute to higher stages in the CCS as a result of the groundwater table rising as sea levels rise and as king tide events impact the coastline. Higher stages in the CCS may alter the gravity-driven system in the CCS such that the ability for the CCS to move water through the cooling canals may be negatively affected, leading to the inability of the cooling canals to dissipate water temperatures at the point of uptake. Additionally, sea level rise may contribute to the surface water to surface water communication between the water in the CCS and waters of the national park, national marine sanctuary, and/or state aquatic preserve. Given the predictions with respect to sea-level rise, as reported in the Unified Sea level Rise Projection for Southeast Florida prepared by the Southeast Florida Regional Climate Change Compact (October 2015), and based on the location and surface elevation of the FPL power plant, the EIS should evaluate the potential impacts of sea level rise on the operation and safety of the facility and its associated cooling canal system.

Special Status Species and Habitats

Annual reports required for permits with U.S. Fish and Wildlife Service, Florida Fish and Wildlife Conservation Commission, and the Florida Department of Environmental Protection indicate considerable changes in the population of the American crocodile at Turkey Point over the last decade. Between 2005 and 2016 there was a notable decrease in the number of individuals sighted per survey, number of tagged hatchlings and number of successful nests. The number of dead hatchlings and infertile eggs in successful nests has increased and physical deformities of hatchlings were reported between 2009 and 2014. Studies conducted on the crocodile population at Turkey Point since the reported collapse of the CCS in 2012 documented poor body condition of animals and impaired osmoregulation abilities. The EIS should include a review of data on long term population trends and monitoring of the American crocodile as well as other listed species that may utilize the facility.

DERM has been involved in review and evaluation of various aspects of the Turkey Point facility, the CCS and associated monitoring data over the past several years. DERM is committed to providing assistance to the NRC in your review of this application. For a link to information related to DERM's comments, please see instructions provided in attachment B. If you have any questions or need additional information, please contact Lisa Spadafina, Chief of DERM's Natural Resources Division at 305-372-6567, or via email at Lisa.Spadafina@miamidade.gov.

Sincerely,

Lee N. Hefty
Director Division of Environmental Resources Management

Enclosures: Attachment A: South Dade Wetlands Map
Attachment B: Electronic Content Management Instructions

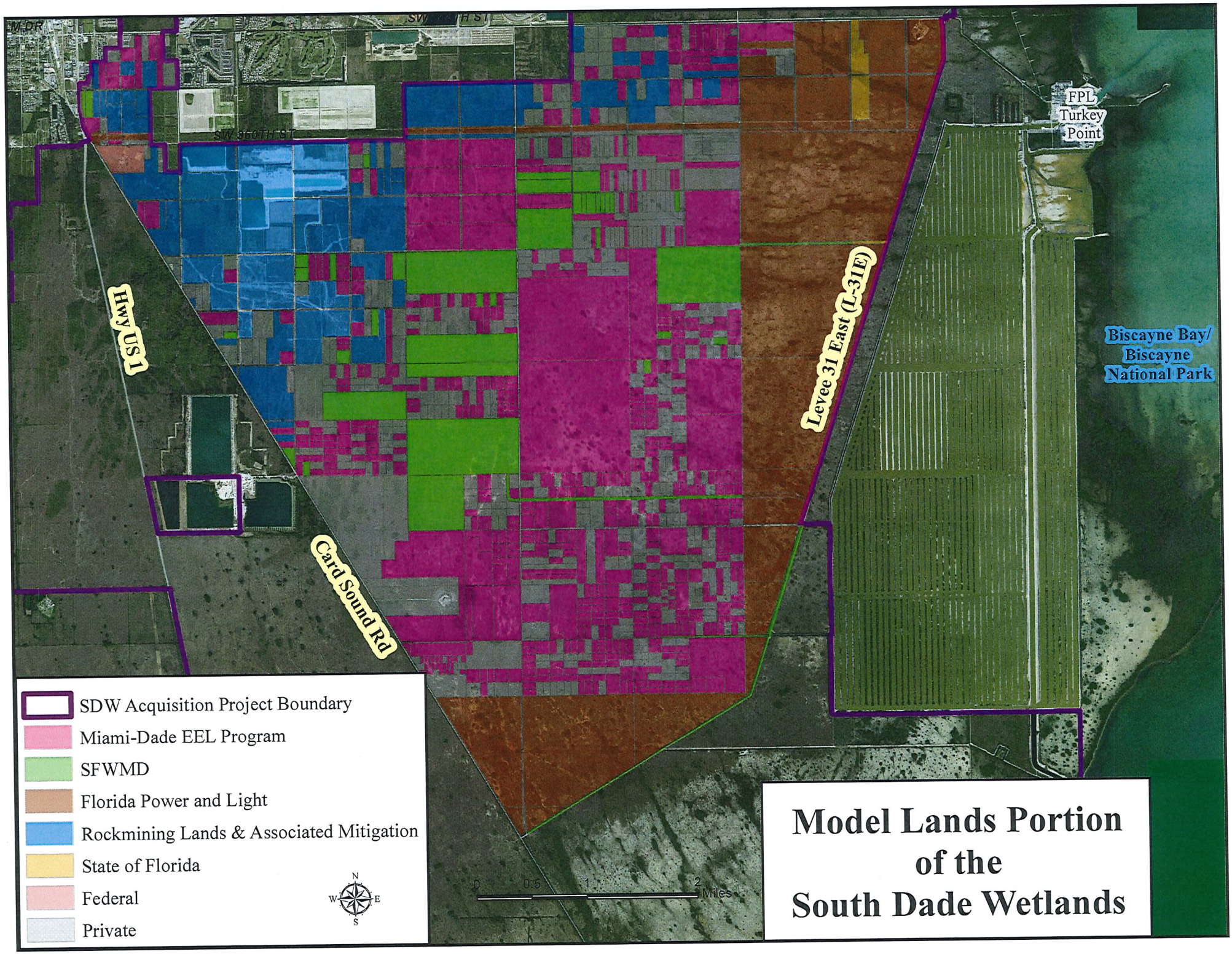
Attachment B

DERM electronic records management system link:

http://ecmrer.miamidade.gov:8080/hpi/search

Search for the following folders under "Case Number": HWR-00851

CLI-2014-0312


SW 344TH ST
SW 360TH ST
FPL Turkey Point
Hwy US1
Card Sound Rd
Levee 31 East (L-31E)
Biscayne Bay/ Biscayne National Park
SDW Acquisition Project Boundary
Miami-Dade EEL Program
SFWMD
Florida Power and Light
Rockmining Lands & Associated Mitigation
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