United States Nuclear Regulatory Commission Official Hearing Exhibit
In the Matter of: FLORIDA POWER & LIGHT CO.
(Turkey Point Nuclear Generating Units 6 and 7)
Commission Mandatory Hearing
Docket #: 05200040 | 05200041
Exhibit #: NRC-004-MA-CM01 Identified: 12/12/2017
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Rejected: Stricken:
Other:

U.S. NUCLEAR REGULATORY COMMISSION

DOCKET NOS. 52-040 AND 52-041

COMBINED LICENSE APPLICATION FOR

TURKEY POINT NUCLEAR PLANT

UNITS 6 AND 7

DRAFT SUMMARY RECORD OF DECISION

BACKGROUND

In a June 30, 2009, letter (Agencywide Documents Access and Management System Accession No. ML091830589), Florida Power and Light Company (FPL or the applicant), submitted an application to the U.S. Nuclear Regulatory Commission (NRC or the Commission) for combined licenses (COL) for two Westinghouse Electric Company (WEC) AP1000 pressurized water reactors, located on the Turkey Point site in the unincorporated southeast Miami-Dade County, Florida, east of Florida City and the City of Homestead and bordered by Biscayne Bay to the east. The units would be constructed on an approximately 218-acre area south of the existing Turkey Point Units 3 and 4. FPL will be the licensed owner and operator of Turkey Points Units 6 and 7. The new units will be capable of providing an additional net output of 2184 megawatts of electricity (MW(e)) as a baseload source.

Section 102 of the National Environmental Policy Act of 1969, as amended (NEPA), directs that an environmental impact statement (EIS) be prepared for major Federal actions significantly affecting the quality of the human environment. The NRC's regulations in Title 10 of the *Code of Federal Regulations* (CFR) Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," were developed to implement the agency's responsibilities under Section 102 of NEPA. Pursuant to 10 CFR 51.20(b)(2), the NRC defines issuance of a COL as an action for which the agency will prepare an EIS.

By letter dated September 4, 2009, the NRC notified FPL that its application was accepted for docketing. Docket Numbers 52-040 and 52-041 were established for the proposed Units 6 and 7, respectively. After acceptance of FPL's COL application, the NRC began the environmental review process by publishing in the *Federal Register* (FR) on June 15, 2010, a Notice of Intent to prepare an EIS and conduct scoping activities (75 FR 33851), in compliance with requirements set forth in 10 CFR Part 51.

FPL also needed to obtain permits from the U.S. Army Corps of Engineers (USACE) in order to perform certain site preparation activities associated with building the proposed facility.[1] To enable each agency to most efficiently meet its NEPA responsibilities for its license or permit decision, the NRC agreed to serve as the lead agency for preparing the EIS, with the USACE as a cooperating agency. Additionally, the National Park Service (NPS) participated in the environmental review as a cooperating agency under a Memorandum of Understanding, by providing special expertise for the areas in and around the adjacent national parks (Biscayne

[1] These site preparation activities fall within the USACE's jurisdiction under Section 10 of the Rivers and Harbors Act (RHA) of 1899 and Section 404 of the Clean Water Act (CWA) of 1977, as amended.

and Everglades National Parks). Therefore, all impact determinations made in the EIS should not be attributed to NPS, but only to the NRC and USACE (also referred to as the review team). The NPS's participation in connection with the EIS does not imply NPS concurrence.

The NRC staff held two scoping meetings on July 15, 2010, in Homestead, Florida, to discuss the environmental scoping process and to give members of the public an opportunity to provide comments on environmental issues that the NRC should consider during its review of the application (ADAMS Accession No. ML102080607). The staff reviewed the oral and written comments received during the scoping process and contacted Federal, State, Tribal, regional and local agencies to solicit comments. A Scoping Summary Report was issued on December 1, 2010 (ADAMS Accession No. ML103130609).

The NRC and USACE prepared and published a draft EIS in February 2015, and on March 6, 2015, a 75-day comment period began to allow members of the public and agencies to comment on the results of the environmental review (80 FR 12043). As a result of requests from members of the public, a Tribal government, and Federal agencies, the comment period was reopened from May 28, 2015, until July 17, 2015, in order to allow more time for public comment (80 FR 30501). On April 22 and 23, 2015, the NRC conducted a total of three public meetings in Miami and Homestead, Florida, to present the results of the environmental review and accept public comments. On October 28, 2016, the NRC issued the "Final Environmental Impact Statement for Combined Licenses (COLs) for Turkey Point Nuclear Plant Units 6 and 7" (NUREG-2176), Volumes 1, 2, 3 and 4 (final EIS), (ADAMS Accession Nos. ML16300A104, ML16300A137, ML16301A018, and ML16300A312, respectively). All comments related to the environmental review received during the comment period are included in Appendix E or Volume 4 of the final EIS, together with a supplement to the final EIS, which was published December 2, 2016 (ADAMS Accession No. ML16337A147).

Pursuant to 10 CFR 51.102, "Requirement to provide a record of decision; preparation," and 51.103(a)(1)-(4), "Record of decision—general," the NRC staff has prepared this Summary Record of Decision (ROD) to accompany its action on the combined license application. This Summary ROD incorporates by reference materials contained in the final EIS. See 10 CFR 51.103(c).

DECISION

[If the Commission's mandatory hearing decision authorizes the NRC staff to issue the license, this Decision section will state:]

The NRC makes the decision to [grant or deny] the COL application(s) based on whether the applicant has met all applicable requirements, including the NRC's safety and environmental regulations. The NRC's safety review of the application is documented in the final safety evaluation report (FSER) issued on November 14, 2016 (ADAMS Accession No. ML16277A469).

The final EIS presents the staff's environmental review of the application. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering reasonable available alternatives, the NRC concluded that issuance of the COLs subject to the conditions for protection of the environment set forth in the licenses is in accordance with NEPA and the NRC's implementing regulations in Subpart A of 10 CFR Part 51, and that all applicable requirements have been satisfied. The final EIS as well as the Commission's Order dated [date] document these conclusions.

Accordingly, the NRC issued COLs NPF-[###] on [date], authorizing the construction and operation of Turkey Point Units 6 and 7 at the Turkey Point site in Miami-Dade County, Florida. The licenses are effective as of [date], and extend for 40 years from the date that the Commission finds that the acceptance criteria in the combined license are met in accordance with 10 CFR 52.103(g). These combined licenses also include the authorizations required for the licensee to receive, possess, and use source, byproduct, and special nuclear material in connection with the construction and operation of Turkey Point Units 6 and 7, in accordance with Commission regulations in 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material"; Part 40, "Domestic Licensing of Source Material"; and Part 70, "Domestic Licensing of Special Nuclear Material," and the general license authorized under 10 CFR Part 72, Subpart K, "General License for Storage of Spent Fuel at Power Reactor Sites."

AGENCIES' ROLES AND RESPONSIBILITES:

The final EIS includes information on a broad range of issues that may be regulated by other Federal, State, or local authorities. As documented in the final EIS, the COL applicant must obtain and maintain permits from other Federal, State, and local authorities in order to construct and operate Turkey Point Units 6 and 7.

Role of the NRC

The NRC was the lead agency for the environmental review of the Turkey Point Units 6 and 7 COL application, including the development of a final EIS. In the final EIS, the NRC evaluated the impacts of building and operating two AP1000s at the Turkey Point site. The NRC contacted Federal, State, Tribal, regional, and local agencies to solicit comments on the draft EIS. In addition to considering the environmental effects of the proposed action, NRC considered alternatives to the proposed action, including the no-action alternative, alternative energy sources, the building and operation of new reactors at alternative sites, and alternative technologies. The NRC also documented applicable requirements and necessary permits of other Federal, State, Tribal, and local agencies in considering the environmental monitoring and mitigation that FPL may implement. The NRC ensured that the NEPA process was properly conducted and completed before recommending granting of the COLs.

Role of USACE

The USACE participated with the NRC in the preparation of the final EIS as a cooperating agency and participated collaboratively on the review team. As part of the review team, the USACE was included in all aspects of the environmental review, including scoping, public meetings, and public comment resolution.

USACE can issue permits, after notice and opportunity for public hearings, for the discharge of dredged or fill material into the navigable waters at specified disposal sites. With respect to the Turkey Point site, the USACE's action concerned whether to issue a permit pursuant to the requirements in Section 404 of the CWA and Section 10 of the Rivers and Harbors Act of 1899. The requested permit would authorize impacts on waters of the U.S., including wetlands, for the building of Turkey Point Units 6 and 7, and various associated, integral project components, including electrical transmission lines and associated structures, access roads, a barge slip, and a new reclaimed water treatment plant. Therefore, the USACE conducted an independent review and assessment in the preparation of the final EIS to provide the necessary environmental information required to meet its NEPA obligations, to make findings of compliance with the

guidelines for Section 404(b)(1) of the Clean Water Act, and to meet the review criteria for the Department of the Army (DA) permit, including its Public Interest Review.

PURPOSE AND NEED

As identified in Section 1.3, "Purpose and Need for the Proposed Actions" of the final EIS, the purpose of this proposed action is NRC authorization to construct and operate two AP1000 units at the Turkey Point site that will provide additional baseload electrical generation capacity for use in the FPL service territory.

PROPOSED FEDERAL ACTION

The proposed NRC Federal action is issuance, under the provisions of 10 CFR Part 52, of two COLs authorizing the construction and operation of two AP1000 units at the Turkey Point site. The location for the proposed Turkey Point Units 6 and 7 is on the Turkey Point site in southeastern Miami-Dade County, Florida.

The EIS provides the NRC staff's analyses of the environmental impacts that could result from building and operating the proposed units at the Turkey Point site or at any of the four alternative sites. The NRC staff analyzed these impacts to determine if the proposed site is suitable for the units and whether any of the alternative sites is considered to be environmentally preferable or obviously superior to the proposed site. In addition, the NRC staff assessed mitigation measures available for reducing or avoiding adverse environmental effects.

Environmental impacts that may arise from the building and operation of Turkey Point Units 6 and 7 were examined for the following resource areas: land use; surface water and groundwater hydrology; terrestrial and aquatic ecology; socioeconomics; environmental justice; historic and cultural resources; meteorology and air quality; geology; public and occupational health; radiological health; noise; transportation; and transmission systems. These resource areas were also considered within a defined region of influence with other developments or activities that affect the resources cumulatively.

NRC EVALUATION OF THE PROPOSED ACTION

Section 102(2)(C)(iii) of NEPA states that EISs are to include a detailed statement analyzing alternatives to the proposed action. Accordingly, the NRC and USACE evaluated the proposed action and numerous alternatives to the proposed action in order to make independent determinations according to each agency's regulatory authority. Evaluation criteria included land use, air quality, water use and quality, ecology, waste management, socioeconomics, human health, historic and cultural resources, and environmental justice. Alternatives were evaluated against the proposed action to determine if any of the alternatives presented were environmentally preferable (or, for alternative sites, obviously superior).

To guide its assessment of the environmental impacts of the proposed action and alternatives, the NRC has established a standard of significance for impacts based on Council on Environmental Quality guidance (40 CFR 1508.27). Table B-1 of 10 CFR Part 51, Subpart A, Appendix B, provides the following definitions of the three significance levels established by the NRC:

> SMALL – Environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource.

MODERATE – Environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.

LARGE – Environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

The final EIS presents the review team's analysis, which considers and weighs the environmental impacts of the proposed action at the Turkey Point site. Impacts from building and operating the facility were considered to be SMALL for most resources areas except Land Use, Ecology, Socioeconomics and Historic and Cultural Resources. Land Use impacts were expected to be MODERATE for construction and operation. Construction and operation impacts to terrestrial ecosystems would be MODERATE while impacts to aquatic ecosystems would be SMALL to MODERATE during construction and SMALL during operation. Socioeconomic impacts to the physical environment, infrastructure, and community services during construction and operation are expected to range from SMALL adverse to MODERATE adverse and MODERATE beneficial. Finally, impacts during construction to Historic and Cultural Resources are expected to be MODERATE but the NRC-authorized construction impact level is SMALL.

Evaluation of Alternatives

Chapter 9, "Environmental Impacts of Alternatives," of the EIS addresses the following four categories of alternatives to the proposed action: (1) the no-action alternative, (2) energy source alternatives, (3) alternative sites, and (4) system design alternatives. As summarized below, none of the potential alternatives is environmentally preferable to the proposed action.

i. No-Action Alternative

The No-Action alternative, discussed in Section 9.1 of the final EIS, refers to a scenario in which the NRC would deny the COLs requested by FPL, which would result in the proposed units not being built. Likewise, the USACE would also take no action or deny the DA Individual Permit request. Upon such a denial by the NRC or USACE, the building and operation of Units 6 and 7 at the Turkey Point site in accordance with 10 CFR Part 52 would not occur and the predicted environmental impacts associated with the project would not occur. If no other facility would be built or strategy implemented to take its place, the electrical capacity to be provided by the proposed project would not become available. If no additional conservation measures were enacted to decrease the amount of electrical capacity that would otherwise be required for power in the region of interest (ROI), the need for power discussed in Chapter 8 would not be met. Therefore, the purpose of and need for this project would not be satisfied if the no-action alternative was chosen and the need for power was not met by other means.

ii. Alternative Energy Sources

The purpose and need for the proposed project identified in Section 1.3 of the final EIS is to provide additional baseload electrical generation capacity for use in the FPL's service territory. Chapter 9 of the final EIS examines the potential environmental impacts associated with alternatives to building and operation of a new baseload nuclear generating facility.

To compare different types of energy plants with the proposed Turkey Point Units 6 and 7, NRC analyzed other power-generation sources, a combination of sources, and power-generation

technologies that are technically reasonable and available. The three primary energy sources for generating baseload electric power in the U.S. are coal, natural gas, and nuclear energy. These alternatives, which would be necessary in order to generate the same baseload power, are discussed in Section 9.2.2 of the final EIS.

For the coal-fired plant alternative, the EIS analyzed building and operation of four pulverized coal (PC) units, each with a net electrical generation capacity of 550 MW(e), which would generate the same baseload power as the Turkey Point Units 6 and 7 units. Air emissions effects would be greater for the PC units than for Turkey Point Units 6 and 7 due to the release of carbon dioxide gas and other air pollutants. Coal combustion generates waste in the form of ash. Disposal of the waste could noticeably affect land use, because of the acreage needed, and could affect groundwater quality. Other environmental effects and cumulative effects would be similar to those described for the proposed Turkey Point nuclear plants.

The review team also considered integrated gasification combined-cycle (IGCC) coal-fired power plants as a baseload-capable technology. IGCC is an emerging technology for generating electricity with coal that combines modern coal gasification technology with combustion-turbine and steam-turbine power generation. This technology is considered to be cleaner than conventional pulverized coal plants because major pollutants can be removed from the gas stream before combustion. Although IGCC has the advantages noted above, the review team concluded that, at present, IGCC is not a reasonable alternative to a 2200 MW(e) nuclear power-generation facility for the following reasons: (1) IGCC plants are more expensive than comparable pulverized coal plants; (2) the system availability of existing IGCC plants has been lower than pulverized coal plants; and (3) refined engineering has indicated that non-carbon emissions and plant efficiency would not be significantly better than supercritical steam electric plants.

For the combined cycle natural gas-fired plant analysis, the EIS analyzed the building and operation of a natural-gas fired plant at the Turkey Point site. The plant would use four combined-cycle combustion turbines with a net capacity of 550 MW(e) per unit. Air emissions are similar to those for a coal-fired plant, but in lower amounts. Building a new underground gas pipeline to the site would result in permanent loss of some ecological and aquatic resources, but the distance to connect to natural-gas distribution systems would be minimal due to an existing transmission line pipeline serving Turkey Point Unit 5. Other environmental and cumulative effects would also be similar to those described for the Turkey Point site.

Oil-fired generation is more expensive than nuclear, natural-gas-fired, or coal-fired generation options. In addition, future increases or broad speculation in oil prices and oil markets are expected to make oil-fired generation increasingly more expensive. The high cost of oil has resulted in a decline in its use for electricity generation. Operation of an oil-fired power plant would have environmental impacts similar to those of a comparably sized coal-fired plant.

Onshore and offshore areas within the FPL service territory are in a wind power Class 2 and Class 3 region, respectively. Areas designated Class 3 or greater are suitable for most wind turbine applications, whereas Class 2 areas are marginal. Therefore, commercial-scale development of wind energy in Florida would have to be sited in offshore locations. Even with modern wind turbine designs, more than 1,000 wind turbines would be required to produce a peak output that matches the 2200 MW(e) of the proposed nuclear units.

A solar-based power plant capable of generating as much baseload power as Turkey Point Units 6 and 7 would require an estimated 6,600 to 17,600 acres (ac) of land as opposed to the

significantly smaller area of land that would be affected for the construction and operation of Turkey Point Units 6 and 7. The NRC staff concluded that neither a wind-energy facility nor a solar facility at the Turkey Point site or elsewhere within FPL's ROI would be a reasonable alternative to a 2,200 MW(e) baseload nuclear power-generation facility. Wind and solar alternatives, and the basis for determining they were not viable alternatives to the proposed action, are discussed in Section 9.2.3 of the final EIS.

The NRC also evaluated alternatives not requiring new generating capacity, as well as other alternative energy sources. Alternatives not requiring new generating capacity that the NRC considered, but determined not to be viable alternatives, were: purchasing power from other electricity suppliers, reactivating retired power plants, extending the life of existing power plants, and implementing conservation or demand-side management programs. Each alternative not requiring new generating capacity was determined not to be a viable alternative, and the basis for this determination is provided in Section 9.2.1 of the final EIS. Other alternative energy sources that the NRC considered, but determined not to be viable alternatives, were: hydropower, geothermal energy, municipal solid waste, other biomass-derived fuels, fuel cells, and wood waste. Alternative energy sources that were eliminated from detailed study and the basis for removal are provided in Section 9.2.3 of the final EIS.

The NRC also considered whether a combination of alternatives might be a viable alternative to the proposed action. The review team assessed the environmental impacts of a combination of a 1915 MW(e) natural-gas-fired, combined-cycle generating units at the Turkey Point site, and the following contributions from within FPL's ROI: 201 MW(e) from conservation and DSM programs beyond what is currently planned, 330 MW(e) of solar power, and 75 MW(e) of biomass sources including solid waste. This combination was anticipated to have impacts similar to those of the natural-gas-only alternative discussed in Section 9.2.2.2. This combination of energy alternatives and the basis for determining it was not environmentally preferable to the proposed action are discussed in Section 9.2.4 of the final EIS.

Therefore, the review team concluded that none of the alternative energy options or the combination of the alternative energy options would be both consistent with the purpose and need for the proposed action and environmentally preferable to the proposed action.

iii. Alternative Sites

The NRC independently evaluated FPL's process for identifying the proposed and alternative sites, which was based on guidance in the NRC's NUREG-1555, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants: Environmental Standard Review Plan"; NRC Regulatory Guide 4.7, "General Site Suitability Criteria for Nuclear Power Stations"; and the Electric Power Research Institute's Siting Guide. NRC's site-selection process guidance calls for identification of an ROI, followed by successive screening to identify candidate areas, potential sites, candidate sites, and the proposed site. The ROI is the geographic area considered by the applicant in searching for candidate areas and potential sites for a new nuclear power plant. The ROI is typically the State in which the proposed site is located or the relevant service area for the proposed plant.

The staff evaluated FPL's methodology for selecting its ROI, candidate areas, and evaluation of potential sites, candidate sites, and alternative sites. For its ROI, FPL chose land area included within (or immediately adjacent to) its service territory, which extends north to south across the State of Florida, which is consistent with guidance in NUREG-1555. The staff also concluded

that the method used to identify candidate areas, potential sites, candidate sites, and alternative sites was reasonable, logical, and consistent with applicable NRC guidance.

Candidate areas for siting of Turkey Point Units 6 and 7 were chosen after applying exclusionary criteria related to ecologically sensitive features, population density, water availability, dedicated land use, and proximity to high-voltage transmission and load centers. Within those candidate areas, FPL identified more than 20 potential sites for further screening. Ultimately, five candidate sites were chosen for additional site suitability analyses, which resulted in the Turkey Point site being chosen as the preferred site. The remaining 4 candidate sites examined are listed as alternative sites in Section 9.3 of the final EIS:

- Glades site, located in southeastern Glades County, Florida;
- Martin site, located in western Martin County, Florida;
- Okeechobee 2 site, located in southwestern Okeechobee County, Florida; and
- St Lucie site, located on Hutchinson Island in St. Lucie County, Florida.

Although there are differences between the cumulative environmental impacts of building and operating nuclear generating units at the proposed Turkey Point site and the alternative sites, the review team concluded that none of the alternative sites would be environmentally preferable or obviously superior to the proposed Turkey Point site.

iv. Alternative System Designs

The NRC considered a variety of alternatives for heat-dissipation systems and circulating water systems. About two-thirds of the heat from a commercial nuclear reactor is rejected as heat to the environment. The remaining one-third of the reactor's generated heat is converted into electricity. Normal heat-dissipation systems transfer this rejected heat into the atmosphere as evaporation and/or heated discharge water to mix with nearby water bodies.

The proposed circulating-water system (CWS) for the Turkey Point Units 6 and 7 is a closed-cycle system that uses mechanical draft cooling towers for heat dissipation. A closed-cycle cooling-tower system is preferred over the once-through cooling systems that have been used in the past. The closed-cycle, recirculating cooling-water systems use less overall intake water than the older once-through technology and, as a result, fewer aquatic organisms are affected by cooling-water system operations. Each unit also has one mechanical draft cooling tower for the service-water system

The review team considered a variety of heat-dissipation systems and CWS alternatives. The heat dissipation systems included natural draft cooling towers, fan-assisted natural draft cooling towers, once-through cooling system, cooling ponds, spray ponds, dry cooling towers, a combination wet-dry cooling-tower system, and mechanical draft with plume abatement. The review team also considered alternative cooling water sources to the FPL-proposed primary source of reclaimed water from Miami-Dade Water and Sewer and back-up source of saltwater obtained from radial collector wells. The alternative water sources considered included marine, surface-water, and groundwater sources, but none were identified as environmentally preferable. Finally, alternative intake and discharge designs were considered but none of these

systems were considered by the staff to be environmentally preferable to the proposed system. The alternative system designs considered are discussed in Section 9.4 of the final EIS.

MITIGATION MEASURES

The NRC has taken all practicable measures within its jurisdiction to avoid or minimize environmental harm from the alternative selected. The final EIS describes measures to avoid and minimize environmental harm from the building and operation of the proposed plants. The building and operation of Turkey Point Units 6 and 7 will have effects on multiple environmental and regional resources. The EIS considers the potential for impacts to each resource. Many of the SMALL impacts are considered minimal because monitoring and use of environmental practices and safeguards will reduce any negative effects to an environmental resource. However, as explained in the EIS, some of the impacts greater than SMALL can be reduced or compensated, or prevented from becoming disruptive. An environmental protection plan (EPP) included in the license ensures compliance with the terms and conditions of any Biological Opinions issued pursuant to the Endangered Species Act of 1973, as amended, and ensures that the NRC is kept informed of other environmental matters. The EPP applies to the licensee's actions affecting the protected environmental resources within the scope of the NRC's Federal action and evaluated in the final EIS and the licensee's actions that may affect any newly discovered protected environmental resources. The EPP is intended to be consistent with Federal, State, and local requirements for environmental protection. The NRC is not otherwise imposing any license conditions in connection with mitigation measures or requiring any new environmental monitoring programs. Below are mitigation measures described in the final EIS with respect to individual resource areas. Also, a list of the authorizations, permits, and certifications FPL must obtain can be found in Appendix H of the final EIS.

Water Use and Quality

For hydrological alterations, grouting at the base of the approximately 35 ft deep plant excavations and use of bentonite slurry walls would limit extraction of groundwater from the Biscayne aquifer and hydraulically isolate the plant excavations from Biscayne Bay and Biscayne National Park. For water use, areas affected by construction dewatering activities would be isolated with sheet piling technology or the equivalent if needed to control extraction of groundwater. The presence of the industrial wastewater facility and the berm to the east of the return canal would restrict surface-water flows and limit impacts on down-stream bodies of surface water or resources including wetlands and Biscayne Bay.

For water-quality, building activities related to the transmission lines and pipelines would comply with Federal and State regulations. Environmental BMPs would be applied, including use of existing rights-of-way to the extent practicable, erosion-control devices, matting to reduce compaction, and post-construction restoration activities. FPL's building activities would be performed under existing permits/plans and a stormwater pollution prevention plan developed for the building activities. Berms would be installed to direct onsite runoff to the industrial wastewater facility which is overseen by the Florida Department of Environmental Protection. Cutoff walls (sheet piles) would be installed to isolate equipment in the barge-unloading area from the turning basin. The cutoff wall installation would be performed under permit requirements issued by the USACE. The necessary construction activities would be performed under a new stormwater pollution prevention plan or under a modification of an existing Turkey Point stormwater pollution prevention plan and associated spill-prevention plan that could include oil and fuel containment.

Activities related to installation of deep injection wells and injection monitoring wells are regulated by the Florida Department of Environmental Protection's Underground Injection Control Program and local permits. These regulations specify approved construction techniques and testing and monitoring requirements to ensure that groundwater quality is not adversely affected by construction of the wells. Any surface-water runoff related to construction of the deep-injection wells, monitoring wells, and associated equipment would be directed to the cooling canals of the industrial wastewater facility.

Land Use

Site-preparation and site-development activities for proposed Units 6 and 7 would be conducted in accordance with applicable Federal, State, and local regulations and would be consistent with applicable zoning and land-use plans. FPL would acquire the necessary permits and authorizations and would implement environmental controls such as stormwater-management systems, fugitive dust control, and spill-containment controls before initiating earth disturbance. FPL stated in its application that it would use standard dust-control measures, and stabilize, contour, and re-vegetate permanently disturbed lands.

FPL has indicated in its application that it will use existing rights-of-way to the extent practicable and that it routinely uses standard industry construction practices, environmental BMPs, and mitigation measures to ensure adverse environmental effects of construction are avoided, minimized, or mitigated. FPL also stated that it will use restrictive land-clearing processes in forested wetland areas (right-of-way clearing and preparation), turbidity screens and erosion-control devices in areas of wetlands and water resources (access road/structure pad construction), existing access roads for ingress and egress to rights-of-way where available (access road/structure pad construction), and standard industry construction practices for foundation and structure excavation and construction (line construction).

Wetlands

Impacts on wetlands, including mangrove forests designated as Aquatic Resources of National Importance, would be minimized by paralleling existing roads and utilities where possible, installing culverts under existing road beds, and the use of silt fences. Unavoidable wetland impacts would be mitigated by FPL through a series of responsible compensatory wetland restoration and enhancement projects on FPL-owned land and purchase of credits in the Everglades Mitigation Bank and Hole-in-the-Donut In-lieu Fee Project. The wetland mitigation would include measures to offset loss of mudflat habitat and shorebird nesting areas.

Terrestrial Ecosystems

FPL has committed to measures to reduce noise and vibration levels during construction, which may include staggering work activities and use of noise dampeners and noise-control equipment on vehicles and equipment. Furthermore, FPL committed that, to the extent practicable, unnecessary lights would be turned off at night, lights would be turned downward or hooded to direct light downward, and lower-powered lights would be used during construction to minimize impacts on wildlife. Impacts to the Florida panther and to wood stork core foraging areas would be mitigated through purchase of appropriate mitigation credits. To mitigate the potential for collisions or electrocutions, including those of wood storks, avian-friendly design standards would be used as provided for in the avian protection plan. Measures to reduce impacts on the eastern indigo snake include educating site personnel about snake identification and U.S. Fish and Wildlife Service requirements for reporting eastern indigo snake occurrences

in the project area. Measures to reduce the impact on Florida panthers include speed limits and road restoration. FPL is required to comply with conditions of the Section 404 permit from the USACE and its Clean Water Act Section 401 water-quality certification, including any required mitigation.

Aquatic Ecosystem

A project-specific management plan for crocodiles and other listed species has been created for construction of the new units. Mitigation measures may include warning signs and education material (for construction personnel) about the presence and status of crocodiles and restrictions of nocturnal activities. Traffic access at the north end of the cooling canals of the industrial wastewater facility may pose a threat to crocodiles crossing this road and would be mitigated by installation of a wildlife corridor to provide pathways for crocodiles to travel between wetlands on either side of this road. Construction of transmission facilities within the cooling canals of the industrial wastewater facility may avoid known crocodile nests and be conducted between nesting seasons.

During in-water and nearshore construction activities, a Barge Delivery Plan would be followed to reduce the risk of collision with or injury to manatees by tug and barge operations or dredging. In addition, FPL may follow the guidance provided by the National Marine Fisheries Service to protect sea turtles and Smalltooth Sawfish during nearshore construction activities. A Spill-Prevention, Control, and Countermeasure Plan would be implemented in accordance with U.S. Environmental Protection Agency regulations. Spills would be attended to and not allowed to flow to nearby surface water. Modification to the equipment barge-unloading area would be performed using cutoff wall technology (sheet piles) to isolate the equipment barge-unloading area from the turning basin. Dredging, if necessary, would conform to guidance provided by the U.S. Army Corps of Engineers dredging permit conditions. Building activities would be controlled to minimize any impacts on red mangroves or Mangrove Rivulus.

Lastly, FPL must comply with the State 401 water quality certification and BMPs as well as Section 404 permit from the USACE and its Clean Water Act Section 401 water-quality certification.

Socioeconomics and Environmental Justice

The impact of fugitive dust on the surrounding environment would be minimized through the implementation of a dust-control plan. Construction activities would be phased to minimize daily emissions of particulate matter, carbon monoxide, oxides of nitrogen, sulfur dioxide, and volatile organic compounds. Furthermore, fill and construction material deliveries will be scheduled so as to not coincide with peak commuting hours and during concentrated peak hours of travel. New entrance and access road will be built as well as widening of existing roads and turning lanes.

Historic and Cultural Properties

FPL will follow established procedures to halt work and consult with the Florida State Historic Preservation Officer if a potential unanticipated historic or cultural resource is discovered within the Area of Potential Effect. Additionally, FPL will evaluate the significance of any identified cultural or historic resources within the Areas of Potential Effect and consult with the Florida State Historic Preservation Office to define mitigation requirements, as appropriate, for construction of the transmission lines. Finally, FPL could complete cultural resource surveys for

the transmission lines and any other offsite facilities that have not been surveyed, prior to initiating proposed and future ground-disturbing activities. The surveys would include subsurface testing and visual impact assessments where required and continued consultation with the U.S. Army Corps of Engineers and local Native American Tribes during the course of the cultural resources studies.

Human Health

FPL will monitor and maintain the reclaimed water (i.e. tertiary) treatment facility to minimize levels of microbial and chemical agents in the cooling tower and condenser, comply with Occupational Safety Health Act standards for operational workers, and monitor the release of nonradiological waste emissions and effluents.

With respect to radiological health impacts, doses to construction workers, the public, and wildlife will be maintained below Federal standard public dose limits.

With respect to impacts from nonradioactive waste, solid, liquid, and gas wastes that are generated will be handled according to county, State, and Federal regulations.

DETERMINATION:

Based on an independent review, analysis and evaluation contained in the final EIS; careful consideration of all the identified social, economic, and environmental factors and input received from other agencies, organizations and the public; the factors and mitigation measures outlined above; and the input received during the mandatory hearing, it is determined that the standards for issuance of a combined license, as described in 10 CFR 52.97, have been met and the requirements of Section 102 of NEPA have been satisfied.

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