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

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(Sent via electronic mail)

Laurel Bauer
Acting Chief, Environmental Projects Branch
U.S. Nuclear Regulatory Commission
Division of Site and Environmental Reviews, Office of New Reactors
Mail Stop T7-E30
Washington, DC 20555-0001

Attention: Andrew Kugler

Dear Ms Bauer:

NOAA's National Marine Fisheries Service (NMFS) reviewed your letter dated June 23, 2010, and the announcement in the Federal Register from June 15, 2010, requesting views, comments, and information regarding the Nuclear Regulatory Commission's (NRC) efforts to prepare an Environmental Impact Statement (EIS) for the construction and operation of new nuclear power units at the Florida Power and Light Company's (FPL) Turkey Point site near Homestead, Florida, in Miami-Dade County. As part of the licensing process, NRC is evaluating the environmental effects associated with construction and operation of two new nuclear units, referred to as Units 6 and 7. The following comments consider information provided in the federal register notice and interagency meetings on August 28, 2009 (with NRC and federal, state, and local agencies), August 2, 2010 (with FPL, the Environmental Protection Agency, Florida Fish and Wildlife Conservation Commission, and NMFS) and August 2, 2010 (a separate meeting with the Jacksonville District, Florida Fish and Wildlife Conservation Commission, and NMFS).

Description of the Proposed Action
The proposed action would involve the NRC issuing a combined license, referred to as a "COL," to FPL to build Units 6 and 7. The new units would be built on an undeveloped island at the Turkey Point site. The island would be filled to approximately 25 feet above sea level. This island is approximately 300 acres, and its current land use is classified as an industrial wastewater facility. The Jacksonville District and the Environmental Protection Agency have not yet determined if the wetlands are jurisdictional. Additional plans for the Turkey Point site include expanding a roadway, dredging an existing barge slip, and constructing a training center, parking lot, cooling towers, and facility for treating reclaimed water. Offsite areas that would be

affected include routes for new transmission lines, a route for the reclaimed water pipeline, and a borrow pit for fill material. The total wetland impacts are on the order of 700 acres and include approximately 50 acres of mangrove habitat largely associated with the water treatment facility. Seagrass is also present within the proposed dredge area.

The proposed cooling system would use reclaimed water from the Miami-Dade Water and Sewer Department as the primary source for the closed-cycle wet cooling system. Currently this water is discharged offshore through an ocean outfall. Water would be delivered via pipeline to a water treatment plant and then transported to a basin under the cooling towers. The information provided states that the maximum make-up rate from this system would be approximately 43,200 gallons per minute to make up losses from evaporation, blowdown, and drift. Waste heat would be dissipated to the atmosphere through three mechanical-draft cooling towers for each unit. Blowdown from the cooling towers would be discharged via deep injection wells into the "Boulder Zone" of the lower Floridan Aquifer.

Approximately 70 million gallons of water per day (mgd) would be delivered through this pipeline, however the actual water needed for the project is approximately 59 mgd. The additional excess water would be delivered to unit 5, which currently draws water from the Floridan Aquifer and the remainder of the water would be delivered to restoration sites, including one located west of the Turkey Point facility.

In order to ensure the availability of water, FPL also plans to build a 100 percent back-up system that would use radial wells built under Biscayne Bay. The system would be composed of four onshore caissons with eight lateral lines constructed 40 feet below the Bay bottom to a distance approximately 900 feet from the caisson. These lines would be constructed using horizontal directional drilling (HDD). Based on the results of modeling provided by FPL, they estimate that while the radial wells are in operation, a 0.55 ppt maximum average salinity difference could be detected within the Bay. FPL does not expect to use the radial wells for water unless reclaimed water becomes unavailable (e.g., due to a hurricane or pipeline break), however FPL expects that on a quarterly basis, they would draw water from the radial wells for system maintenance. The water withdraws will occur for a duration of minutes to hours.

As compensatory mitigation for the wetland impacts, FPL is considering a combination of purchasing credits at their Everglades Mitigation Bank, restoration of wetlands within the Everglades National Park Hole-in-the-Donut site, hydrological enhancements, and creating other wildlife habitat areas.

Other Alternatives under Evaluation
Alternatives under study by NRC include the "no action" alternative and non-nuclear energy sources. Alternative locations for the nuclear facility include sites located in Glades County (using Lake Okeechobee or the C-43 Channel as water supply), Martin County (using Lake Okeechobee or the C-44 Channel as a water supply), Okeechobee County (using Lake Okeechobee or the Kissimmee River as a water supply), and St. Lucie County (using the Atlantic Ocean and a water supply).

Essential Fish Habitat within the Project Area

Mangrove: The South Atlantic Fishery Management Council (SAFMC) designates mangroves as EFH for juvenile gray snapper (*Lutjanus griseus*), dog snapper (*L. jocu*), bluestriped grunt (*Haemulon sciurus*), spiny lobster (*Panulirus argus*), and pink shrimp (*Farfantepenaeus duorarum*). Mangrove habitats are ecologically important coastal ecosystems (Lugo and Snedaker 1974). At a recent meeting, FPL suggested that the mangrove habitat that would be impacted by the water treatment facility (approximately 50 acres) is composed of dwarf red mangroves (*Rhizophora mangle*) with hypersaline conditions and lack of direct connection to other wetlands or water bodies. These types of mangrove wetlands still provide ecological services including as a buffer against storm surges, they reduce shoreline erosion and turbidity, and absorb and transform nutrients. While this mangrove system may not be inhabited to a large degree by various life stages of federally managed fisheries, they may contribute dissolved and particulate organic detritus to estuarine food webs. They help shape local geomorphic processes and are important in the heterogeneity of landforms which provide shelter, foraging grounds and nursery areas for terrestrial organisms (e.g., through bird use as a rookery and feeding on fish). The root system binds sediments thereby contributing to sedimentation and sediment stabilization.

The prevailing paradigm regarding food webs of mangrove-dominated estuarine ecosystems is that they are based on particulate mangrove detritus, but recent research indicates that the dissolved organic form may be equally important. Each habitat type may export organic matter that generates chemical cues regulating the presence or absence and abundance of estuarine organisms and thus, the predictable spatial and temporal patterns of marine life. Determining the types and numbers of organisms that exploit these habitats, the functional aspects of habitat use, and how mangrove organic matter is transferred to higher trophic levels is critical, and are requisites for modeling linkages between variations in mangrove productivity and variations in faunal abundances. Mangroves may influence nutrient dynamics and associated coastal productivity by either removing or contributing nutrients to these systems, and data on their function in maintaining water quality of estuarine ecosystems is limited (SAFMC 1998).

Worldwide, mangrove ecosystems have declined by approximately 35 percent (Valiela et al. 2001). In Florida, were most U.S. mangroves are located, current mangrove coverage represents a significant reduction from coverage that existed 100 years ago (Gilmore and Snedaker 1993, Sklar and Browder 1998).

Seagrass and Unconsolidated Bottom: SAFMC also designates seagrass as EFH. Species associated with seagrass include pink shrimp, spiny lobster, and estuarine life stages of various species within the snapper/grouper complex including adult white grunt (*Haemulon plumieri*); juvenile and adult gray snapper (*Lutjanus griseus*); juvenile mutton snapper (*Lutjanus analis*). Any bottom-disturbing activities within areas that are seagrass habitat must include best management practices to avoid impacting this habitat. SAFMC also designates soft bottom habitat as EFH because it plays an important role in the ecological function of coastal ecosystems by controlling fluxes of nutrients between the sediment and the water column. Shallow water, unconsolidated bottom also provides EFH by serving as nursery grounds for early life stages of benthic-oriented, estuarine-dependent species; refuges and feeding grounds for

forage species and juvenile fishes (SAFMC 2009) and feeding grounds for specialized predators, including adult white grunts (Potts and Manooch 2001).

Habitat Area of Particular Concern within the Project Area
SAFMC also identifies mangroves and seagrass as a Habitat Area of Particular Concern (HAPC) for several species within the snapper/grouper complex. HAPCs are subsets of EFH that are either rare, particularly susceptible to human-induced degradation, especially important ecologically, or located in an environmentally stressed area. Federal actions with potential adversely impacts HAPCs will be more carefully scrutinized during the consultation process and subject to more stringent conservation recommendations.

In addition, Biscayne Bay is an EFH-HAPC for spiny lobster. Biscayne Bay and the Biscayne National Park are also an EFH-HAPC for coral, coral reefs, and hardbottoms (SAFMC 1998).

Essential Fish Habitat Consultation Requirements
The Magnuson-Stevens Act directs federal agencies to consult with NMFS when the agency's activities may have an adverse affect on EFH. We recommend that the NRC coordinate closely with the NMFS Habitat Conservation Division to ensure the EFH assessment and NEPA documents contain sufficient detail, 50 CFR 600.10 to 600.920 describes the content required of an EFH assessment. Specifically, the components of an EFH assessment can be found at 50 CFR 600.920(e)(3) and (4) and are listed below (additional comments are provided in parentheses). The EFH assessment can be incorporated into the EIS or provided to NMFS under separate cover.

<u>Components of an EFH Assessment:</u>

1. Description of the action. (This section can reference relevant portions of the EIS.)
2. Analysis of the potential adverse effects of the action on EFH and the managed species.
3. Federal agency's conclusions regarding the effects of the action on EFH.
4. Proposed mitigation. (Unavoidable direct and indirect impacts to EFH will require compensatory mitigation.)
5. Results of an on-site inspection to evaluate the habitat and the site-specific effects of the project.
6. Views of recognized experts on the habitat or species that may be affected.
7. Review of pertinent literature and related information.
8. An analysis of alternatives to the proposed action. (This section can reference relevant portions of the EIS alternatives analysis.)

<u>Other specific issues NMFS recommends for evaluation in the EIS or EFH assessment</u>

1. *Radial wells.* Impacts to EFH associated with radial well construction and operation within Biscayne Bay should be fully evaluated. The evaluations should include:
    a. Detailed HDD routes and examinations of the potential for frac-outs. Monitoring and mitigation measures for frac-out detection and clean-up will also be needed.
    b. Detailed explanations of the circumstances under which radial wells would be required and at what capacities.

c. An evaluation of impacts associated with extended use of the radial well system to include an evaluation of impacts to groundwater that is closely tied to surface water in this porous karst area and thereby supports fish and wildlife resources.
d. A more clear explanation of how use of the radial wells will affect salinity, including identification of the geographic area that would be affected and how that area would change seasonally and under various environmental conditions (such as tides and prevailing wind conditions). This analysis of effects on water quality also should include pH and temperature.
e. A survey and monitoring plan that would enable FPL to determine impacts from radial wells to localized habitats and the fish and wildlife that depend on them.

2. *Deep-well injection.* Please provide an evaluation of effects to fish and wildlife resources from proposed deep-well injection activities. The evaluation should describe the fate (location and concentration over time),of any nuclides injected into the well.
3. *Cooling towers.* Please evaluate potential impacts to wetlands from salt deposition from the cooling towers.
4. *Biscayne Bay Coastal Wetlands (BBCW).* Please describe any potential conflicts this project may have with the restoration goals of BBCW. Please indicate how FPL and NRC are working with the BBCW team to ensure that any expansion at Turkey Point will not hinder the success of the BBCW project.
5. *Sea level rise.* Please include information in the EIS that evaluates potential seal level rise scenarios and how the project is being designed to mitigate these effects.

Thank you for the opportunity to provide comments. Related correspondence should be directed to the attention of Ms. Jocelyn Karazsia at our West Palm Beach office, which is co-located with the US Environmental Protection Agency at USEPA, 400 North Congress Avenue, Suite 120, West Palm Beach, Florida, 33401. She may be reached by telephone at (561) 616-8880, extension 207, or by e-mail at Jocelyn.Karazsia@noaa.gov.

Sincerely,

/ for

Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

cc:

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