U.S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

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In Reply Refer
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By Electronic Mail

August 16, 2010

Chief, Rules, Announcements and Directives Branch
Division of Administrative Services
Mail Stop TWB-05-B01M
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Subject: Florida Power and Light Company (FPL)
Turkey Point Units 6 and 7 Combined License Application Review
Scoping Comments

Dear Sir or Madam:

This letter is in response to your June 24, 2010 letter requesting the National Park Service's (NPS) participation in the scoping process for the Nuclear Regulatory Commission's (NRC) Environmental Impact Statement (EIS) for the Turkey Point 6 & 7 Combined License Application (COLA).

The NPS has reviewed the COLA and the related Site Certification Application (SCA) submitted for State of Florida approvals under the Florida Power Plant Siting Act. Our agency has been involved in the SCA review process for the last three years as a stakeholder and adjacent lands trustee. During this process, we have identified a number of concerns regarding potential adverse impacts of the proposed facilities to the resources and values of Biscayne and Everglades National Parks, to regional water resources and to the Biscayne Bay Coastal Wetlands project, a component of the Comprehensive Everglades Restoration Plan (CERP).

The parks encourage the NRC to carefully analyze the activities which would be permitted as Preconstruction Activities and/or Limited Work Authorization Construction. This project is located in a highly sensitive, wetlands coastal environment, immediately adjacent to a national park, and components of the COL are proposed to run through or adjacent to a second national park. This permit evaluation will examine the environmental impacts of roads, bridges, facility location, transmission lines, cooling water pipelines (radial collector wells), and other issues. Although these non-safety related components may frequently be allowed as Preconstruction Activities and/or Limited Work Authorization Construction, the parks believe many of these activities present the potential for cumulative impacts to this sensitive ecosystem and require a greater amount of environmental review than the LWA process provides.

We recommend that the following issues and concerns be addressed in the EIS prepared by your agency for this project. Additional detailed comments are provided in Attachment 1. NPS letters submitted to the Florida Department of Environmental Protection during the SCA review process are provided for your consideration in Attachment 2.

1. Background

The following is an overview of critical legal and other responsibilities of the NPS that we have considered in our review of the COLA and SCA. This information provides the context and rationale for our comments.

NPS Organic Act of 1916

Under the NPS Organic Act, the NPS has a duty to ensure that our treasured National Park System units are protected unimpaired for the enjoyment of this and future generations. In this Act, Congress directed the U.S. Department of the Interior and the NPS to manage units of the National Park System *"to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such a manner and by such a means as will leave them unimpaired for the enjoyment of future generations"* (16 USC 1).

Biscayne National Park's enabling legislation, 1968 and again in 1980

Directs the NPS 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..."*

The mission of Everglades National Park, derived from its 1934 enabling legislation and the Everglades National Park Protection and Expansion Act of 1989

Indicates that *Everglades National Park is a public park for the benefit and enjoyment of the people. It is set apart as a permanent wilderness preserving essential primitive conditions, including the natural abundance, diversity, behavior, and ecological integrity of the unique flora and fauna.*

***Water Resources Development Act of 2000* (Federal law establishing authorizing CERP)**

"The overarching objective of the Plan is the restoration, preservation, and protection of the South Florida Ecosystem while providing for other water-related needs of the region, including water supply and flood protection. The Plan shall be implemented to ensure the protection of water quality in, the reduction of freshwater loss from, the improvement of the environment of the South Florida Ecosystem and to achieve and maintain the benefits of the natural system and human environment described in the Plan..."

Biscayne Bay Coastal Wetlands Project

This CERP project attempts to reverse degradation of coastal wetlands, and degradation and loss of fishery resources in Biscayne National Park. Of particular concern to NPS is the elimination of point source discharges, ensuring restoration of coastal wetlands, and restoration of near-shore salinity regimes. If the project is not successful, degradation will not be reversed and sustainability of existing marine natural resources in the Park will be jeopardized. These resources include over 5,000 acres of near-shore nursery habitat and the habitats for the Federally listed American crocodile and West Indian manatee.

Outstanding Florida Water

Biscayne National Park is designated as an Outstanding Florida Water and an Outstanding National Resource Water pursuant to Rule 62-302.700 of Florida Administrative Code (F.A.C.). Everglades National Park is also designated as an Outstanding Florida Water. Any discharges or activities that may cause degradation of water quality and natural resources, other than that allowed in Rule 62-4.242(2) and (3) of F.A.C., are prohibited.

2. Inconsistency between Combined License and Site Certification Applications

Based on the review of the Environmental Report, Part 3, submitted as part of the Nuclear Regulatory Commission (NRC) Combined Operating License (COL), several inconsistencies have been noted when compared to the State of Florida Site Certification Application (SCA). The COL and the State of Florida SCA should contain the same design specifications and construction elements.

For example, the FPL-owned fill source (rock mine) has been removed from the State of Florida SCA and the Army Corps of Engineers permit application. Without the Florida and ACOE permit approvals, the excavation cannot proceed.

The Florida Department of Environmental Protection (FDEP) is requiring a revised groundwater model due to many deficiencies, including the inability to effectively simulate impacts to Biscayne Bay; as a result, the SCA remains incomplete to date. Thus, a revised groundwater model is pending submittal to the State of Florida for the SCA process. The revised SCA groundwater model should be consistent with the groundwater model submitted as part of the COLA. A model that represents the Biscayne Aquifer and site specific hydrologic features is necessary to fully evaluate the impacts of the operation of the radial collector wells (RCWs) on the Biscayne Bay nearshore ecosystem function (see Attachment 1. B.). Therefore, the COLA groundwater model results that claim 92 to 100 percent of the intake water for the RCWs comes from the bay has not been substantiated.

Likewise, FPL recently proposed a restriction on using the RCWs to 90 days per year; this proposed restriction is not mentioned in the COLA. Such inconsistencies between the two separate applications should be resolved and the State of Florida SCA and NRC COL applications should be fairly uniform.

3. Adequacy of the Power Plant Site-Selection Process

A review of the "Florida Power & Light Company Project Bluegrass Nuclear Power Plant Site Selection Study Report" (summarized in COL Environmental Report, Section 9.3), leads the National Park Service (NPS) to question the adequacy of the site selection study. Please note that only excerpts from the site selection study report referenced above were included as part of Section 9.3 of the COL Environmental Report.

For instance, the Cooling Water Supply Criterion, P1, is based on an ocean intake water source (to avoid Biscayne Bay) approximately seven miles offshore as a back-up water supply source (Pages B-3, B-4, C-93, and C-99). Therefore, it appears that the RCWs, proposed for use as a water source in the COL, may not have been evaluated as part of the site selection process.

Moreover, the land use rating issued to Turkey Point was the highest (most favorable) among the eight site locations evaluated even though ecologically sensitive habitats were identified. The Report simply assumed that the "Biscayne National Park would not be affected by the plant since land is owned by FPL and existing power plants/nuclear units are located there now" (Page C-95). However, the RCW operation and use of the area for the CERP Biscayne Bay Coastal Wetlands project was not considered during that analysis.

Furthermore, the Turkey Point location was issued the highest possible index score for possible risk of groundwater contamination, compared to the other locations evaluated (Page C-51). The Ecology/Federal RTE Species Criterion, P5, identified Turkey Point as having the highest number of threatened and endangered (T&E) species (Page B-19). The evaluation of disruption to important species was based on the Federally protected species list (22 aquatic and terrestrial species); this review did not consider State of Florida T&E species. If the NPS is to be a cooperating agency on the EIS, then impacts to state-listed and locally-listed species would need to be evaluated in this document as well (NPS Management Policies 2006 sec. 4.4.2.3). Moreover, the Wetlands Criterion, P6, did not include estuarine, marine, riverine, or freshwater pond wetland acreage in the evaluation (page B-21), all of which are required to be considered due to the potential impacts associated with the RCW operation.

Of particular concern is the fact that the Turkey Point location received an average score during the initial screening site selection evaluation (Page 16), yet that score was changed to the highest favorable score in the final general criteria evaluation (Page 23). The reason for the increase in favorability is unclear. It appears that the Turkey Point location was given additional weight based on non-quantified socioeconomic factors.

Based on the above, the NPS recommends that the site selection process be re-evaluated, reflect the actual proposed features of the COL application, and consist of a more detailed and accurate comprehensive analysis that accounts for the RCW operation, state and federal T&E listed species and their habitats, conflicts with CERP Biscayne Bay Coastal Wetlands projects, and a quantifiable socioeconomic analysis. It is important that these factors be carefully considered in the process because they could significantly affect the results.

4. Alternate Power Plant Sites

The EIS should include a comprehensive evaluation of the potential impacts of constructing and operating two nuclear power plants and related facilities at the four alternate sites located in Glades, Martin, Okeechobee and St. Lucie Counties. This analysis will enable the applicant, stakeholders, decision-makers and the general public to identify the environmentally preferable alternative and if there is an "obviously superior site" for the construction and operation of the proposed facilities.

5. Impacts of Power Plants and Non-Transmission Facilities

The cumulative effects of the proposed Units 6&7 plants and non-transmission facilities will place considerable stress on an already vulnerable ecosystem and potentially cause harm to Biscayne Bay and adjacent coastal wetlands. Disturbances to estuarine, marine, and terrestrial habitats are likely to result from proposed Units 6&7construction and operation. The operation of the RCWs would result in hydrologic impacts, including ground and surface water, on Biscayne Bay due to geological disturbances,

resulting in water volume and quality alterations posing a threat to ecosystem function of the nearshore habitats of Biscayne Bay. The cone of influence during the operation of the RCWs extends into Biscayne National Park boundaries. Therefore, a large portion of the nearly 124 million gallons of Biscayne Bay water will originate from within Biscayne National Park boundaries, which is a protected water body.

The Summary of Measures and Controls to limit Adverse Impacts during Construction (Table 4.6-1, COL, Environmental Report, Part 3, Ch. 4) assesses the cumulative impacts to land use, hydrology, water use, subsurface flow, ecology, and socioeconomics, as a result of the construction of the entire Unit 6&7 plant (pre and post construction). FPL lists most impacts as small in this analysis, compared to moderate or large. Small is defined by FPL as "Environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute or resource." A striking aspect of this analysis is the incorporation of CERP features as either a contributable negative or positive impact to Units 6&7 construction. FPL appears to use benefits from the proposed Biscayne Bay Coastal Wetlands/CERP project to mitigate the environmental impacts of the Units 6&7 construction. This appears highly inappropriate in the determination of total impacts from the FPL project. Therefore, the NPS requests that this analysis be carefully evaluated to consider the impacts Unit 6&7 combined construction will have on Biscayne Bay Coastal Wetlands/CERP implementation, as well as, all other associated impacts to the environment.

A robust, peer-reviewed hydrologic modeling analysis is essential to fully incorporate regional and site-specific conditions in the vicinity of Turkey Point. The Biscayne Aquifer has a unique lithology and consists of a karst substrate with very high transmissivity. This surficial aquifer is hydraulically connected to nearby man-made surface water bodies, which has a profound impact on model construction. FPL's current groundwater model fails to simulate actual or planned conditions that include: seasonal and temporal variability, hypersaline plume migration, Biscayne Aquifer heterogeneity, and CERP project implementation. Due to the coastal location of the Turkey Point site, flooding due to severe storm events should be given special consideration. Extreme flooding could cause significant flushing of contaminants into Biscayne Bay from the Cooling Canal system due to its lower elevation (i.e., 1 to 3 feet above sea level). NPS does not believe the COL sufficiently analyzes or evaluates these hydrological and estuarine issues.

The COL proposes the use of tertiary treated wastewater as the primary cooling water supply source for Units 6&7. The environmental risk associated with the aerial dispersal and possible subsurface release of micro-constituents, sometimes referred to as Environmental Pollutants of Concern (EPOCs), commonly associated with treated waste water requires further evaluation. Treated wastewater from municipal sewage commonly includes pharmaceuticals and personal care products (PPCPs), as well as various endocrine disrupter compounds (EDCs), and frequently heavy metals and other contaminates not normally removed in tertiary treatment. Biscayne Bay is designated an Outstanding Florida Water and as such has a no degradation standard. The use of tertiary treated wastewater for cooling water would indirectly introduce PPCPs, surfactants, biocides, and EDCs into southern Biscayne Bay that were not present at the time of designation.

Additional comments provided in Attachment 1.B further details NPS concerns regarding the impacts associated with full implementation of Units 6&7 plants and non-transmission facilities.

6. Impacts of Transmission Lines and Related Facilities

The EIS should evaluate the direct, indirect and cumulative effects of the transmission lines and related facilities needed to connect Units 6 & 7 to FPL's electric transmission system.

Eastern Preferred Transmission Corridor

The Eastern Preferred Transmission Line Corridor should be evaluated for impacts to migratory, roosting, and nesting birds. State-listed wading birds (e.g., white ibis) have nightly roosts in islands of Biscayne National Park, and they fly to the mainland daily crossing over proposed Eastern transmission lines. In addition, bald eagles, ospreys, and State-listed wading birds also have active nests within Biscayne National Park boundaries. A risk assessment should be performed that outlines specific methods that will be employed to minimize impacts to roosting and nesting birds.

Western Transmission Line Corridor

The Western Transmission Line Corridor includes two options, a West Preferred Corridor option and a West Secondary Corridor option. Either option would include the installation of two 500 kV transmission lines, one 230 kV transmission line and related towers, guy wires, ground wires, fill pads, and access roads. Both corridors are partially located within the boundaries of Everglades National Park Expansion Area as shown in Fig 9.4-13 of the COLA Environmental Report. The following sections provide information about the purposes of the Expansion Area, the potential impacts of constructing transmission lines in this area, and a potential NPS/FPL land exchange currently under consideration by the NPS.

The Everglades National Park Protection and Expansion Act of 1989 expanded the boundaries of the park by 109,500 acres in order to *"increase the level of protection and outstanding natural values of the Park"* and *"to enhance and restore the ecological values, natural hydrologic conditions, and public enjoyment of the area."* The Act directs the Secretary of the Interior to manage the park *"in order to maintain the natural abundance, diversity and ecological integrity of native plants and animals, as well as the behavior of native plants and animals, as part of their ecosystem."* The Expansion Act and additional legislation authorized the NPS and Army Corps of Engineers (ACOE) to acquire lands within the designated Expansion Area by purchase, donation or exchange. The Act also authorized and directed the U.S. Army Corps of Engineers to construct modifications to the Central and Southern Florida Project to improve water deliveries to the park and, to the extent practicable, take steps to restore the natural hydrologic conditions within the park.

FPL owns, and has owned since the 1960's and early 1970's, approximately 320 acres of undeveloped land within the Expansion Area (part of the West Secondary Corridor). Since the FPL Property is currently undeveloped and is needed for the restoration and enhancement of the ecosystem through improvement of natural hydrologic conditions, the NPS intends to acquire the FPL property and manage it as part of ENP and to maintain the FPL Property in its undeveloped natural condition. The NPS began negotiations with FPL in 1996 but to date the federal government and FPL have been unable to reach an agreement on the direct acquisition of FPL's property by the United States.

Potential NPS/FPL Land Exchange

As noted, in Section 9.4.3.1 of the COLA Environmental Report, the Omnibus Public Land Management Act of 2009 authorized the Secretary of the Interior to exchange 260 acres of NPS property within and along the eastern edge of the Expansion Area (part of FPL's West Preferred Corridor) for FPL's 320-acre property within the Expansion Area (part of FPL's West Secondary Corridor). The NPS lands being considered for exchange were acquired by the NPS for the purpose of restoring the hydrology and ecology of the park. The exchange decision is left to the Secretary's discretion subject to conditions necessary for protection of resources, equalization of land values and evaluation of potential environmental impacts pursuant to the National Environmental Policy Act (NEPA). The NPS is currently preparing an environmental assessment regarding the potential exchange. At the conclusion of the NEPA process, the NPS will decide whether to exchange lands with FPL or to acquire the FPL property by direct purchase/eminent domain. There are many uncertainties regarding the exchange, and it is not a foregone conclusion that the NPS will decide to exchange lands. An NPS decision to acquire FPL's property, rather than exchange lands, would result in neither corridor within the Park being available for placement of transmission lines.

Additional details about the exchange are provided in the NPS June 8, 2010 letter to the FDEP included in Attachment 2.

Impacts of Transmission Lines

Potential impacts from the construction and operation of transmission lines and access roads in either the West Preferred or West Secondary Corridors include disruption of hydrologic flows; wildlife and habitat disruption; wetland plant community destruction; reduction of native plant species populations; adverse effects on threatened and endangered species and migratory birds; introduction of non-native, invasive species; air and water pollution; noise; impacts to cultural resources, adverse impacts to viewsheds and wilderness character; and degradation of park visitor experiences. A cultural resources survey should be performed to identify cultural resources in the two corridors and measures to avoid and minimize potential impacts.

The NPS is particularly concerned about the potential harm to water-dependent birds, including endangered wood storks, snail kites and a host of migratory bird species that nest, forage and feed within or near the West Preferred and West Secondary corridors. Potential effects include degradation or fragmentation of valuable wetlands habitat, disturbance of birds during construction, and the permanent risk of avian injuries and death from electrocution or collisions with the transmission lines, towers, and guy wires. This area is the focus of a number of important ecosystem restoration projects that specifically seek to increase the wetland function in these areas and provide improved habitat suitability for a variety of wetland-dependent species, particularly water-dependent birds. The construction of a large complex of transmission lines in this area creates a perpetual risk to birds that is inconsistent with the goals of Everglades restoration projects. The EIS should assess the impacts of the proposed transmission infrastructure on all avian species known to use the area with particular emphasis on state- and Federally-listed threatened and endangered and migratory bird species. A risk assessment should be performed that outlines specific methods that will be employed to avoid and minimize impacts to avian species.

Alternative West Transmission Corridors

In view of the foregoing discussion, the NPS recommends that the EIS identify and evaluate alternative Western Transmission Corridors outside the existing boundary of Everglades National Park and connecting wetland habitats. The National Environmental Policy Act mandates that reasonable alternatives to a proposed action be evaluated. Consistent with this requirement, the EIS should evaluate other corridors that could be considered as reasonable alternatives to the segments of the West Preferred and West Secondary Corridors that run through Everglades National Park (and Water Conservation Area 3B). The NPS recommends this analysis focus on the zone between Krome Avenue and the Miami-Dade County Urban Development Boundary in order to identify potential corridors that would avoid and minimize adverse impacts to people, wildlife in the Everglades ecosystem, special status species and other natural and cultural resources.

Additional comments provided in Attachment 1.C further details NPS concerns regarding the impacts associated with implementation of the proposed transmission facilities.

7. Climate Change/Sea Level Rise

The impacts of sea level rise due to climate change should be addressed as they pertain to the operation and maintenance of the RCWs and the hydrologic modeling, which is being used to forecast the percentage of water derived from Biscayne Bay versus freshwater from the Biscayne Aquifer. The effects of climate change should also address major storm events and cooling canal functionality over the projected lifespan of Units 6&7. Peer reviewed and governmental references should be part of this analysis, including the IPCC Fourth Assessment Report: Climate Change 2007; the Miami-Dade Climate Change report; and the Army Corps of Engineers, engineering circular – sea level rise 1165-2-211.

8. Potential conflicts with CERP Goals and Projects

The objective of the Biscayne Bay Coastal Wetlands project is to re-establish both overland freshwater flow and subsurface groundwater flow to the bay through coastal wetlands re-hydration, which intends to improve ecosystem function by stabilizing seasonal salinity patterns within the bay. FPL is seeking to extract Biscayne Bay surface water as a back-up water source for the reactor cooling water supply for Units 6&7 through the RCWs.

The CERP Biscayne Bay Coastal Wetlands preferred plan, Alternative O, includes plans to rehydrate wetlands in the vicinity of the proposed Turkey Point power plant site and poses a conflict with the COL application proposal to extract up to 124 million gallons per day from Biscayne Bay. The restoration project objective is to re-establish both overland freshwater flow and subsurface flow, which is intended to improve ecosystem function by stabilizing seasonal salinity patterns. Therefore, it appears likely that the withdrawal of Biscayne Bay water for cooling water supply is incompatible with the restoration goals, since it will intercept a percentage of the freshwater intended for restoration. The groundwater modeling, as we have described above and in Attachment 1.B, is currently insufficient to effectively simulate impacts to the bay, or even to determine the percentage of fresh water from the aquifer, which would be removed from the ecosystem by the RCWs. Until it can be satisfactorily determined that the RCW system will not remove aquifer water, this plan appears to conflict with the CERP Biscayne Bay Coastal Wetlands project.

The COLA proposes the excavation of fill material for the construction of the Units 6&7 Plant from a nearby FPL owned site behind the Homestead Air Force Base (HAFB) and adjacent to Biscayne National Park, although the FPL fill-source is no longer part of the State of Florida SCA. FPL intends to excavate a large amount of rock fill (approximately 300 acres) to elevate the proposed reactor construction site from approximately 1 foot above mean sea level to 26.5 feet above mean sea level. These activities will result in a large man-made lake, as a by-product of rock mining operations. The presence of this new lake would conflict with CERP design features planned for the Biscayne Bay Coastal Wetlands project because the lake would inhibit groundwater flow to the southeast and possibly exacerbate salt water intrusion inland.

The construction of proposed access roads to the new reactor facility will also impact the Biscayne Bay Coastal Wetlands Project by altering sheet flow that is important to the success of the Project. Road construction will also cause direct wetland loss and fragmentation..

Conclusion

In view of the range and complexity of the potential impacts described above and in the attachments, NPS urges a comprehensive evaluation, additional documentation, and consultation with respect to potential impacts of the Turkey Point 6 & 7 Project and other power plant and transmission corridor site alternatives. NPS concerns should be addressed in the EIS process in order to avoid and minimize potential adverse impacts to the resources and values of Biscayne and Everglades National Parks and conflicts with CERP goals and projects.

Thank you for the opportunity to provide scoping comments. Please contact Elsa Alvear (Biscayne National Park, 305-230-1144 extension 002) or Brien Culhane (Everglades National Park, 305-242-7717) if you have any questions regarding the above comments. Also, please do not hesitate to contact either of us on this matter.

Sincerely,

Mark Lewis

Mark Lewis, Superintendent
Biscayne National Park

Dan B. Kimball

Dan B. Kimball, Superintendent
Everglades & Dry Tortugas National Parks

Enclosures

Attachment 1:
A. Key Laws/policies governing protections of the Parks
B. Issues/concerns regarding Power Plant and Non-Transmission Line Facilities
C. Specific Issues/concerns regarding Transmission Facilities

Attachment 2:
A. Letters sent by Biscayne National Park to FDEP regarding the SCA process
B. Letter sent by Everglades National Park to FDEP regarding the SCA process

Cc:
David Vela, Regional Director, Southeast Region, National Park Service (NPS)
Jon Jarvis, Director, NPS
Steve Whitesell, Associate Director, Park Planning, Facilities and Lands, NPS
Bert Frost, Associate Director, Natural Resources Stewardship and Science, NPS
Paul Souza, Field Supervisor, South Florida Ecological Services Office, U.S. Fish and Wildlife Service
Tom Strickland, Assistant Secretary, Fish and Wildlife and Parks, Department of the Interior (DOI)
Don Jodrey, Office of the Assistant Secretary for Fish and Wildlife and Parks, DOI
Courtney Shea, Office of the Solicitor, DOI
Jess Weaver, Regional Executive, U.S. Geological Survey
Miles Croom, Asst. Regional Administrator, National Marine Fisheries Service
Greg May, Executive Director, South Florida Ecosystem Restoration Task Force
Colonel Al Pantano, Commander, Jacksonville District Engineer, U.S. Army Corps of Engineers
Paul Kruger, Section Chief, Miami Permitting Section, U.S. Army Corps of Engineers
Michael Sole, Secretary, Florida Department of Environmental Protection
Carol Wehle, Executive Director, South Florida Water Management District
Carlos Espinosa, Director, Miami-Dade County Department of Environmental Resources Management
Marc LaFerrier, Director, Miami-Dade County Department of Planning and Zoning
Colley Billie, Chairman, Miccosukee Tribe of Indians of Florida
Mitchell Cypress, Chairman, Seminole Tribe of Florida
Eric Silagy, Vice President, Florida Power and Light Company FPL
Barbara Linkiewicz, Director, Environmental Licensing, FPL
Florette Braun, Licensing Manager, FPL
Matt Raffenberg, Licensing Manager, FPL
Steven D. Scroggs, Senior Director for Project Development, FPL

Attachment 1

A. Key Federal Laws and Policies Governing the Protection of National Parks

National Environmental Policy Act, 1969, as Amended
Section 102(2)(c) of this act requires that an environmental analysis be prepared for proposed federal actions that may significantly affect the quality of the human environment or are major or controversial federal actions. NEPA is implemented through regulations of the Council on Environmental Quality (CEQ) (40 CFR 1500-1508).

National Parks Omnibus Management Act of 1998
This act (16 USC 5901, et seq.) underscores NEPA in that both are fundamental to NPS park management decisions. Both acts provide direction for articulating and connecting the ultimate resource management decision to the analysis of impacts, using appropriate technical and scientific information. Both also recognize that such data may not be readily available and provide options for resource impact analysis in this case.

National Historic Preservation Act of 1966, as Amended
Section 106 of this act requires federal agencies to consider the effects of their undertakings on properties listed or potentially eligible for listing on the National Register of Historic Places. All actions affecting the parks' cultural resources must comply with this legislation.

Clean Water Act
The Federal Pollution Control and Prevention Act of 1972, commonly known as the Clean Water Act, is the primary federal law in the United States governing water pollution. The purpose of the act is to make our nation's waters "fishable and swimmable" by 1983 by eliminating releases of toxic substances, controlling wastewater and storm water pollution of waterways, and instituting water quality standards and associated permitting systems. The principal body of law currently in effect is based on the Federal Water Pollution Control Amendments of 1972, which significantly expanded and strengthened earlier legislation. Major amendments were made to the Clean Water Act of 1977 enacted by the 95th United States Congress and the Water Quality Act of 1987 enacted by the 100th United States Congress.

Endangered Species Act
The Endangered Species Act provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The U.S. Fish and Wildlife Service of the Department of the Interior maintain a worldwide list which includes endangered species of animals and plants. Species include birds, insects, fish, reptiles, mammals, crustaceans, flowers, grasses, and trees. The law requires federal agencies, in consultation with the U.S. Fish and Wildlife Service and the U.S. National Oceanic and Atmospheric Administration Fisheries Service, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. The law also prohibits any action that causes a "taking" of any listed species of endangered

fish or wildlife. This EA addresses requirements of the act by incorporating analyses and impact findings for special-status species that could potentially be affected by the project.

Water Resources Development Act of 2007, as Amended

The Water Resources Development Act describes authorizations specific to the Comprehensive Everglades Restoration Plan (Title VI, Section 601) and the restoration of the Everglades and South Florida ecosystem (Title II, Section 208).

Executive Order 11990 - Protection of Wetlands

This Executive Order directs federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.

B. Issues/Concerns Regarding Power Plant and Non-Transmission Line Facilities

Radial collector wells (RCWs)

1. Given the sensitive designation of the adjacent surface water body, Biscayne National Park, a horizontal pilot test, including a tracer study, should be considered as a critical design feature and would be more representative of actual full-scale RCW operation than a limited scope vertical pump test.

2. Drilling through karst limestone can cause a bay bottom collapse or a cavity could be encountered that would be significantly closer to the surface than anticipated. A structural collapse due to macro-porosity features of the Biscayne Aquifer (i.e., dual porosity) or drilling through existing touching-vug preferential flow zones or large karst features would alter the potential velocity of flow through the RCW. Flow in this case would be substantially higher than anticipated. These types of macro-karst features have been found in drilling the wells for the Units 3 & 4 Uprate project, and should be reflected in the groundwater model.

Groundwater modeling deficiencies

1. The groundwater model (FSAR Section 2.4-12 Appendix 2CC) utilizes a constant density groundwater model with a reference value of seawater. Average salinity values are not appropriate since Biscayne Bay is an estuarine environment with seasonal salinity variability, which is not equivalent to an ocean salinity pattern. In addition, shallow groundwater salinity observed during the 2009 pump test in MW-1SS (20 avg psu) is not representative of seawater. Also, the groundwater in the vicinity of the Industrial Waste Facility exhibits hypersaline concentrations (68 avg psu). A groundwater salinity range of 48 psu on average is not indicative of a constant density groundwater profile. The constant density assumption cannot adequately determine the effects of the hypersaline plume eastern migration and bay salinity impacts due to the operation of the RCWs and dewatering activities.

2. A coupled surface water and groundwater hydrologic model, including a separate solute transport module, is necessary to fully evaluate all the associated impacts to Biscayne Bay.

3. The model input parameters (e.g., hydraulic conductivity, boundary inflow values, etc.) should be based on site specific conditions and data, when available, and be consistent with the calibrated results. Please note that the model calibration results in Table 2CC-205 of the COL, FSAR, Part 2, do not correspond to the calibration results provided in the State of Florida SCA. This discrepancy between the two applications should be rectified. Furthermore, the hydraulic conductivities listed in Table 2CC-205 for the different stratigraphic units of the aquifer do not appear to correspond to site-specific hydraulic conductivity values obtained from on-site pump tests nor published values. This flaw seriously affects the results and validity of the groundwater model.

4. The margin of error associated with the groundwater model simulation results should be provided. This information is necessary to ascertain the value of the model and how realistic the model output is.

5. Seasonal variability (i.e., rainfall, water levels, surface water flow, salinity, etc.) is inherent to South Florida and cannot be sufficiently reflected in a steady state model.

6. There are significant temporal differences between the cooling canals, Biscayne Aquifer, and the bay that will affect the water source pathway for the RCWs, which cannot be evaluated with a constant density, steady state model.

7. An equivalent porous media value was utilized for the groundwater model, which does not reflect the Biscayne Aquifer. The Biscayne Aquifer is defined as a heterogeneous aquifer with documented dual porosity and preferential flow pathways.

8. Should a preferential subsurface flow pathway be encountered through an RCW lateral, the water source intake will originate from the flow pathway of least resistance. This scenario should be accounted for in the groundwater modeling.
9. The new hypersaline plume delineation and hydrogeologic data collected as part of the well drilling and logging for the Uprate Project for Turkey Point Units 3 & 4 should be incorporated in the groundwater modeling and planning for evaluation of the effects of the RCWs.

10. The groundwater model should reflect implementation of CERP project features.

Biscayne Aquifer

1. The Biscayne Aquifer is an unconfined surficial aquifer that has a fragile karst macroporosity substrate. A comprehensive geological survey should be performed for the proposed locations of the RCWs (Turkey Point peninsula) to identify voids or cavities in the aquifer substrate. Soil borings that were performed as part of the 2009 pump test are not aerially sufficient to represent a known dual porosity karst limestone aquifer.

2. Contingency plans should be established should a karst fracture occur during the construction or operation of the RCWs.

3. Even based on the rather dubious groundwater modeling provided, FPL is proposing to remove 8% of the total withdrawal from the aquifer, which equals approximately 10 million gallons of groundwater daily. Pursuant to the Resolution (No. Z-56-07, conditions 4 & 5) of the Board of County Commissioners of Miami-Dade County, FPL shall not apply for any water withdrawals from the Biscayne Aquifer as a source of cooling water for the proposed facilities, and shall use reclaimed or reuse water to the maximum extent possible. This consumptive water use conflict must be resolved.

4. Table 4.6-1 states that occasional surface water overflow/run-off from deep well injection wells would be directed to the Cooling Canal System. This would cause infiltration of wastewater constituents, including EPOCs, to the Biscayne Aquifer and subsequently to Biscayne Bay via subsurface flow. Wastewater migration to the bay would negatively impact the flora and fauna of the nearshore habitat due to the release of nutrient and microconstituents (i.e., EPOCs), which requires further consideration.

5. The effects of dewatering on the Biscayne Aquifer (e.g., hypersalinity plume migration, salt water intrusion, etc.) during plant construction were based on the dubious current model, and warrants further evaluation.

Benthic community disturbances

1. The operation of the RCWs could potentially change sediment oxidation-reduction potential in seagrass beds and benthic communities, which should be considered an ecological impact.
2. The net reduction in positive groundwater flux to the benthic ecosystem will occur due to the operation of the RCW. Groundwater is an important source of freshwater for benthic communities and any reduction should evaluated for its associated impact.

3. Although the radial collector wells will be physically placed in the underlying aquifer and the laterals are not expected to extend into park boundaries, the primary source intake water is Biscayne Bay. Based on the design feature of horizontal production wells and preliminary hydrologic modeling, the cone of influence includes Biscayne National Park waters. The application design is for up to 124 million gallons per day to be withdrawn from these surface waters. The groundwater modeling which predicts minimal impacts to the benthic organisms of the bay appears to consider the subsurface as a singular uniform, non-karst feature, which is not accurate. The groundwater modeling does not provide the degree of detail needed to determine impacts to the benthic organisms of the bay and Biscayne National Park, when the RCW system is operated.

Underground Injection Wells

1. The COL application proposes the discharge of cooling tower blowdown from Units 6&7 to underground injection wells within the Boulder Zone of the Lower Floridan Aquifer. FPL makes the assumption that a Class I Underground Injection Control permit will be issued by FDEP. However, a FDEP permit has not been acquired for this action, to date.

   There is an EPA mandated groundwater investigation currently on-going concerning the upward migration of wastewater discharged into the Boulder Zone to the Upper and Lower Floridan Aquifer at the Miami-Dade County South District Wastewater Treatment Plant approximately nine miles

north of Turkey Point. In 1994, the Environmental Protection Agency (EPA) issued a warning to Miami-Dade County for violating the Safe Drinking Water Act because of sewage migration into a State of Florida designated source of drinking water, the Upper Floridan Aquifer. In 1997, the EPA entered into a consent order with Miami-Dade County requiring hydrologic studies to determine the cause of contaminant transport from the Boulder Zone. These studies confirmed sewage migration into the Upper Floridan. In 2004, the FDEP required Miami-Dade County to conduct a groundwater study evaluating the impacts associated with the migration of wastewater to the Upper Floridan. This study has been performed by United States Geological Survey (USGS) and is currently pending imminent submittal to Miami-Dade County Department of Environmental Resources Management (DERM) and FDEP.

Current hydrologic knowledge regarding underground injection into the Boulder Zone suggests that the porosity and permeability in the Floridan can vary greatly depending on the location and formation. A history of dual zone groundwater monitoring results from the Miami-Dade County South District Wastewater Treatment Plant shows evidence of wastewater contaminant migration into the Upper Floridan. Upon the submittal of the pending USGS groundwater underground injection investigation for this region, it may be soon proven that the geology of the injection zone is incapable of confining the volume of injected sewage.

These same concerns seem applicable to this project and the very large amount of discharged fluids intended to be injected. The Upper Floridan supplies make-up cooling water for existing Unit 5. Based on the above discussion, a similar breach of the Boulder Zone is possible and would compromise the water supply quality of Unit 5.

Hence, underground injection is not a proven, reliable method of wastewater disposal in southern Miami-Dade County, most likely due to differences in regional geology. Therefore, FPL should investigate alternative methods of cooling water blowdown and wastewater disposal. What is FPL's contingency should FDEP not approve a Class I underground injection control permit for Units 6&7 operation? A feasibility analysis of treating wastewater for the benefit of the Biscayne Bay Coastal Wetlands/CERP project should be performed.

Flooding

1. The flooding analyses should account for the implementation of all CERP project features, which may enhance flooding in the vicinity of the Turkey Point facility.

2. A thorough review of Hurricane Andrew site specific data should be performed, including storm tide level.

3. Hurricane Andrew data were not reported in the Peak Water Levels history, Tables 2.4.2, Part 2, FSAR. Data for Hurricane Andrew should be included in this analysis.

4. Rapid groundwater table seepage during storm events is inherent to this region due to high infiltration rates. The flooding analyses should be verified and be based on local hydrogeology.

Emerging pollutants of concern (EPOCs)

1. Pretreatment of the wastewater reuse source water to include treatment of EPOCs should be evaluated, considering Biscayne National Park's status as an Outstanding Florida Water Body with a no degradation standard under Florida Statutes.

2. The atmospheric deposition from the cooling towers is projected to extend into the surface waters of Biscayne National Park. Atmospheric deposition rates and for EPOCs from the proposed cooling towers should be quantified and include incremental projections over the life span of Units 6&7.

3. If the water reservoir for Units 6&7 is unlined, the seepage of wastewater constituents, including EPOCs, will occur to the Biscayne Aquifer and cause uptake to adjacent wetlands; migration of these contaminants will be transported subsequently to the bay. The ecological impacts associated with an unlined reservoir should be evaluated.

Potential impacts to other key resources in Biscayne National Park

1. Potential viewshed impacts may increase over current levels in Biscayne National Park from the construction of Units 6&7 and non-transmission facilities. This will impact visitor use and experience within the park and should be evaluated.

2. Potential soundscape impacts may increase over current levels in Biscayne National Park from construction, operation and security (additional overflights by military jets). These impacts should be assessed and quantified.

3. Seasonal patterns of behavior of threatened and endangered species occupying Biscayne National Park, such as West Indian Manatees and American crocodiles, may occur if water salinity, temperature or quality changes as a result of construction or operation of Units 6&7 and non-transmission facilities. These impacts should be evaluated.

4. FPL should clarify how they would transport construction supplies and equipment to the worksite, including via marine pathways, and evaluate any additional impacts on the marine environment.

C Issues /Concerns Regarding Transmission Facilities

Proposed Transmission Facilities

1. FPL proposes to construct two 500 kV and one 230 kV transmission lines in either the West Preferred Corridor or West Secondary Corridor. While design details are not fully specified in the Combined License Application (COLA) or Site Certification Application (SCA), each poled 500 kV transmission power line structure is estimated to be approximately 135-150 ft high, and suspend three conductor bundles, two groundwires, and contain up to eight supporting guyed wires each. Each poled 230kV power transmission line is estimated to be approximately 80-105 ft high, and suspend three conductor bundles, one ground wire, and up to two supporting guyed wires. The material composition of the poled structures is not fully defined in the COLA/SCA but is anticipated to be

composed of concrete or a combination of concrete and steel. The poled structures will be configured such that there are two 500 kV transmission power lines (i.e., two poled structures) and one 230kV (i.e., one poled structure) aligned side by side approximately every 1,000 ft down the length of the either Corridor. An additional solitary 230kV poled structure will be stationed every 500 ft. The proposed power line corridor is approximately 330 ft wide and may contain an approximate 18 ft wide access road along the entire length of the corridor (near the western portion of the corridor).

2. In the West Preferred Corridor, additional access pads (approximately 79-170 ft long) are proposed east of the power linepoled structures that would provide access from the structure pads to the existing L-31 North Levee Road (Figures 5A-5B). Additional wetland filling would be required to construct the proposed pads beneath the power line poled structures. Construction of the access roads/pad would require filling of more than 100 acres of wetlands within the West Preferred Corridor (that is currently within Everglades National Park) per the COLA/SCA. A perpetual 90 ft vegetation easement is proposed to extend from the westernmost portion of the West Preferred Corridor into ENP to allow FPL to manage non-native vegetation.

Threatened and Endangered Species

1. The proposed corridors are located adjacent to multiple wading bird colonies containing federal and state-listed species including the wood stork (*Mycteria americana*), snowy egret (*Egretta thula*), little blue heron (*Egretta caerulea*), tricolored heron (*Egretta tricolor*), and white ibis (*Eudocimus albus*). More than 30 other avian species of concern (federal and/or state listed) also are known to, or have the potential to, occur in the corridors and adjacent habitats.

2. The endangered Everglade snail kite (*Rostrhamus sociabilis plumbeus*) forages and nests directly within the footprint of the proposed West Preferred Corridor.

3. Listed avian species are at risk of injury/mortality from collisions and electrocutions with the proposed power lines. Both corridors cross known flight pathways of the endangered wood stork and the Everglade snail kite. The West Preferred Corridor crosses flight pathways of other protected migratory species, such as waterfowl, that use the Atlantic Flyway during seasonal migrations.

4. Based on their sheer abundance, including juveniles within the area, proximity to the power line, frequent flights across the West Preferred Corridor, and morphology, listed wading birds meet many of the risk factors known to affect avian mortality rates caused by transmission power lines.

5. The endangered wood stork may be at highest risk of injury/mortality from the proposed powerlines of all avian species due to its limited population size, body form, nocturnal foraging behavior, flight patterns, and abundance of juveniles in the area.

6. Implementation of the proposed transmission lines would result in filling of over 100 acres of habitat within Everglades National Park that includes wood stork and Everglade snail kite foraging habitat as well as Everglade snail kite nesting habitat.

7. Florida panthers have been documented in and around both corridors within ENP. Suitable panther habitat within the park would be reduced by over 100 acres as wetlands are filled for tower pads and access roads. Potential effects to panthers would include temporary disturbance during construction.

Wildlife

1. More than 200 avian species are at risk of increased injury/mortality resulting from potential electrocutions and collisions with the proposed power lines. Species known to produce streamers, such as raptors, vultures, and herons, are at risk of injury/mortality from electrocution with the proposed power lines.

2. Besides the previously mentioned listed and special status species, other non-listed avian species that nest within colonies adjacent to the proposed corridors include great egrets (*Ardea alba*), great blue herons (*Ardea herodias*), cattle egrets (*Bubulcus ibis*), anhingas (*Anhinga anhinga*), black-crowned night herons (*Nycticorax nycticorax*), and yellow-crowned night herons (*Nyctanassa violacea*).

3. More than 40 bird species that are not threatened, endangered, or special status species are anticipated to nest within the proposed corridors or adjacent habitats.

4. Implementation of the proposed transmission lines would result in filling of over 100 acres of habitat used by more than 200 avian species.

Vegetation

1. Vegetation in the ENP portion of both transmission line corridors identified by FPL consists primarily of high quality, long and short hydroperiod native marsh and prairie communities. Direct impacts of the construction and maintenance of powerline infrastructure on the natural abundance and distribution of these native plant communities need to be evaluated.

2. Limited information on the presence of state listed threatened and endangered plant species exists for either corridor identified by FPL. Nonetheless, preliminary surveys of the Western Preferred Corridor resulted in the identification of at least one state listed endangered plant species within the boundary of the corridor. Additional survey work is needed and the results of that survey work should be used to evaluate impacts on threatened and endangered plant species in both corridors.

3. The proposed exotic vegetation management easement associated with the Western Preferred Corridor will result in the modification and/or removal of native plant species by mechanical or chemical means within the boundaries of ENP. The impacts of these actions on individual species and native plant community composition need to be considered in this evaluation.

4. Soil disturbance and modification of natural elevations in either corridor identified by FPL has the potential to introduce new invasive plant species or exacerbate existing invasive plant species populations. These impacts need to be evaluated.

Hydrology and Wetlands

1. Construction of infrastructure associated with transmission lines and access roads in either corridor would result in the permanent filling of over 100 acres of wetlands. Direct and indirect effects of filling need to be included in the evaluation of impacts resulting from this project. In particular, installation of additional access roads in either corridor would create new barriers to flow in a critical portion of northeast Shark River Slough. This area is a focal point of Modified Water Deliveries (MWD) and CERP restoration projects designed to restore natural flow to that area. In addition, modification of the existing L-31N levee in the western preferred corridor to provide access to proposed transmission lines would create an impediment to the natural north to south flow of water in the area. Access roads, even if culverted, will result in reduction of surface water flow critical to maintenance of ENP wetlands. This is in direct conflict with one of the critical components of hydrological restoration under CERP. The impacts of this flow reduction on park wetland resources and on MWD and CERP restoration projects that are underway or planned needs to be evaluated.

2. Construction, maintenance and vegetation management in either transmission line corridor identified by FPL would result in impacts to ENP water quality through soil disturbance and/or the introduction of chemical pesticides. These impacts need to be evaluated.

Wilderness

1. The NPS is conducting a wilderness study for the 109,500 acre ENP Expansion Area. This study evaluates lands for possible recommendation to Congress for inclusion in the national wilderness preservation system as required by the Wilderness Act of 1964. Construction of transmission structures and access roads in the West Secondary Corridor would result in 320 acres of lands not being eligible for wilderness designation. FPL's West Preferred Corridor runs through lands within the Expansion Area that may also be eligible for wilderness designation. The eligibility of lands adjacent to either corridor would be adversely affected by introducing visible man-made structures (such as transmission facilities), and introducing noise (from construction/operation/maintenance activities) that would adversely affect opportunities for solitude.

Visitor Use and Experience

1. Construction of transmission towers and access roads in either corridor could impact visitor experiences. Heavy equipment including dump trucks, bulldozers, excavators and cranes would be used for construction of transmission lines. Qualities of the existing visitor experience such as primitiveness and solitude may be impacted.

2. Natural vistas provide park visitors with an immediate and lasting sensory experience that strongly conveys the character of a national park. The proposed transmission lines, towers and associated roads could adversely affect the visitor's appreciation of the visual viewshed over large areas. The transmission lines and structures would be visible within the park for many miles away. Because of the flat topography and the broad unobstructed vistas, visitors on the Tamiami Trail, and to a lesser extent, visitors to Shark Valley and the Chekika areas, as well as visitors on airboat tours, would be able to see the transmission lines and structures. The transmission facilities would be an intrusion on the natural scenery of the Everglades and detract from the visitors' ability to appreciate the park. For visitors near the L 31-N canal, the towers and transmission lines would dominate the viewshed. These

impacts would be permanent. A separate viewshed analysis should be prepared for scenic and visual impacts on the visitor experience.

3. Similar impacts to viewsheds could occur elsewhere in the Western Transmission Corridor in Water Conservation Area 3B, north of the park, the Southern Glades Management Area, east of the park and in the Model Lands between U.S. 1 and the Turkey Point site.

Cultural Resources

1. Archeological surveys of the entire West Transmission Corridor will be needed. An archeological survey conducted in 2009 in FPL's West Preferred Corridor within ENP found no evidence of pre-historic humans.

Park Operations and Management

1. Construction and operation of transmission lines, pads and access roads in either corridor within ENP is likely to adversely affect park operations such as fire management, exotic vegetation management and law enforcement.

2. Specific adverse effects to fire management would include increased fire activity due to the inherent threat of uncontrolled ignitions from transmission lines, limited accessibility to areas to engage in fire suppression activities due to gates and security issues on FPL land, and an increase in staffing levels based on fire danger rating. Transmission lines in either corridor would limit the park's ability to use aircraft for fire suppression in the area, especially along the eastern boundary.

3. Construction of roads and tower pads would likely result in soil disturbance and the colonization of exotic vegetation like Brazilian pepper if unchecked. The potential land exchange property is frequently used for exotic vegetation management and monitoring of wetlands in the project area. NPS staff would be required to monitor the impacts of FPL's exotic vegetation management practices on native vegetation in the vegetation management easement granted to FPL and adjacent natural vegetative communities within the park.

4. Inappropriate use of park lands could become an issue. Construction of access roads would introduce new areas for unauthorized all terrain vehicle use, dumping and other unforeseen uses which would result in adverse impacts to park law enforcement operations and sensitive natural resources.

Air Quality

1. Construction and maintenance activities would impact air quality.

Soundscapes

1. Short-term noise impacts would be expected from construction and maintenance activities and transmission line monitoring overflights. A corona effect from the proposed new lines (audible noise) may increase in the long-term.

Socioeconomics

1. Should the NPS decided to acquire FPL's property within ENP and not exchange lands, it is assumed that FPL would not abandon its objective to obtain a western route from Turkey Point to the Levee substation. FPL would, therefore, likely resume investigation of alternate route(s). These new route(s) could affect the local socioeconomic environment including people, property values, employment, and construction-related expenditures in Miami-Dade County. These impacts should be evaluated in the EIS.