UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 25, 2012

Mr. Mano Nazar
Executive Vice President and
Chief Nuclear Officer
Florida Power and Light Company
P.O. Box 14000
Juno Beach, Florida 33408-0420

SUBJECT: ST. LUCIE PLANT, UNITS 1 AND 2—ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT RELATED TO THE PROPOSED EXTENDED POWER UPRATE (TAC NOS. ME5091 AND ME5843)

Dear Mr. Nazar:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your applications for amendments dated November 22, 2010, for St. Lucie Unit 1, and February 23, 2011, for St. Lucie Unit 2, and subsequent supplements. The proposed amendments would authorize increasing the licensed core power levels for St. Lucie Units 1 and 2 from 2700 megawatts thermal (MWt) to 3020 MWt. The increase in core thermal power will be approximately 12 percent, including a 10-percent power uprate and a 1.7-percent measurement uncertainty recapture, over the current licensed core thermal power level and is categorized as an Extended Power Uprate.

The assessment is being forwarded to the Office of the Federal Register for publication. If you have any questions, please contact me by phone at 301-415-2788 or by email at tracy.orf@nrc.gov.

Sincerely,

Tracy J. Orf, Project Manager
Plant Licensing Branch 2-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-335 and 50-389

Enclosure:
Environmental Assessment

cc w/encl: Distribution via Listserv

7590-01-P

NUCLEAR REGULATORY COMMISSION

[Docket Nos. 50-335 AND 50-389; NRC-2012-XXXX]

Florida Power & Light Company

St. Lucie, Units 1 and 2

Environmental Assessment and Finding of No Significant Impact

Related to the Proposed License Amendment

to Increase the Maximum Reactor Power Level

AGENCY: Nuclear Regulatory Commission (NRC).

ACTION: Final environmental assessment (EA) and finding of no significant impact (FONSI).

ADDRESSES: Please refer to Docket ID <NRC-2012-XXXX> when contacting the NRC about the availability of information regarding this document. You may access information related to this document, which the NRC possesses and is publicly available, using the following methods:

- **Federal Rulemaking Website:** Go to *http://www.regulations.gov* and search for Docket ID <NRC-2012-XXXX>. Address questions about NRC dockets to Carol Gallagher; telephone: 301-492-3668; e-mail: *Carol.Gallagher@nrc.gov*.
- **NRC's Agencywide Documents Access and Management System (ADAMS):** You may access publicly-available documents online in the NRC Library at *http://www.nrc.gov/reading-rm/adams.html*. To begin the search, select "*ADAMS Public Documents*" and then select "*Begin Web-based ADAMS Search.*" For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to pdr.resource@nrc.gov. The ADAMS accession number for each document

referenced in this notice (if that document is available in ADAMS) is provided the first time that a document is referenced.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

I. Introduction

The NRC is considering issuance of an amendment for Renewed Facility Operating License Nos. DPR-67 and NPF-16, issued to Florida Power & Light Company (FPL or the licensee) for operation of the St. Lucie Plant, Units 1 and 2 (St. Lucie), located in St. Lucie County, Florida, in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.90. The NRC performed an EA and based on its results, the NRC is issuing a FONSI.

The proposed license amendment would increase the maximum thermal power level from 2,700 megawatts thermal (MWt) to 3,020 MWt for each unit. The proposed power increase is 11.85 percent over the current licensed thermal power. In 1981, FPL received approval from the NRC to increase its power by 5.47 percent to the current power level of 2,700 MWt.

The NRC did not identify any significant environmental impacts associated with the proposed action based on its evaluation of the information provided in the licensee's application and other available information. For further information with respect to the proposed action, see the licensee's applications dated November, 22, 2010, and February 25, 2011 (ADAMS Accession Nos. ML103560419 and ML110730116, respectively), as supplemented by letter dated May 2, 2012 (ADAMS Accession No. ML12124A224).

The NRC published a notice in the *Federal Register* requesting public review and

comment on a draft EA and FONSI for the proposed action on January 6, 2012 (77 FR 813), and established February 6, 2012, as the deadline for submitting public comments. By letters dated January 30, 2012 (ADAMS Accession No. ML12037A063), and January 6, 2012 (ADAMS Accession No. ML12044A127), the NRC received comments from FPL and Mr. Edward W. Johnson, respectively. The FPL comments provided new estimates on the number of additional workers needed to support the outage work implementing the proposed Extended Power Uprate (EPU) and revised the projected outage times necessary to implement the EPU. The FPL comments have been incorporated in this final EA with no change to the FONSI conclusion. The comments from Mr. Johnson have been addressed in this final EA with no change to the FONSI conclusion. The comments are summarized in the "Summary of Comments" section of this EA.

II. Environmental Assessment

Plant Site and Environs:

The St. Lucie site is located on approximately 1,130 acres (457 hectares) in Sections 16 and 17, Township 36 South, Range 41 East on Hutchinson Island in unincorporated St. Lucie County, Florida. St. Lucie is bordered by the Atlantic Ocean to the east and the Indian River Lagoon, a tidally influenced estuary, to the west. The plant is located on Hutchinson Island between Big Mud Creek to the north and Indian River to the south on an area previously degraded through flooding, drainage, and channelization for mosquito control projects. The nearest city limits from the plant site on the Atlantic coast are Port St. Lucie, approximately 2.5 miles (mi) (4 kilometers (km)) southwest, and Fort Pierce, approximately 4 mi (6.4 km) northwest of the plant. St. Lucie has two pressurized water reactors (Units 1 and 2), each designed by Combustion Engineering for a net electrical power output of 839 megawatts electric. St. Lucie Unit 1 is fully owned by FPL, which has operated it since March 1, 1976. FPL

also solely operates St. Lucie Unit 2, which began operations on April 6, 1983, and is co-owned by FPL, Orlando Utilities Commission, and Florida Municipal Power Agency.

St. Lucie withdraws cooling water from the Atlantic Ocean through three offshore cooling water intakes with velocity caps. The ocean water is drawn through buried pipes into the plant's L-shaped intake canal to the eight intake pumps that circulate the non-contact cooling water through the plant. Two mesh barrier nets, one net of 5 inch (in) (12.7 centimeter (cm)) mesh size and the other of 8 in (20.3 cm) mesh size, and one rigid barrier located sequentially in the intake canal reduce the potential loss of large marine organisms, mostly sea turtles. Water passes through a trash rack made of 3 in (7.6 cm) spaced vertical bars and a 3/8 in (1 cm) mesh size traveling screen, against which marine organisms that have passed through the nets are impinged, and into eight separate intake wells (four per unit) where it is pumped to a circulating-water system and an auxiliary cooling water system at each unit. The majority of the water goes to a once-through circulating-water system to cool the main plant condensers. The system has a nominal total capacity of 968,000 gallons per minute (gpm) (61,070 liters per second (L/s)). The auxiliary cooling water systems are also once-through cooling systems but use much less water (up to 58,000 gpm (3,660 L/s)) than the circulating-water systems. Marine life that passes through the screens becomes entrained in the water that passes through the plant and is subject to thermal and mechanical stresses. The plant is also equipped with an emergency cooling water intake canal on the west side that can withdraw Indian River Lagoon water through Big Mud Creek, but this pathway is closed during normal plant operation.

The heated water from the cooling water systems flows to a discharge canal and then through two offshore discharge pipes beneath the beach and dune system back to the Atlantic Ocean. One 12 foot (ft) (3.6 meter (m))-diameter discharge pipe extends approximately 1,500 ft (457 m) offshore and terminates in a two-port "Y" diffuser. A second 16 ft (4.9 m)-diameter discharge pipe extends about 3,400 ft (1,040 m) from the shoreline and terminates with a

multiport diffuser. This second pipe has fifty-eight 16 in (41 cm)-diameter ports spaced 24 ft (7.3 m) apart along the last 1,400 ft (430 m) of pipe farthest offshore. The discharge of heated water through the diffusers on the discharge pipes ensures distribution over a wide area and rapid and efficient mixing with ocean water.

Background Information on the Proposed Action:

By application dated November 22, 2010 (Unit 1) and February 25, 2011 (Unit 2), the FPL requested an amendment for an EPU for St. Lucie to increase the licensed thermal power level from 2,700 MWt to 3,020 MWt for each unit, which represents an increase of 11.85 percent above the current licensed thermal power. This change requires NRC approval prior to the licensee operating at that higher power level. The proposed action is considered an EPU by the NRC because it exceeds the typical 7-percent power increase that can be accommodated with only minor plant changes. An EPU typically involves extensive modifications to the nuclear steam supply system contained within the plant buildings.

FPL plans to make the extensive physical modifications to the plant's secondary side (i.e., non-nuclear) steam supply system that are needed in order to implement the proposed EPU. The modifications were scheduled to be implemented for Unit 1 and Unit 2 over the course of four refueling outages. Three of the four outages have been completed, with Unit 2 modifications scheduled to be implemented during the fall 2012 outage, which will be longer than a routine 35-day outage at approximately 113 days. Unit 1 also requires a short "mid-cycle" outage of 10-days in the summer of 2012 to implement final EPU modifications. The actual power uprate, if approved by NRC, constitutes a 10 percent power uprate from major equipment installations and upgrades and operating changes and an additional 1.7 percent power uprate from upgrades that decrease certain measurement uncertainties. As part of the proposed EPU project, FPL would release heated water with a proposed

temperature increase of 3 °F (1.7 °C) above the current discharge temperature through the discharge structures into the Atlantic Ocean.

Approximately 800 people are currently employed at St. Lucie on a full-time basis. For the recently completed Unit 1 outage, this workforce was augmented by an additional 750 EPU workers on average, with a peak of 1,703 workers. For the mid-cycle Unit 1 outage, FPL estimates no additional staff. For the upcoming Unit 2 outage, FPL estimates an average of 1,058 workers, with a peak of 1,439 workers. The increase of workers would be larger than the number of workers required for a routine outage; however, the peak construction workforce would be smaller than the FPL-reported peak workforce for previous outages involving replacement of major components.

The Need for the Proposed Action:

FPL states in its environmental report that the proposed action is intended to provide an additional supply of electric generation in the State of Florida without the need to site and construct new facilities, or to impose new sources of air or water discharges to the environment. FPL has determined that increasing the electrical output of St. Lucie 1 and 2 is the most cost effective option to meet the demand for electrical energy while enhancing fuel diversity and minimizing environmental impacts, including the avoidance of greenhouse gas emissions.

As stated in FPL's application, the proposed action is to provide the licensee with the flexibility to increase the potential electrical output of St. Lucie. The proposed EPU will increase the output for each unit by about 320 MWt, from about 2,700 MWt to about 3,020 MWt.

Environmental Impacts of the Proposed Action:

As part of the original licensing process for St. Lucie, the U.S. Atomic Energy Commission published a Final Environmental Statement (FES) in 1973 for Unit 1, and the NRC published a FES in 1982 for Unit 2 (NUREG-0842). The two FESs contain an evaluation of the potential environmental impacts associated with the operation of St. Lucie over their licensed lifetimes. In May 2003, the NRC published an environmental impact statement (EIS) for St. Lucie (ADAMS Accession No. ML031360705). The 2003 EIS evaluated the environmental impacts of operating St. Lucie for an additional 20 years beyond its then-current operating license, extending the operation life of Unit 1 until 2036 and Unit 2 until 2043. The NRC determined that the overall environmental impacts of license renewal were small. This NRC evaluation is presented in NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 11, Regarding St. Lucie Units 1 and 2" (SEIS-11). The NRC used information from FPL's license amendment request for the EPU, FPL's response to requests for additional information (ADAMS Accession No. ML12132A067), consultation with National Marine Fisheries Service, the FESs, and SEIS-11 to perform the EA for the proposed EPU.

FPL's application states that it would implement the proposed EPU without extensive changes to buildings or to other plant areas outside of buildings. FPL proposes to perform all necessary physical plant modifications in existing buildings at St. Lucie or along the existing electrical transmission line right of way (ROW). With the exception of the high-pressure turbine rotor replacement, the required plant modifications would be generally small in scope. Other plant modifications would include installing a new digital turbine control system and associated control room; providing additional cooling for some plant systems; modifying feedwater and condensate systems; accommodating greater steam and condensate flow rates; adjusting the

current onsite power system to compensate for increases in electrical loading; and upgrading instrumentation to include minor items such as replacing parts, changing setpoints, and modifying software.

FPL would use a vehicle and helicopter for transmission line modifications proposed along the existing overhead electrical transmission line ROW. The vehicle would transport personnel and a spool of overhead wire as a helicopter holds and moves the wire into place for the stringing activities. Although the modifications are part of the proposed EPU, this type and extent of activity along the ROW is included in existing maintenance permits and licenses.

The sections below describe the potential nonradiological and radiological impacts to the environment that could result from the proposed EPU.

Nonradiological Impacts

Land Use and Aesthetic Impacts:

Potential land use and aesthetic impacts from the proposed EPU include impacts from proposed plant modifications at St. Lucie. While FPL proposes some plant modifications, most plant changes related to the proposed EPU would occur within existing structures, with the exception of modifications along the electrical transmission line ROW. As described in the licensee's application, the proposed electrical transmission line modifications would include the addition of subconductor spacers, an overhead wire, and replacement of relay protection electronics. The overhead wire would function as a ground for relay protection of the transmission lines. FPL would install these transmission line modifications via helicopter. The only land use activity FPL expects to occur on the ground along the ROW would be the periodic need to park a truck or trailer containing a spool of wire that would be strung but would not extend outside of the existing ROW area. The NRC expects the electrical transmission line modifications to cause little or no observable change in the appearance of the transmission

lines. Maintenance of the electrical transmission line ROW (tree trimming, mowing, and herbicide application) would continue after EPU implementation. The NRC does not expect land use or aesthetic changes for the proposed EPU along the transmission line ROW.

During the EPU related refueling outages, FPL added two additional overflow parking areas (Area 1 and Area 2), safe walk pathways, additional lighting, and signage. The parking lot located in Area 1 was a previously vacant area that was prepared by grading. The parking lot located in Area 2 required some minor grubbing and grading. Both parking lots are located on previously disturbed areas, and FPL performed surveys of the areas prior to any ground-disturbing activities to evaluate potential impacts to threatened or endangered species and any ecological and cultural resources. Permits were not required or obtained for this work and best management practices were employed to reduce fugitive emissions. Other than the ground-disturbing activities described above, no new construction would occur outside of existing plant areas, and no expansion of buildings, roads, parking lots, equipment lay-down areas, or storage areas are required to support the proposed EPU. Existing parking lots, road access, equipment lay-down areas, offices, workshops, warehouses, and restrooms would be used during plant modifications. Because land use conditions would not change, and because any land disturbance has and would occur within previously disturbed areas, there would be no significant impact from EPU-related plant modifications on land use and aesthetic resources in the vicinity of St. Lucie.

Air Quality Impacts:

Because of its coastal location, meteorological conditions conducive to high air pollution are infrequent at St. Lucie. The plant is located within the South Florida Intrastate Air Quality Control Region. In addition, the Central Florida Intrastate Air Quality Control Region and the Southwest Florida Intrastate Air Quality Control Region are within 50 mi (80.5 km) of St. Lucie. These regions are designated as being in attainment or unclassifiable for all criteria pollutants in the U.S. Environmental Protection Agency's (EPA) regulations at 40 CFR 81.310.

Diesel generators, boilers, and other activities and facilities associated with St. Lucie emit pollutants. The Florida Department of Environmental Protection (FDEP) regulates emissions from these sources under Air Permit 1110071-006-AF. The FDEP reported no violations at St. Lucie in the last 5 years. NRC expects no changes to the emissions from these sources as a result of the EPU.

During EPU implementation, some minor and short duration air quality impacts would occur from other non-regulated sources. Vehicles of the additional outage workers needed for EPU implementation would generate the majority of air emissions during the proposed EPU-related modifications. Based on a traffic study FPL conducted for the EPU project, an additional 917 construction vehicles are estimated during an EPU-related outage period, with a peak increase of 1,333. FPL has completed three of four planned outages, with the fourth outage planned for the fall of 2012. The outage duration is expected to be longer than a routine 35-day outage, at 113 days. Based on the traffic study conducted by FPL, air emissions from the EPU workforce, truck deliveries, and construction/modification activities would not exceed the FDEP annual emissions limit of 5 tons per year, recognized in Rule 62-210.300(3)(b) of the Florida Administrative Code, and would therefore not be significant. In addition, FPL would perform the majority of the EPU work inside existing buildings, which would not result in changes to outside air quality. NRC expects no significant impacts to regional air quality from the proposed EPU

beyond those air impacts evaluated for SEIS-11, including potential minor and temporary impacts from worker activity.

Water Use Impacts

Groundwater:

FPL has approval from the City of Fort Pierce and the Fort Pierce Utilities Authority to use freshwater for potable and sanitary purposes. Although this freshwater comes from groundwater sources pumped from the mainland, St. Lucie does not use groundwater in any of its cooling systems and has no plans for groundwater use as part of plant operations in the future. The plant currently uses approximately 309,565 gallons (gal) (1,171,831 liters (L)) of freshwater per day (or approximately 154,800 gal (585,982 L) per unit per day) and uses seawater from the Atlantic Ocean for noncontact cooling water. No production wells are present on the plant site for either domestic-type water uses or industrial use. FPL does not discharge to groundwater at the plant site or on the mainland, and the plant's individual wastewater facility permit (IWFP) does not apply to groundwater.

Under the EPU, FPL does not expect to significantly change the amount of freshwater use or supply source. With an expected increase of 1,000 to 1,700 workers supporting EPU construction activities, NRC expects potable water use to increase during the outage and return back to the regular operating levels after EPU implementation. It is unlikely this potential temporary increase in groundwater use during the EPU construction activities would have any effect on other local and regional groundwater users. FPL has no use restrictions on the amount of water supplied by the City of Fort Pierce and the Fort Pierce Utilities Authority. NRC expects no significant impact on groundwater resources during proposed EPU construction activities or following EPU implementation.

Surface Water:

The NRC evaluated the potential effects of releasing heated water with a proposed temperature increase of 3 °F (1.7 °C) above the current discharge temperature through the discharge pipes into the Atlantic Ocean as part of the proposed EPU. FDEP regulates the Florida Surface Water Quality Standards through an IWFP, which also establishes the maximum area subject to temperature increase (mixing zone), maximum discharge temperatures, and chemical monitoring requirements.

The plant injects chlorine in the form of sodium hypochlorate into seawater upstream of the intake cooling water system in regulated quantities to control microorganisms. Because FDEP regulates discharges and requires chemical monitoring, NRC expects that the authorized discharges will not exceed the IWFP limitations after EPU implementation.

FDEP has issued the plant a permit modification to the IWFP for a 2 °F (1.1 °C) temperature increase of the heated water discharge temperature limit—from 113 °F (45 °C) before the EPU to the proposed thermal discharge limit of 115 °F (46.1 °C)—to accommodate the 3 °F (1.7 °C) actual discharge temperature increase. FDEP granted this permit modification with the condition that FPL performs biological and thermal monitoring studies to demonstrate continued compliance with the Florida Surface Water Quality Standards, Thermal Surface Water Criteria. The proposed EPU will not result in an increase in the amount or rate of water withdrawn from or discharged to the Atlantic Ocean. FPL conducted a thermal discharge study for the proposed EPU-related increase in discharge water temperature (ADAMS Accession No. ML100830443) that predicts an increase in the extent of the thermal plume (mixing zone). The ambient water affected by the absolute temperature increase beyond the existing mixing zone would be less than 25 ft (7.6 m) vertically or horizontally for the two-port "Y" diffuser and less than 6 ft (1.8 m) in any direction for the multiport diffuser.

The FDEP has the authority to review all Federal licenses for coastal zone consistency with the FCMP. In 2007, FPL included a request for FDEP to review St. Lucie's coastal zone consistency as part of their Site Certification Application for the EPU (ADAMS Accession No. ML12144A316). FDEP subsequently issued St. Lucie's Site Certification, demonstrating the proposed EPU's consistency with Section 307 of the Coastal Zone Management Act (ADAMS Accession No. ML12144A316).

Because the NRC expects chemical and thermal discharges to remain within the limits specified in St. Lucie's modified permits, and because the FDCA determined that the proposed EPU is consistent with Section 307 of the Coastal Zone Management Act, there would be no significant impact to surface water resources following implementation of the proposed EPU.

Aquatic Resource Impacts:

The potential impacts to aquatic resources from the proposed action could include impingement of aquatic life on barrier nets, trash racks, and traveling screens; entrainment of aquatic life through the cooling water intake structures and into the cooling water systems; and effects from the discharge of chemicals and heated water.

Because the proposed EPU will not result in an increase in the amount or velocity of water being withdrawn from or discharged to the Atlantic Ocean, NRC expects no increase in aquatic impacts from impingement and entrainment beyond the current impact levels. Currently, all organisms impinged on the trash racks and traveling screens would be killed, as would most, if not all, entrained organisms. FPL would continue to rescue and release sea turtles and other endangered species trapped by the barrier nets in the intake canal. In addition, FPL's IWFP permit requires FPL to monitor aquatic organism entrapment in the intake canal, and, if unusually large numbers of organisms are entrapped, to submit to the FDEP a plan to mitigate such entrapment.

The predicted 3 °F (1.7 °C) temperature increase from the diffusers and resulting increased size of the mixing zone would increase thermal exposure to aquatic biota at St. Lucie in the vicinity of the discharge locations. The thermal discharge study conducted for the proposed EPU predicts no increase in temperature higher than 96 °F (35.5 °C) within 6 ft (1.8 m) of the bottom of the ocean floor and within 24 ft (7.3 m) from the ocean surface as a result of heated water discharged from the multiport diffuser. The same study also predicts that heated water discharged from the "Y" diffuser would not increase the ocean water temperature higher than 96 °F (35.5 °C) within 2 ft (0.6 m) of the bottom of the ocean floor and within 25 ft (17 m) from the ocean surface. Based on this analysis, surface water temperature would remain below 94 °F (34.4 °C). Thermal studies conducted for St. Lucie prior to its operation and summarized in SEIS-11 predicted there would be minimal impacts to aquatic biota from diffuser discharges that result in a surface temperature less than 97 °F (36.1 °C). Because NRC expects the surface water temperature not to exceed 94 °F (34.4 °C) as a result of the proposed EPU, NRC concludes that there are no significant impacts to aquatic biota from the proposed EPU.

Although the proposed increase in temperature after EPU implementation would continue to exceed the Thermal Surface Water Quality Criteria for open waters as contained in the Florida Surface Water Quality Standards established by FDEP, St. Lucie currently operates under a separate mixing zone variance authorized by the FDEP. The NRC expects FPL to continue to meet its limits under the mixing zone variance after EPU implementation. FPL will also continue to assess any potential impacts by performing the biological and thermal studies required by the IWFP modification mentioned above. If the study results are insufficient to adequately evaluate environmental changes, or if the data indicates a significant degradation to aquatic resources by exceeding Florida Surface Water Quality Standards or is inconsistent with the FCMP, FDEP could enforce additional abatement or mitigation measures to reduce the environmental impacts to acceptable levels. If NRC approves the proposed EPU, NRC does

not expect aquatic resource impacts significantly greater than current operations because State agencies will continue to assess study results and the effectiveness of current FPL environmental controls. FDEP could impose additional limits and controls on FPL if the impacts are larger than expected. Therefore, the NRC has determined that if FDCA and FDEP review the study results and allow FPL to operate at the proposed EPU power level, the increase in thermal discharge will not result in significant impacts on aquatic resources beyond the current impacts that occur during plant operations.

Essential Fish Habitat Consultation:

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) identifies the importance of habitat protection to healthy fisheries. Essential Fish Habitat (EFH) is defined as those waters and substrata necessary for spawning, breeding, feeding, or growth to maturity (Magnuson-Stevens Act, 16 USC 1801 *et seq.*). Designating EFH is an essential component in the development of Fishery Management Plans to minimize habitat loss or degradation of fishery stocks and to take actions to mitigate such damage. Section 305(b) of the MSA provides that Federal agencies shall consult with the Secretary of Commerce on all actions or proposed actions authorized, funded, or undertaken by the agency that may adversely affect any EFH. On March 20, 2012, an EFH assessment for the proposed EPU was sent to the National Marine Fisheries Service (NMFS) under separate cover to initiate an EFH consultation (ADAMS Accession No. ML12053A345). The submitted EFH assessment found no adverse effects to EFH for two of the species of concern (*Polyprion americanus* and *Litopenaeus setiferus*) and minimal adverse effects for the remaining 40 species. NMFS responded to NRC's EFH assessment on May 18, 2012 (ADAMS Accession No. ML12144A008). In its letter, NMFS concluded that the proposed EPU would not have a substantial adverse impact on EFH. This letter fulfilled the NRC's EFH consultation requirements for the proposed EPU under the MSA.

Based on its assessment and NMFS's conclusions, the NRC concludes that the proposed EPU would not have substantial adverse impact on EFH.

The following table identifies the species that the NRC considered in its EFH assessment. NMFS noted in its response that four additional species—Spanish mackerel (*Scomberomorus maculatus*), cobia (*Rachycentron canadum*), king mackerel (*Scomberomorus cavalla*), and spiny lobster (*Panulirus argus*)—should have been included in the NRC's EFH assessment. However, NMFS also noted that this omission does not change the overall evaluation.

Species of Fish Analyzed in the EFH Assessment

Fishery Management Plan	Scientific Name	Common Name
Coral		
	Order Alcyonacea	octocorals
	Order Scleractinia	stony coral
Highly Migratory Coastal Pelagics		
Tuna	*Katsuwonus pelamis*	Atlantic skipjack tuna
Swordfish	*Xiphias gladius*	swordfish
Billfish	*Tetrapturus pfluegeri*	longbill spearfish
	Istiophorus platypterus	sailfish
Large Coastal Sharks	*Carcharhinus limbatus*	blacktip shark
	Carcharhinus leucas	bull shark
	Carcharhinus perezi	Caribbean reef shark
	Carcharhinus obscures	dusky shark
	Sphyrna mokarran	great hammerhead shark
	Negaprion brevirostris	lemon shark
	Ginglymostoma cirratum	nurse shark
	Carcharhinus plumbeus	sandbar shark
	Sphyrna lewini	scalloped hammerhead shark
	Carcharhinus falciformis	silky shark
	Carcharhinus brevipinna	spinner shark

Fishery Management Plan	Scientific Name	Common Name
	Galeocerdo cuvier	tiger shark
Small Coastal Sharks	*Carchardon carcharias*	white shark
	Rhizoprionodon terraenovae	Atlantic sharpnose shark
	Carcharhinus acronotus	blacknose shark
	Sphyrna tiburo	bonnethead shark
	Carcharhinus isodon	finetooth shark
Shrimp		
	Farfantepenaeus aztecus	brown shrimp
	Farfantepenaeus duorarum	pink shrimp
	Sicyonia brevirostris	rock shrimp
	Litopenaeus setiferus	white shrimp
Snapper-Grouper		
	Lutjanus buccanella	blackfin snapper
	Caulolatilus microps	blueline tilefish
	Epinephelus itajara	goliath grouper
	Lutjanus griseus	gray (mangrove) snapper
	Seriola dumerili	greater amberjack
	Lutjanus analis	mutton snapper
	Pagrus pagrus	red porgy
	Lutjanus campechanus	red snapper
	Mycteroperca phenax	scamp
	Lutjanus vivanus	silk snapper
	Epinephelus niveatus	snowy grouper
	Epinephelus drummondhayi	speckled hind
	Rhomboplites aurorubens	vermilion snapper
	Epinephelus nigritus	Warsaw grouper
	Haemulon plumier	white grunt
	Polyprion americanus	wreckfish
	Epinephelus flavolimbatus	yellowedge grouper

Terrestrial Resources Impacts:

St. Lucie is situated on a relatively flat, sheltered area of Hutchinson Island with red mangrove swamps on the western side of the island that gradually slope downward to a mangrove fringe bordering the intertidal shoreline of the Indian River Lagoon. East of the facility, land rises from the ocean shore to form dunes and ridges approximately 15 ft (4.5 m) above mean low water. Tropical hammock areas are present north of the discharge canal, and additional red mangrove swamps are present north of Big Mud Creek. Habitat in the electrical transmission line ROW is a mixture of human-altered areas, sand pine scrub, prairie/pine flatwoods, wet prairie, and isolated marshes.

Impacts that could potentially affect terrestrial resources include disturbance or loss of habitat, construction and EPU-related noise and lighting, and sediment transport or erosion. FPL plans to conduct electrical transmission line modifications that would require a periodic need to park a truck or trailer containing a spool of wire. The NRC found in SEIS-11 that no bird mortalities were reported up to that time associated with the electrical transmission lines and predicted that FPL maintenance practices along the ROW would likely have little or no detrimental impact on the species potentially present in or near the electrical transmission ROW. Because FPL proposes a similar type and extent of land disturbance during typical maintenance of the electrical transmission line ROW for the EPU modifications, NRC expects the proposed transmission line modifications would not result in any significant changes to land use or increase habitat loss or disturbance, sediment transport, or erosion beyond typical maintenance impacts. Noise and lighting would not adversely affect terrestrial species beyond effects experienced during previous outages because EPU-related construction modification activities would take place during outage periods, which are typically periods of heightened activity. Also, as previously discussed, prior to the grading or grubbing conducted for the two additional EPU-related parking areas, FPL performed a survey of the areas in accordance with

FPL's conditions of site certification under the FDEP and followed best management practices to ensure that any ecological and terrestrial resources were protected. For all of these reasons, the NRC expects no significant impacts on terrestrial resources associated with the proposed action.

Threatened and Endangered Species :

Under Section 7 of the Endangered Species Act of 1973, as amended (ESA), Federal agencies, in consultation with the U.S. Fish and Wildlife Service (FWS) or the National Marine Fisheries Service (NMFS)(as appropriate), must ensure that actions the agency authorizes, funds, or carries out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat.

List of Species

A number of species in St. Lucie County are listed as threatened or endangered under the ESA, and other species are designated as meriting special protection or consideration. These include birds, fish, aquatic and terrestrial mammals, flowering plants, insects, and reptiles that could occur on or near St. Lucie Units 1 and 2 facility areas and possibly along the electrical transmission line ROW. The most common occurrences of threatened or endangered species near St. Lucie are five species of sea turtles that nest on Hutchinson Island beaches: Loggerhead turtles (*Caretta caretta*), Atlantic green turtles (*Chelonia mydas*), Kemp's Ridley turtles (*Lepidochelys kempii*), Leatherback turtles (*Dermochelys coriacea*), and Hawksbill turtles (*Eretmochelys imbricata*).

The following table identifies the species that the NRC considered in this EA that it had not previously assessed in SEIS-11 for license renewal because the species were not listed at that time.

Table of Federally Listed Species Occurring in St. Lucie County Not Previously Assessed in SEIS-11

Scientific Name	Common Name	ESA Status[a]
Birds		
Calidris canutus ssp. *Rufa*	red knot	Candidate
Charadrius melodus	piping plover	T
Dendroica kirtlandii	Kirtland's warbler	E
Grus americana	whooping Crane[b]	EXPN, XN
Fish		
Pristis pectinata	smalltooth sawfish	E
Mammals		
Puma concolor	puma	T/SA
Reptiles		
Crocodylus acutus	American crocodile	T
Gopherus polyphemus	gopher tortoise[c]	Candidate

[a]E = endangered; T = threatened; T/SA = threatened due to similarity of appearance; EXPN, XN = experimental, nonessential

[b] Experimental, nonessential populations of endangered species (e.g., red wolf) are treated as threatened species on public land, for consultation purposes, and as species proposed for listing on private land.

[c]The gopher tortoise is not listed by the FWS as occurring in St. Lucie County. The core of the species' current distribution in the eastern portion of its range occurs in central and north Florida (76 FR 45130), and FPL has reported the species' occurrence on the site and in the electrical transmission line ROWs.

Source: U.S. Fish and Wildlife Service

Impacts on Aquatic Species

FPL has a mitigation and monitoring program in place for the capture-release and protection of sea turtles that enter the intake canal. NRC has consulted with NMFS since 1982 regarding sea turtle kills, captures, or incidental takes. A 2001 NMFS biological opinion analyzed the effects of the circulating cooling water system on certain sea turtles at St. Lucie (ADAMS Accession No. ML9705150142). The 2001 NMFS biological opinion provides for

limited incidental takes of threatened or endangered sea turtles. Correspondence between FPL, FWS, and NMFS in connection with the 2003 license renewal environmental review indicated that effects to endangered, threatened, or candidate species, including a variety of sea turtles and manatees, would not significantly change as a result of issuing a license renewal for St. Lucie. The NRC reinitiated formal consultation with NMFS in 2005 after the incidental take of a smalltooth sawfish (*Pristis pectinata*). The NRC added sea turtles to the reinitiation of formal consultation with NMFS in 2006 after St. Lucie exceeded the annual incidental take limit for sea turtles. The NRC provided NMFS with a biological assessment in 2007 (ADAMS Accession No. ML071700161) as an update regarding effects on certain sea turtle species up to that time.

By letter dated September 29, 2011, as part of this ongoing consultation, the NRC provided NMFS with information regarding potential impacts to listed aquatic species that would occur as a result of the proposed EPU. The NRC stated that the proposed EPU would increase the temperature of discharged water and the temperature of ocean water within the thermal plume surrounding the discharge point. However, the increase in the temperature would be relatively small, and the multiport diffusers on the discharge pipes would continue to rapidly dilute heated water and limit high temperatures to the mixing zone area specified in the IWFP. The NRC also analyzed the impacts of the higher temperatures on the smalltooth sawfish and various sea turtle species. The NRC concluded that because the smalltooth sawfish has a high thermal tolerance and sea turtles are able to tolerate a wide range of water temperatures, these species are unlikely to be adversely affected by higher water temperatures within the thermal plume at the St. Lucie discharge under EPU conditions. The NRC expects a response from NMFS in response to this ongoing consultation.

Should NMFS determine mitigation measures necessary as part of the ongoing consultation, the NRC could enforce those measures. Furthermore, as described in the

"Aquatic Resource Impacts" section, if the data collected from FPL's thermal monitoring studies indicates a significant degradation to aquatic resources by exceeding Florida Surface Water Quality Standards or is inconsistent with the FCMP, FDEP could enforce additional abatement or mitigation measures to reduce the environmental impacts to acceptable levels.

Therefore, the NRC expects the proposed EPU would not have any significant impact on threatened and endangered aquatic species.

Impacts on Terrestrial Species

Planned construction-related activities associated with the proposed EPU primarily involve changes to existing structures, systems, and components internal to existing buildings and would not involve earth disturbance, with the exception of planned electrical transmission line modifications. As described in the "Terrestrial Resource Impacts" section, electrical transmission line modifications may require truck use within the transmission line ROW. The NRC concluded in SEIS-11 that transmission line maintenance practices would not lower terrestrial habitat quality or cause significant changes in wildlife populations. Because the proposed EPU operations would not result in any significant changes to the expected transmission maintenance activities evaluated for license renewal, the proposed EPU transmission modifications also should have no adverse effect on threatened and endangered terrestrial species. In addition, the transmission modifications should have no adverse effect on the additional species not previously assessed in SEIS-11 listed in the above table.

Traffic and worker activity in the developed parts of the plant site during the combined refueling outages and EPU modifications would be somewhat greater than a normal refueling outage. The NRC concluded in SEIS-11 that the continued operation of St. Lucie was not likely to adversely affect terrestrial wildlife. This conclusion was supported by consultation with FWS (ADAMS Accession No. ML030830467). Despite potential minor and temporary impacts from EPU-related worker activity, the effects from the proposed EPU should not exceed those

potential effects evaluated in SEIS-11 and there should be no adverse effect on threatened or endangered species. In addition, the increased traffic and worker activity should have no adverse effect on the additional species not previously assessed in SEIS-11 listed in the above table..

Impacts on Critical Habitat

The West Indian manatee (*Trichechus manatus*) also has been documented at St. Lucie. Designated critical habitat for the West Indian manatee is located along the Indian River west of Hutchinson Island. No other critical habitat areas for endangered, threatened, or candidate species are located at the St. Lucie site or along the transmission line ROW. The NRC assessed potential impacts on the West Indian manatee from St. Lucie in SEIS-11, and the effects on its critical habitat from the proposed EPU should not exceed those assessed in SEIS-11. The incremental area affected by the increased thermal discharge due to the EPU should have negligible effects on the manatee's habitat. Therefore, the proposed EPU should have no adverse effect on the critical habitat for the West Indian manatee.

Historic and Archaeological Resources Impacts:

Records at the Florida Master File in the Florida Division of Historical Resources identify five known archaeological sites located on or immediately adjacent to the property boundaries for St. Lucie, although no archaeological and historic architectural finds have been recorded on the site. None of these sites is listed on the National Register for Historic Places (NRHP). Sixteen properties are listed on the NRHP in St. Lucie County including one historic district. The Captain Hammond House in White City, approximately 6 mi (10 km) from St. Lucie, is the nearest property listed on the NRHP.

A moderate to high likelihood for the presence of significant prehistoric archaeological remains occurs along Blind Creek and the northern end of the St. Lucie boundary. As

previously discussed, all EPU-related modifications would take place within existing buildings and facilities and the electrical transmission line ROW, which are not located near Blind Creek or the northern FPL property boundary. As discussed in the Land Use Impacts section, prior to any grading or grubbing conducted on previously disturbed areas for the two additional EPU-related parking areas, FPL performed a survey of the areas in accordance with the Site Conditions of Certification and followed best management practices to ensure that any cultural resources were protected. Because no change in ground disturbance or construction-related activities would occur outside of previously disturbed areas and existing electrical transmission line ROW, NRC expects no significant impact from the proposed EPU-related modifications on historic and archaeological resources.

Socioeconomic Impacts:

Potential socioeconomic impacts from the proposed EPU include increased demand for short-term housing, public services, and increased traffic in the region due to the temporary increase in the size of the workforce at St. Lucie required to implement the EPU. The proposed EPU also could generate increased tax revenues for the State and surrounding counties due to increased power generation.

Approximately 800 full-time employees work at St. Lucie. For the recently completed Unit 1 outage, this workforce was augmented by an additional 750 EPU workers on average, with a peak of 1,703 workers. For the mid-cycle Unit 1 outage, FPL estimates no additional staff. For the upcoming Unit 2 outage, FPL estimates an average of 1,058 workers, with a peak of 1,439 workers. Once EPU-related plant modifications have been completed, the size of the refueling outage workforce at St. Lucie would return to normal levels and would remain similar to pre-EPU levels, with no significant increases during future refueling outages. The size of the regular plant operations workforce would be unaffected by the proposed EPU.

NRC expects most of the EPU plant modification workers to relocate temporarily to communities in St. Lucie, Martin, Indian River, and Palm Beach Counties, resulting in short-term increases in the local population along with increased demands for public services and housing. Because plant modification work would be temporary, most workers would stay in available rental homes, apartments, mobile homes, and camper-trailers. The 2010 American Community Survey 1-year estimate for vacant housing units reported 32,056 vacant housing units in St. Lucie County; 18,042 in Martin County; 23,236 in Indian River County; and 147,910 in Palm Beach County that could potentially ease the demand for local rental housing. Therefore, NRC expects a temporary increase in plant employment for a short duration that would have little or no noticeable effect on the availability of housing in the region.

The additional number of refueling outage workers and truck material and equipment deliveries needed to support EPU-related plant modifications would cause short-term service impacts (restricted traffic flow and higher incident rates) on secondary roads in the immediate vicinity of St. Lucie. FPL expects increased traffic volumes necessary to support implementation of the EPU-related modifications during the refueling outage. NRC predicted transportation service impacts for refueling outages at St. Lucie during its license renewal term would be small and would not require mitigation. However, the number of temporary construction workers NRC evaluated for SEIS-11 was less than the number of temporary construction workers required for the proposed EPU. Based on this information and that EPU-related plant modifications would occur during a normal refueling outage, there could be noticeable short-term (during certain hours of the day), level-of-service traffic impacts beyond what is experienced during normal outages. In the past, during periods of high traffic volume (i.e., morning and afternoon shift changes), FPL has attempted to stagger work schedules to minimize any impacts, has established satellite parking areas, and use buses to transport workers on and off the site. Local police officials have also been used to direct traffic entering

and leaving the north and south ends of St. Lucie to minimize level-of-service impacts (ADAMS Accession No. ML12132A067).

St. Lucie currently pays annual real estate property taxes to the St. Lucie County school district, the County Board of Commissioners, the County fire district, and the South Florida Water Management District. The annual amount of future property taxes St. Lucie would pay could take into account the increased value of St. Lucie as a result of the EPU and increased power generation. But due to the short duration of EPU-related plant modification activities, there would be little or no noticeable effect on tax revenues generated by additional temporary workers residing in St. Lucie County.

In total, NRC expects no significant socioeconomic impacts from EPU-related plant modifications and future operations after implementation of the EPU in the vicinity of St. Lucie.

Environmental Justice Impact Analysis:

The environmental justice impact analysis evaluates the potential for disproportionately high and adverse human health and environmental effects on minority and low-income populations that could result from activities associated with the proposed EPU at St. Lucie. Such effects may include human health, biological, cultural, economic, or social impacts. Minority and low-income populations are subsets of the general public residing in the vicinity of St. Lucie, and all are exposed to the same health and environmental effects generated from activities at St. Lucie.

NRC considered the demographic composition of the area within a 50-mi (80.5-km) radius of St. Lucie to determine the location of minority and low-income populations using the U.S. Census Bureau data for 2010 and whether they may be affected by the proposed action.

According to 2010 census data, an estimated 1.3 million people live within a 50-mi (80.5-km) radius of St. Lucie within parts of nine counties. Minority populations within 50 mi

(80.5 km) comprise 37 percent (approximately 466,800 persons). The largest minority group was Hispanic or Latino (of any race) (approximately 223,700 persons or 17.7 percent), followed by Black or African-American (approximately 203,900 persons or 16.2 percent). The 2010 census block groups containing minority populations were concentrated in Gifford (Indian River County), Fort Pierce (St. Lucie County), Pahokee (Palm Beach County near Lake Okeechobee), the agricultural areas around Lake Okeechobee, and Hobe Sound (Martin County).

According to the 2010 American Community Survey 1-Year Estimates data, an average of 10.6 percent of the population (267,000 persons) residing in counties in a 50 mi (80.5 km) of St. Lucie were considered low-income, living below the 2010 federal poverty threshold of $22,113 for a family of four. According to the 2010 American Community Survey 1-Year census estimates, the median household income for Florida was $44,409, while 12.0 percent of families and 16.5 percent of the State population were determined to be living below the Federal poverty threshold. St. Lucie County had a lower median household income average ($38,671) and higher percentages of families (14.1 percent) and individuals (18 percent) living below the poverty threshold, respectively.

Potential impacts to minority and low-income populations would mostly consist of environmental and socioeconomic effects (e.g., noise, dust, traffic, employment, and housing impacts). Radiation doses from plant operations after implementation of the EPU are expected to continue to remain well below regulatory limits.

Noise and dust impacts would be temporary and limited to onsite activities. Minority and low-income populations residing along site access roads could experience increased commuter vehicle traffic during shift changes. Increased demand for inexpensive rental housing during the EPU-related plant modifications could disproportionately affect low-income populations; however, due to the short duration of the EPU-related work and the availability of housing properties, impacts to minority and low-income populations would be of short duration and

limited. According to the 2010 census information, there were approximately 221,244 vacant housing units in St. Lucie County and the surrounding three counties combined.

Based on this information and the analysis of human health and environmental impacts presented in this EA, the proposed EPU would not have disproportionately high and adverse human health and environmental effects on minority and low-income populations residing in the vicinity of St. Lucie.

Nonradiological Cumulative Impacts:

The NRC considered potential cumulative impacts on the environment resulting from the incremental impact of the proposed EPU when added to other past, present, and reasonably foreseeable future actions in the vicinity of St. Lucie. Since the NRC is unaware of any other actions in the vicinity of St. Lucie, the NRC concludes that there are no significant nonradiological cumulative impacts.

Additionally, the NRC concluded that there would be no significant cumulative impacts to air quality, groundwater, threatened and endangered species, or historical and archaeological resources near St. Lucie because the contributory effect of ongoing actions within the region are regulated and monitored through a permitting process (e.g., National Pollutant Discharge Elimination System and 401/404 permits under the Clean Water Act) under State or Federal authority. In these cases, impacts are managed as long as these actions comply with their respective permits and conditions of certification.

Nonradiological Impacts Summary:

As discussed above, the proposed EPU would not result in any significant nonradiological impacts. Table 1 summarizes the nonradiological environmental impacts of the proposed EPU at St. Lucie.

Table 1: Summary of Nonradiological Environmental Impacts

Land Use	No significant impacts on land use conditions and aesthetic resources in the vicinity of St. Lucie.
Air Quality	No significant impacts to air quality from temporary air quality impacts from vehicle emissions related to EPU construction workforce.
Water Use	No significant changes to impacts caused by current operations. No significant impacts on groundwater or surface water resources.
Aquatic Resources	No significant changes to impacts caused by current operation due to impingement, entrainment, and thermal discharges.
Terrestrial Resources	No significant changes to impacts caused by current operations. No significant impacts to terrestrial resources.
Threatened and Endangered Species	No significant changes to impacts caused by current operations. The NRC expects NMFS to issue a biological opinion on sea turtles and the small tooth sawfish in the near future.
Historic and Archaeological Resources	No significant impacts to historic and archaeological resources onsite or in the vicinity of St. Lucie.
Socioeconomics	No significant changes to impacts caused by current operations. No significant socioeconomic impacts from EPU-related temporary increase in workforce.
Environmental Justice	No disproportionately high or adverse human health and environmental effects on minority and low-income populations in the vicinity of St. Lucie.
Cumulative Impacts	No significant changes to impacts caused by current operations.

Radiological Impacts

Radioactive Gaseous and Liquid Effluents and Solid Waste:

St. Lucie uses waste treatment systems to collect, process, recycle, and dispose of gaseous, liquid, and solid wastes that contain radioactive material in a safe and controlled manner within NRC and EPA radiation safety standards. The licensee's evaluation of plant operation under proposed EPU conditions show that no physical changes would be needed to the radioactive gaseous, liquid, or solid waste systems. Therefore, the NRC has determined

that the impact from the proposed EPU on the radioactive gaseous, liquid, and solid waste systems would not be significant.

Radioactive Gaseous Effluents:

The radioactive gaseous system manages radioactive gases generated during the nuclear fission process and is part of the gaseous waste management system. Radioactive gaseous wastes are principally activation gases and fission product radioactive noble gases resulting from process operations, including continuous cleanup of the reactor coolant system, gases used for tank cover gas, and gases collected during venting. The licensee's evaluation determined that implementation of the proposed EPU would not significantly increase the inventory of carrier gases normally processed in the gaseous waste management system, because plant system functions are not changing, and the volume inputs remain the same. The licensee's analysis also showed that the proposed EPU would result in an increase (a bounding maximum of 13.2 percent for all noble gases, particulates, radioiodines, and tritium) in the equilibrium radioactivity in the reactor coolant, which in turn increases the radioactivity in the waste disposal systems and radioactive gases released from the plant.

The licensee's evaluation concluded that the proposed EPU would not change the radioactive gaseous waste system's design function and reliability to safely control and process the waste. The existing equipment and plant procedures that control radioactive releases to the environment will continue to be used to maintain radioactive gaseous releases within the dose limits of 10 CFR 20.1302 and the as low as is reasonably achievable (ALARA) dose objectives in 10 CFR Part 50, Appendix I. Therefore, the NRC has determined that the impact from the proposed EPU on the management of radioactive gaseous effluents would not be significant.

Radioactive Liquid Effluents:

The liquid waste management system collects, processes, and prepares radioactive liquid waste for disposal. Radioactive liquid wastes include liquids from various equipment drains, floor drains, the chemical and volume control system, steam generator blowdown, chemistry laboratory drains, laundry drains, decontamination area drains, and liquids used to transfer solid radioactive waste. The licensee's evaluation shows that the proposed EPU implementation would not significantly increase the inventory of liquid normally processed by the liquid waste management system. This is because the system functions are not changing and the volume inputs remain the same. The proposed EPU would result in an increase in the equilibrium radioactivity in the reactor coolant (12.2 percent), which in turn would impact the concentrations of radioactive nuclides in the waste disposal systems.

The licensee stated that because the composition of the radioactive material in the waste and the volume of radioactive material processed through the system are not expected to significantly change, the current design and operation of the radioactive liquid waste system will accommodate the effects of the proposed EPU. The existing equipment and plant procedures that control radioactive releases to the environment will continue to be used to maintain radioactive liquid releases within the dose limits of 10 CFR 20.1302 and ALARA dose objectives in 10 CFR Part 50, Appendix I. Therefore, the NRC has determined that the impact from the proposed EPU on the management of radioactive liquid effluents would not be significant.

Radioactive Solid Wastes:

Radioactive solid wastes include solids recovered from the reactor coolant systems, solids that come into contact with the radioactive liquids or gases, and solids used in the reactor coolant system operation. The licensee evaluated the potential effects of the proposed EPU on the solid waste management system. The largest volume of radioactive solid waste is low-level radioactive waste, which includes bead resin, spent filters, and dry active waste (DAW) that

result from routine plant operation, refueling outages, and routine maintenance. DAW includes paper, plastic, wood, rubber, glass, floor sweepings, cloth, metal, and other types of waste generated during routine maintenance and outages.

The licensee states that the proposed EPU would not have a significant effect on the generation of radioactive solid waste volume from the primary reactor coolant and secondary side systems because system functions are not changing, and the volume inputs remain consistent with historical generation rates. The waste can be handled by the solid waste management system without modification. The equipment is designed and operated to process the waste into a form that minimizes potential harm to the workers and the environment. Waste processing areas are monitored for radiation, and safety features are in place to ensure worker doses are maintained within regulatory limits. The proposed EPU would not generate a new type of waste or create a new waste stream. Therefore, the NRC has determined that the impact from the proposed EPU on the management of radioactive solid waste would not be significant.

Occupational Radiation Dose at the EPU Power Level:

The licensee stated that the in-plant radiation sources are expected to increase approximately linearly with the proposed increase in core power level of 12.2 percent. For the radiological impact analyses, the licensee conservatively assumed an increase to the licensed thermal power level from 2,700 MWt to 3,030 MWt or 12.2 percent, although the EPU request is for an increase to the licensed thermal power level to 3,020 MWt, or 11.85 percent. To protect the workers, the licensee's radiation protection program monitors radiation levels throughout the plant to establish appropriate work controls, training, temporary shielding, and protective equipment requirements so that worker doses will remain within the dose limits of 10 CFR Part 20 and ALARA.

In addition to the work controls implemented by the radiation protection program, permanent and temporary shielding is used throughout St. Lucie to protect plant personnel against radiation from the reactor and auxiliary systems. The licensee determined that the current shielding design, which uses conservative analytical techniques to establish the shielding requirements, is adequate to offset the increased radiation levels that are expected to occur from the proposed EPU. Based on these findings, the NRC does not expect the proposed EPU to significantly affect radiation levels within the plant and, therefore, there would not be a significant radiological impact to the workers.

Offsite Doses at the EPU Power Level:

The primary sources of offsite dose to members of the public from St. Lucie are radioactive gaseous and liquid effluents. The licensee predicts that because of the EPU, maximum annual total and organ doses would increase by 12.2 percent. This would still be within the NRC's regulatory limits. As previously discussed, operation at the EPU power level will not change the ability of the radioactive gaseous and liquid waste management systems to perform their intended functions. Also, there would be no change to the radiation monitoring system and procedures used to control the release of radioactive effluents in accordance with NRC radiation protection standards in 10 CFR Part 20 and 10 CFR Part 50, Appendix I.

Based on the above, the offsite radiation dose to members of the public would continue to be within NRC and EPA regulatory limits and, therefore, would not be significant.

Spent Nuclear Fuel:

Spent fuel from St. Lucie is stored in the plant's spent fuel pool. St. Lucie is licensed to use uranium-dioxide fuel that has a maximum enrichment of 4.5 percent by weight uranium-235. Approval of the proposed EPU would increase the maximum fuel enrichment to 4.6 percent by

weight uranium-235. The average fuel assembly discharge burnup for the proposed EPU is expected to be limited to 49,000 megawatt days per metric ton uranium (MWd/MTU) with no fuel pins exceeding the maximum fuel rod burnup limit of 62,000 MWd/MTU for Unit 1 and 60,000 MWd/MTU for Unit 2. The FPL's fuel reload design goals will maintain the St. Lucie fuel cycles within the limits bounded by the impacts analyzed in 10 CFR Part 51, Table S-3—Uranium Fuel Cycle Environmental Data and Table S-4—Environmental Impact of Transportation of Fuel and Waste to and From One Light-Water-Cooled Nuclear Power Reactor, as supplemented by NUREG-1437, Volume 1, Addendum1, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Main Report, Section 6.3 – Transportation Table 9.1, Summary of findings on NEPA issues for license renewal of nuclear power plants" (ADAMS Accession No. ML040690720). Therefore, there would be no significant impacts resulting from spent nuclear fuel.

Postulated Design-Basis Accident Doses:

Both the licensee and NRC evaluated postulated design-basis accidents to ensure that St. Lucie can withstand normal and abnormal transients and a broad spectrum of postulated accidents with reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner.

FPL performed analyses according to the Alternative Radiological Source Term methodology, updated with input and assumptions consistent with the proposed EPU. For each design-basis accident, radiological consequence analyses were performed using the guidance in NRC Regulatory Guide 1.183, "Alternative Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors" (ADAMS Accession No. ML003716792). Accident-specific total effective dose equivalent was determined at the exclusion area boundary, at the low-population zone, and in the control room. The analyses also include the evaluation of the

waste gas decay tank rupture event. FPL concluded that the calculated doses meet the acceptance criteria specified in 10 CFR 50.67 and 10 CFR Part 50, Appendix A, General Design Criterion 19.

NRC is evaluating FPL's EPU applications to independently determine whether they are acceptable to approve. The results of the NRC evaluation and conclusion will be documented in a Safety Evaluation Report that will be publicly available. The NRC will only approve the proposed EPU if the radiological consequences of design-basis accidents will not have a significant impact.

Radiological Cumulative Impacts:

The radiological dose limits for protection of the public and workers have been developed by the NRC and EPA to address the cumulative impact of acute and long-term exposure to radiation and radioactive material. These dose limits are codified in 10 CFR Part 20 and 40 CFR Part 190.

The cumulative radiation doses to the public and workers are required to be within the regulations cited above. The annual public dose limit of 25 millirem (0.25 millisieverts) in 40 CFR Part 190 applies to all reactors that may be on a site and includes any other nearby nuclear power reactor facilities. No other nuclear power reactor or uranium fuel cycle facility is located near St. Lucie. The NRC staff reviewed several years of radiation dose data contained in the FPL's annual radioactive effluent release reports for St. Lucie. The data demonstrate that the dose to members of the public from radioactive effluents is well within the limits of 10 CFR Part 20 and 40 CFR Part 190. To evaluate the projected dose at the EPU power level for St. Lucie, the NRC increased the actual dose data contained in the reports by 12 percent. The projected doses remained well within regulatory limits. Therefore, the NRC concludes that there would not be a significant cumulative radiological impact to members of the public from

increased radioactive effluents from St. Lucie at the proposed EPU power level.

As previously discussed, FPL has a radiation protection program that maintains worker doses within the dose limits in 10 CFR Part 20 during all phases of St. Lucie operations. The NRC expects continued compliance with regulatory dose limits during operation at the proposed EPU power level. Therefore, the NRC staff concludes that operation of St. Lucie at the proposed EPU levels would not result in a significant impact to worker cumulative radiological dose.

Radiological Impacts Summary:

As discussed above, the proposed EPU would not result in any significant radiological impacts. Table 2 summarizes the radiological environmental impacts of the proposed EPU at St. Lucie.

Table 2. Summary of Radiological Environmental Impacts

Radioactive Gaseous Effluents	Amount of additional radioactive gaseous effluents generated would be handled by the existing system.
Radioactive Liquid Effluents	Amount of additional radioactive liquid effluents generated would be handled by the existing system.
Radioactive Solid Waste	Amount of additional radioactive solid waste generated would be handled by the existing system.
Occupational Radiation Doses	Occupational doses would continue to be maintained within NRC limits.
Offsite Radiation Doses	Radiation doses to members of the public would remain below NRC and EPA radiation protection standards.
Spent Nuclear Fuel	The spent fuel characteristics will remain within the bounding criteria used in the impact analysis in 10 CFR Part 51, Table S-3 and Table S-4.
Postulated Design-Basis Accident Doses	Calculated doses for postulated design-basis accidents would remain within NRC limits.
Cumulative Radiological	Radiation doses to the public and plant workers would remain below NRC and EPA radiation protection standards.

Alternatives to the Proposed Action:

As an alternative to the proposed action, the NRC considered denial of the proposed EPU (i.e., the "no-action" alternative). Denial of the application would result in no change in the current environmental impacts. However, if the EPU was not approved for St. Lucie, other agencies and electric power organizations may be required to pursue other means, such as fossil fuel or alternative fuel power generation, in order to provide electric generation capacity to offset future demand. Construction and operation of such a fossil-fueled or alternative-fueled facility could result in impacts in air quality, land use, and waste management greater than those identified for the proposed EPU at St. Lucie. Furthermore, the proposed EPU does not involve environmental impacts that are significantly different from those originally indentified in the St. Lucie Units 1 and 2 FESs and SEIS-11.

Alternative Use of Resources:

This action does not involve the use of any different resources than those previously considered in the FESs or SEIS-11.

Agencies and Persons Consulted:

Based upon a letter dated May 2, 2003, from Michael N. Stephens of the Florida Department of Health, Bureau of Radiation Control, to Brenda L. Mozafari, Senior Project Manager, U.S. Nuclear Regulatory Commission, the State of Florida does not desire notification of issuance of license amendments. Therefore, the State of Florida was not consulted. Consultations held with NMFS, FDEP, and FDCA are discussed and documented above.

III. **Finding of No Significant Impact**

Based on the details provided in the EA, the NRC concludes that granting the proposed EPU license amendment is not expected to cause impacts significantly greater

than current operations. The proposed action implementing the EPU for St. Lucie will not have a significant effect on the quality of the human environment because no significant permanent changes are involved, and the temporary impacts are within previously disturbed areas at the site and within the capacity of the plant systems. Accordingly, the NRC has determined it is not necessary to prepare an environmental impact statement for the proposed action.

Dated at Rockville, Maryland, this 25th day of June 2012.

FOR THE NUCLEAR REGULATORY COMMISSION

Tracy J. Orf, Project Manager
Plant Licensing Branch 2-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Summary of Comments on the Draft Environmental Assessment and Draft Finding of No Significant Impact

Background:

The NRC staff published a notice in the *Federal Register* requesting public review and comment on the draft EA and draft FONSI on January 6, 2012 (77 FR 813), and established February 6, 2012, as the deadline for submitting public comments. The NRC received comments and supplemental information from FPL and from a member of the public. The correspondence associated with the comments is provided in ADAMS and available as a matter of public record. Table 1 is a summary of each correspondence, including the name and affiliation of each commenter, a document letter code, the ADAMS accession number, and the number of comments.

In addition, the NRC staff made editorial changes to the draft EA, specifically the Threatened and Endangered Species section. These editorial changes did not change the conclusion of the FONSI.

Table 1

Comments Received on the St. Lucie EPU Draft EA and Draft FONSI

Last Name	First Name	Affiliation	Document Letter	ADAMS Accession Number	Number of Comments
Anderson	Richard L.	Florida Power & Light	A	ML12037A063	6
Johnson	Edward W.	Self	B	ML12044A127	8

Comment Review:

The NRC staff reviewed each comment letter and all comments related to similar issues and grouped topics together. This attachment presents the comments, or summaries of comments, along with the NRC staff's responses. When comments have resulted in a modification to the draft EA, those changes are noted in the NRC staff's response.

Major Issues and Topics of Concern:

The staff grouped comments into the following categories: supplemental information provided to the NRC, Aquatic Resources, and Nuclear Safety (see Table 2). Next to each set of grouped comments is a four-component code corresponding to: the power plant ("SL" for St. Lucie); the document letter (A – B) that corresponds to the document submitter from Table 1; the number of the comment from that particular commenter; and the two-letter category comment code from Table 2.

Table 2

Draft EA Comment Categories and Comment Codes

Comment Category	Comment Code
Supplemental Information	SI
Aquatic Resources	AR
Nuclear Safety	NS

Supplemental Information (SI)

Comment: SL-A-1-AR

In a January 30, 2012, letter to the NRC, FPL suggested changes to the draft EA based on supplemental information provided in its letter to NRC dated January 11, 2011 (ADAMS Accession No. ML110210023). The draft EA indicated that the predicted discharge temperature increase resulting from the St. Lucie EPU would be 2 °F (1.1 °C) above the current discharge temperature. FPL clarified that the predicted temperature increase would be 3 °F (1.7 °C) and that FPL had requested from FDEP a 2 °F (1.1 °C) increase to the heated water discharge temperature limit, from 113 °F (45 °C) before the EPU to 115 °F (46.1 °C) to accoubnt for the 3 °F (1.7 °C) increase after EPU completion at Units 1 and 2.

NRC Response:

The NRC staff reviewed the information and incorporated the change from a 2 °F (1.1 °C) temperature increase to a 3 °F (1.7 °C) temperature increase. Because the discharge temperature limit did not change, consideration of the above comment does not change the conclusion of the FONSI.

Comment: SL-A-2-SI

FPL provided new information on the number of additional workers expected during the EPU-related outages. The draft EA stated that an additional 1,000 construction workers would be needed during each outage, with a potential peak of 1,400 additional construction workers. FPL revised this estimate in its comment to an average of 2,100 workers per outage, with a peak of 3,000. This comment prompted NRC to submit a request for additional information from

FPL on April 18, 2012. FPL's response to the request was provided on May 2, 2012 (ADAMS Accession No. ML12132A067). In their response, FPL clarified that three of the four necessary EPU-related outages had already occurred, with an additional outage planned for the fall of 2012 for Unit 2. For the recently completed outage, the average number of additional workers was 750, with a peak of 1,703. The upcoming outage expects an average of 1,058 additional workers, with a peak of 1,439.

FPL provided information requested by NRC in the areas of land use, traffic impacts, air quality impacts, terrestrial impacts, and cultural impacts. For land use impacts, FPL provided more detailed information on the two parking lots that were created for the EPU-related outages, including that surveys were conducted and best management practices employed to minimize impacts on threatened and endangered species, terrestrial resources, and cultural resources. For traffic impacts, FPL provided the transportation analysis it used to determine impact significance, as well as examples of how FPL has mitigated traffic impacts in the past, which include shift staggering, shuttling workers from offsite parking areas, and employing local police to direct traffic onsite during peak conditions. For air quality impacts, FPL provided an assessment of the potential impacts of an additional 1,400 to 3,000 construction workers, including the results of a traffic study and calculations for the amount of fugitive particulate matter emissions expected to result from the increased workforce. FPL determined that the workforce increase would not trigger air quality violations under the Clean Air Act and would remain below FDEP regulations for unpermitted emissions.

NRC Response:

The NRC staff reviewed this additional information and determined that the additional workers during EPU-related outages in conjunction with the mitigating strategies that FPL implemented to account for the increase have no significant impacts in the areas of socioeconomic, terrestrial resource, air quality, and land use. The NRC made the necessary changes to the draft EA in the areas of socioeconomic, terrestrial resource, air quality, and land use impacts. Consideration of the above comment does not change the conclusion of the FONSI.

Comment: SL-A-3-SI

In a January 30, 2012, letter to the NRC, FPL suggested changes to the draft EA based on supplemental information provided as Attachment 2, "St. Lucie Plant Water Usage 2004—2009" (ADAMS Accession No. ML12037A063). The draft EA stated that the plant uses approximately 131,500 gallons (498 m^3) of water per day. The draft EA did not specify that this was a per unit withdrawal rate. FPL provided information based on plant records developed from FPL's Ft. Pierce Utilities water bills for 2004 to 2009, showing that the approximate water usage is 154,800 gallons per unit per day (586 m^3), or a combined average water usage rate of approximately 309,565 gallons (1172 m^3).

NRC Response:

The NRC staff reviewed the information and incorporated the change to the draft EA in the area of Water Use Impacts, Groundwater from 131,500 gallons (497,782 L) of water per day to 309,565 gallons (1,171,831 L) per day, or approximately 154,800 gallons (585,981 L) per unit per day. Under the EPU, FPL does not expect to significantly change the amount of freshwater

currently used or its supply source. Consideration of the above comment does not change the conclusion of the FONSI.

Comment: SL-A-4-SI

In a January 30, 2012, letter to the NRC, FPL suggested changes to the draft EA based on supplemental information provided in its letter to NRC dated January 11, 2011 (ADAMS Accession No. ML110210023). The draft EA stated that FDEP had issued a temporary variance for a temperature increase of heated water discharge from 113 °F (45 °C) before the EPU to 115 °F (46.1 °C) after EPU completion at Units 1 and 2. FPL clarified that the FDEP's change to the St. Lucie Plant IWFP was a modification, not a temporary variance. The permit modification was issued on December 21, 2010 and was accompanied by an Administrative Order requiring FPL to perform pre-EPU biological monitoring and a minimum of two years of post-EPU thermal and biological monitoring in the vicinity of St. Lucie.

NRC Response:

The NRC staff reviewed the information and incorporated the change from referring to the FDEP change as a temporary variance to a permit modification. Consideration of the above comment does not change the conclusion of the FONSI.

Aquatic Resources (AR)

Comment: SL-A-5-AR

FPL disagreed with a statement in the draft EA that the proposed increase in temperature after EPU implementation would exceed Florida Surface Water Quality Standards. FPL explained that, though St. Lucie's heated water discharge currently exceeds the Thermal Surface Water Criteria for open waters, FPL was granted a zone of mixing variance by FDEP. FDEP also granted FPL an increase of 2 °F (1.1 °C) in the instantaneous discharge temperature limit in the IWFP modification following EPU implementation. FPL stated that it performs biological and thermal monitoring studies in accordance with the IWFP, which demonstrate its continued compliance with the State's thermal standards following EPU implementation.

NRC Response:

The NRC staff reviewed the information and incorporated the change into the final EA. While the draft EA stated that the increase in temperature after EPU implementation would exceed Florida Surface Water Quality Standards, the final EA states that EPU implementation will continue to exceed Thermal Surface Water Criteria established by FDEP, but that FPL will continue to meet its FDEP mixing zone variance limits and will continue to perform studies to assess any potential thermal impacts. Consideration of the above comment does not change the conclusion of the FONSI.

Comment: SL-B-2-AR

Commenter is concerned that St. Lucie already withdraws approximately 1 million gallons per second and that this withdrawal amount should increase another 12% if a 12% power increase is permitted. The commenter states that withdrawal of an additional 100,000 gallons per second should be permitted by the NRC to avoid a temperature increase to the plant's heated water discharge.

NRC Response:

St. Lucie's thermal discharge limits are permitted and maintained by FDEP. NRC has no regulatory authority over thermal discharge limits or water withdrawal permits. Therefore, no change was made to the final EA based on this comment.

Comment: SL-B-3-AR

The commenter is concerned that the applicant's statement that the seawater temperature beyond the plant's mixing zone of 95 °F (35 °C) is incorrect. The commenter would like verification of this temperature and provides information that the average water temperature in that area should be closer to an ambient temperature of 79 °F (26.1 °C). The commenter challenges the applicant's claim of an ambient water temperature of 95 °F (35 °C) and believes that an additional temperature increase after EPU implementation will have detrimental effects on aquatic resources.

NRC Response:

As discussed in the "Aquatic Resource Impacts" section, a thermal discharge study that was conducted for the proposed EPU predicts no increase in temperature higher than 96 °F (35.5 °C) within 6 ft (1.8 m) of the bottom of the ocean floor and within 24 ft (7.3 m) from the ocean surface as a result of heated water discharged from the multiport diffuser. The same study also predicts that heated water discharged from the "Y" diffuser would not increase the ocean water temperature higher than 96 °F (35.5 °C) within 2 ft (0.6 m) of the bottom of the ocean floor and within 25 ft (17 m) from the ocean surface. Based on this analysis, surface water temperature would remain below 94 °F (34.4 °C). Thermal studies conducted for St. Lucie prior to its operation and summarized in SEIS-11 predicted there would be minimal

impacts to aquatic biota from diffuser discharges that result in a surface temperature less than 97 °F (36.1 °C). Therefore, no change was made to the final EA based on this comment.

Comment: SL-B-4-AR

The commenter is concerned about the effects of thermal discharge temperatures and chemical treatment on microscopic ocean organisms.

NRC Response:

St. Lucie's thermal discharge limits are permitted and maintained by FDEP. NRC has no regulatory authority over thermal discharge limits or water withdrawal permits. St. Lucie does inject chlorine in the form of sodium hypochlorate into seawater upstream of the intake cooling water system to control microorganisms, but these chemical discharges are also regulated by FDEP. After EPU implementation, these chemical discharges are not expected to exceed IWFP limitations and will continue to be monitored and regulated by FDEP. Therefore, no change was made to the final EA based on this comment.

Comment: SL-B-6-AR

Commenter provides information on the August 2011 jellyfish incursion incident at St. Lucie and states that the incident was not reported publicly until December 2011. Commenter wants NRC to increase the timely reporting of such events to allow precautionary safety awareness and evacuation to proceed.

NRC Response:

NRC was informed about the jellyfish intrusion incident, which occurred between August 20, 2011, and August 24, 2011, via letter from FPL on September 20, 2011. The letter was submitted as part of St. Lucie's Environmental Protection Plan as an "Unusual or Important Environmental Event – Reportable Fish Kill." A License Event Report was also submitted by FPL to NRC describing the Unit 1 manual reactor trip that resulted from the jellyfish influx. Both are publicly available and can be accessed in ADAMS (Accession Nos. ML11270A098 and ML11301A071, respectively). Evacuation precautions were not necessary during this incident because FPL manually shut down the plant until the jellyfish incursion could be resolved. Therefore, no change was made to the final EA based on this comment. (For a more detailed discussion on this incident, the commenter is referred to Section 5.2 and Section 5.4.4 of the NRC's Essential Fish Habitat Assessment, published in February 2012 (ADAMS Accession No. ML12053A345)).

Comment: SL-B-7-AR

The commenter is concerned about the potentially harmful effects of once-through cooling systems, specifically the effects of entrainment and impingement on marine life.

NRC Response:

During St. Lucie's license renewal review, the NRC assessed the environmental impacts of entrainment, impingement, and heat shock from St. Lucie's once-through cooling system in Sections 4.1.1, 4.1.2, and 4.1.3 of the SEIS-11 (ADAMS Accession No. ML0314104). The NRC does not expect that implementation of the EPU would increase the impacts of entrainment, impingement, and heat shock at St. Lucie beyond the small levels it found for current operation. Therefore, NRC made no change to the final EA based on this comment.

Comment: SL-B-8-AR

Commenter is concerned that smaller fish and organisms that are entrained by the cooling system may be scalded before being discharged into the waterway, or that those that are pulverized in the system will be released into the water, forming a sediment cloud that will block light from the ocean floor and cause a loss of oxygen.

NRC Response:

The proposed EPU will not result in an increase in the amount or rate of water withdrawn from or discharged to the Atlantic Ocean, so the impacts of entrainment will remain consistent with current operating levels. Also, the NRC staff always assumes a 100% mortality rate for any organisms that are entrained by the cooling system, and determined that implementation of the EPU would not increase the level of entrainment mortality rate or level of impact. The NRC concluded that scouring caused by discharged cooling water would have a small level of impact at St. Lucie, as discussed in Sections 4.1 and 4.1.3 of SEIS-11. The NRC also concluded that low dissolved oxygen in the discharged water would have a small level of impact, as discussed in Section 4.1 of SEIS-11. Therefore, the NRC made no change to the final EA based on this comment.

Nuclear Safety (NS)

Comments: SL-B-1-NS; SL-B-5-NS

Commenter is concerned about safety issues at the plant. Most notably, his comments are related to the age of the reactors and safety concerns over permitting a 12% power increase on reactors of that age. The commenter is concerned that an increase in heat generated would

potentially put stress on the internal components of the plant due to the age of the components and increase risk of failure.

NRC Response:

The St. Lucie Units 1 and 2 were granted, consistent with NRC regulations, 40-year operating licenses in 1976 and 1983, respectively. The NRC requires licensees to test, monitor, and inspect the condition of safety equipment and to maintain that equipment in reliable operating condition over the operating life of the plant. The NRC also requires licensees to continually correct deficiencies that could affect plant safety (e.g., leaking valves, degraded or failed components due to aging or operational events). Over the years, FPL has also upgraded equipment or installed new equipment to replace or supplement original systems. The testing, monitoring, inspection, maintenance, and replacement of plant equipment provide reasonable assurance that this equipment will perform its intended safety functions during the 40-year license period. This conclusion applies both to operations under the current license and operations under EPU conditions.

In 2003, the NRC approved renewal of the operating licenses for St. Lucie, Units 1 and 2 for a period of 20 additional years, extending the operating licenses to 2036 and 2043, respectively. The safety evaluation report documenting the staff's technical review can be found in NUREG-1779, "Safety Evaluation Report Related to the License Renewal of the St. Lucie, Units 1 and 2" (ADAMS Accession No. ML031890043). The NRC staff's review concluded that the licensee's management of the effects of aging on the functionality of structures and components met the NRC's established requirements (described in 10 CFR Part 54).

The NRC's safety regulations are based on the Atomic Energy Act of 1954, as amended, and require a finding of reasonable assurance that the activities authorized by an operating license (or an amendment thereto) can be conducted without endangering the health and safety of the public, and that such activities will be conducted in compliance with the NRC's regulations. With respect to the proposed EPU, the NRC will likewise decide—based on the NRC staff's safety evaluation—whether there is reasonable assurance that the health and safety of the public will not be endangered by operation under the proposed EPU conditions and whether the authorized activities will be conducted in compliance with the NRC's regulations. The NRC will document its review of the effect of the EPU on aging management programs at St. Lucie in the relevant subsections of its safety evaluation.

Therefore, no change was made to the final EA based on these comments.

June 25, 2012

Mr. Mano Nazar
Executive Vice President and
Chief Nuclear Officer
Florida Power and Light Company
P.O. Box 14000
Juno Beach, Florida 33408-0420

SUBJECT: ST. LUCIE PLANT, UNITS 1 AND 2—ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT RELATED TO THE PROPOSED EXTENDED POWER UPRATE (TAC NOS. ME5091 AND ME5843)

Dear Mr. Nazar:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your applications for amendments dated November 22, 2010, for St. Lucie Unit 1, and February 23, 2011, for St. Lucie Unit 2, and subsequent supplements. The proposed amendments would authorize increasing the licensed core power levels for St. Lucie Units 1 and 2 from 2700 megawatts thermal (MWt) to 3020 MWt. The increase in core thermal power will be approximately 12 percent, including a 10-percent power uprate and a 1.7-percent measurement uncertainty recapture, over the current licensed core thermal power level and is categorized as an Extended Power Uprate.

The assessment is being forwarded to the Office of the Federal Register for publication. If you have any questions, please contact me by phone at 301-415-2788 or by email at tracy.orf@nrc.gov.

Sincerely,

/RA/

Tracy J. Orf, Project Manager
Plant Licensing Branch 2-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-335 and 50-389

Enclosure:
Environmental Assessment

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ADAMS Accession Nos. PKG ML12165A415 Letter ML12165A511 EA FRN ML12165A512

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