# United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
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October 4, 2002

Pao-Tsin Kuo
Licence Renewal and Environmental Impacts
Division of Regulatory Improvement Program
Office of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Service Log No.: 4-1-02-I-1959
Application No.: MB3407 and MB3401
Dated: July 24, 2002
Applicant: Florida Power and Light
County: St. Lucie

Dear Mr. Kuo

The Fish and Wildlife Service (Service) has reviewed the plans, maps, and other information provided by the Nuclear Regulatory Commission (NRC) for the project referenced above, including the conservation measures proposed to reduce adverse effects to Federally-listed species and their designated critical habitat in St. Lucie County, Florida. These comments are provided under the provisions of section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

## PROJECT DESCRIPTION

The proposed action is the granting of a renewal of the current operating licenses for St. Lucie Units 1 and 2 that would allow these units to continue operations for an additional 20 years beyond their current license terms. The license for Unit 1 is currently set to expire in March 2016, and the Unit 2 License will expire in April 2023. The proposed license renewal will, therefore, extend the license terms for Unit 1 until 2036 and for Unit 2 until 2043. The extension of the license terms will result in the continuation of the operation and maintenance of the nuclear power reactors, the cooling water intake and discharge structures and canals, and support facilities at the plant site. No changes are expected in terms of ecological or environmental impacts of the present operations. In addition, the renewal of the operating license is not anticipated to require any significant new construction or modification of existing terrestrial or aquatic habitats. The project is located 4.5 miles east of the city of Port St. Lucie on South Hutchinson Island, at 27° 21' 24" North latitude and 80° 14' 43" West longitude, St. Lucie County, Florida. The St. Lucie site occupies approximately 457 ha (1,130 ac), of which

B/52

approximately one-third has been significantly modified for the construction and operation of the power production reactors, intake and discharge canals, switchyard, and support facilities.

If the license renewal is granted, the transmission lines and corridor that connect St. Lucie Units 1 and 2 to the regional transmission grid will continue to be operated and maintained as they have for the last 25 years. Florida Power and Light (FPL) maintains the Midway Corridor using a combination of trimming, mowing, and herbicide application. When required, FPL trims trees at a height of 22.5 m (14 ft) to maintain clearances below the conductors. Tree trimming is typically needed only at the midspan of the transmission lines between the towers. In open areas, FPL usually follows a five-year mowing cycle. Herbicides are used both for spot treatment of individual trees and occasionally as broadcast applications to control exotic grasses. FPL uses only non-restricted use herbicides, which are applied under the supervision of licensed pesticide applicators. FPL uses a computer database to prepare management prescriptions for each section of transmission line corridor that incorporates known management concerns and environmental sensitivities, including rare species.

## THREATENED AND ENDANGERED SPECIES

There are 14 species listed as threatened or endangered under the ESA within St. Lucie County. There are no species currently proposed for formal listing or considered candidates for listing in St. Lucie County. The NRC has determined that the proposed action will either have "no effect" or is "not likely to adversely affect" the endangered or threatened species in the vicinity of the St. Lucie plant and associated transmission corridor. The Service concurs with NRC's determinations for the following species within the action area of the proposed relicensing:

1. *Drymarchon corias couperi*, Eastern indigo snake

The eastern indigo snake has not been observed on the St. Lucie site or along the transmission corridor, but individuals have been observed elsewhere on Hutchinson Island (FPL 2001). Presumably, the St. Lucie plant site and portions of the St. Lucie to Midway transmission corridor constitute suitable habitat, and the staff has chosen to assume that the eastern indigo snake is present in the vicinity of the site and transmission corridor. The proposed extension of the operating license would not result in any changes to the habitat at the plant site or along the transmission corridor, and in some ways may act to preserve areas of suitable habitat from other forms of development. Additionally, FPL staff and corridor maintenance workers are trained to recognize and avoid the eastern indigo snake, and FPL incorporates sensitive species protection in its corridor maintenance specifications. Therefore, although the eastern indigo snake is likely to be present within the project area, the NRC staff has determined that the continued operation of St. Lucie Units 1 and 2 is not likely to adversely affect the eastern indigo snake.

2. *Alligator mississippiensis*, American alligator

Although American alligators are common in freshwater wetland areas throughout South Florida, they are not present at the St. Lucie plant site. Alligators may occur in the freshwater marsh areas and along the St. Lucie River, west of the plant site, within or near the transmission corridor. However, the proposed activities (continued transmission corridor maintenance) will not result in detectable modifications of these freshwater systems and will not alter the habitat quality of the surrounding areas. Therefore, the NRC staff has determined that the proposed license renewal would have no effect on American alligators.

3. *Aphelocoma coerulescens*, Florida scrub-jay

The habitat on the plant site does not include Type I or Type II habitat typical of the Florida scrub-jay requirements, and no Florida scrub-jays have been documented on the plant site. Scrub-jays have been observed beneath the transmission lines in the vicinity of the Florida East Coast Railroad, and there is a narrow band of vegetation between the Indian River and the Savannas State Preserve that is suitable scrub-jay habitat. There have been other periodic sightings of Florida scrub-jays within the coastal scrub areas along the west shore of the Indian River within approximately 3 km (1.8 miles) of the St. Lucie transmission line (University of Florida 2002). In general, the maintenance practices used by the applicant within the St. Lucie to Midway corridor (i.e., selective removal of larger trees) may help to maintain the open scrub habitat required by the scrub-jays. The applicant has indicated that it has no plans to change the way that this or any other portion of the transmission corridor is maintained. The FPL transmission corridor database clearly indicates that the strip between the Indian River and the Savannas State Preserve is suitable habitat for Florida scrub-jays, and corridor maintenance is planned and performed with this in mind. Therefore, the NRC staff has determined that the proposed license renewal for St. Lucie Units 1 and 2 is not likely to adversely affect Florida scrub-jays within the transmission corridor.

4. *Haliaeetus leucocephalus*, Bald eagle

Bald eagles are known to nest approximately 2 km (1.2 mi) south of the St. Lucie transmission corridor. Bald eagles are occasionally observed along the Indian River and near the St. Lucie plant site, but they are not regular inhabitants of these areas. According to the Southeast Region bald eagle habitat management guidelines (FWS 1987), many activities should be restricted within 450 m (1,500 ft) of a nest site, but, in general, activities beyond 1.6 km (1 mi) from the nest site will not adversely affect nesting eagles. Therefore, the NRC staff has determined that the proposed action will have no effect on bald eagles.

5. *Polyborus plancus audubonii*, Audubon's crested caracara

The Audubon's crested caracara has not been documented on the plant site. Although individuals may be present in the vicinity of the transmission corridor, there are no known observations in the area. They are primarily found in the western portions of St. Lucie County. Field surveys (Foster Wheeler 2001) indicated that, at best, marginal habitat was present within the transmission corridor. Therefore, the NRC staff has determined that the proposed license renewal would have no effect on the Audubon's crested caracara.

6. *Mycteria americana*, Wood stork

Wood storks are observed occasionally in the vicinity of the St. Lucie plant and the transmission corridor. However, the nearest wood stork rookery is 8.5 miles southwest of the plant site and 6.0 miles south of the transmission corridor. The maintenance of the plant site and transmission corridor will not adversely modify the swamps, marshes, or other freshwater habitats, nor significantly alter the surrounding upland habitats. There have been no reported mortalities of wood storks related to the operation or maintenance of the St. Lucie transmission line. Therefore, the NRC staff has determined that the proposed license renewal for St. Lucie Units 1 and 2 will have no effect on the wood stork.

7. *Rostrhamus sociabilis*, Everglades snail kite

Snail kites have been occasionally observed within several kilometers of the transmission corridor (University of Florida 2002), and it is possible that they may use the scattered freshwater marshes in the vicinity for foraging. However, there is no indication that this species is a regular inhabitant in the vicinity of the transmission corridor, and it was not observed during field surveys of the corridor (Foster Wheeler 2001). Therefore, the staff has determined that the proposed license renewal for St. Lucie Units 1 and 2 will have no effect on the snail kite.

8. *Picoides borealis*, Red-cockaded woodpecker

The status of red-cockaded woodpeckers in south Florida, including St. Lucie County, is not well known (Service 1999), but because of the species' requirements for old-growth pine-dominated forests, they are highly unlikely to occur at or near the St. Lucie plant, and suitable habitat is very limited or absent from the transmission corridor (Foster Wheeler 2001) as well. Therefore, the NRC staff has determined that the proposed license renewal action will have no effect on the red-cockaded woodpecker.

9. *Peromyscus polionotus niveiventris*, Southeastern beach mouse

Southeastern beach mice were captured during a survey conducted in the mid to late 1980's from St. Lucie County at Pepper Beach County Park, Fort Pierce Inlet State Recreation Area, and

Surfside Beach State Park, all located at least 13 km (8.1 mi) north of the St. Lucie plant. However, more recent surveys have failed to collect any southeastern beach mice at the historic population sites within St. Lucie County, and the beach mouse may have been extirpated from the county. There have not been any recent surveys for this species at the St. Lucie plant site; however, if it were present, the site would certainly function as a refugium for this species, because the vegetation on the lee sides of the coastal dunes is relatively undisturbed, and human interference in this area is minimal with limited public access to the beach. Because the species is not known from the site and no indication that the species is present at the plant site or along the transmission corridor, the NRC staff has determined that the proposed license renewal will have no effect on the southeastern beach mouse.

10. *Trichechus manatus*, West Indian manatee

The West Indian manatee inhabits the Indian River Lagoon and Atlantic coastal waters off Hutchinson Island. Although preferred habitats are in the Indian River Lagoon and other inland waterways where food sources are abundant, they do occasionally travel up and down the coast near shore. The entire inland section of water known as the Indian River is designated as critical habitat for the manatee (50 CFR Part 17.108). Water is not withdrawn nor discharged to the Indian River for normal operations at St. Lucie Units 1 and 2, and there is little attached vegetation in the near-oceanshore environment adjacent to the St. Lucie plant. Manatees are present in the area known as Big Mud Creek within the plant boundaries. This area has been closed to public access since September 2001 due to NRC security concerns. Any boats that are operated within Big Mud Creek are required to travel at idle-speed and produce no wake.

There have been five occasions when manatees have entered in the intake canal. During 1991, two individuals entered the intake canal and FPL coordinated the capture with the Service and Florida Fish and Wildlife Conservation Commission (FWC). After capture, the animals underwent evaluation and rehabilitation and were released to the wild. Except for the first manatee, the animals were removed from the canal within a day of each first sighting. Two of these animals were taken to rehabilitation facilities prior to their release. One was treated for deep propeller wounds that it incurred prior to entering the canal and one appeared to be a small calf separated from its mother. None of the manatees appeared to have been harmed or to have died as a result of entering the intake canal. FPL procedures require coordination with the FWC on the capture and evaluation of entrapped manatees. FPL assists the FWC, as needed, in transporting ill or injured animals to approved rehabilitation facilities, and in releasing animals that have entered the intake canal back to the wild (Ecological Associates 2001). The last manatee to enter the intake canal from the ocean through the velocity cap was in December 1997.

In addition to potential impacts from the water intake system, the attraction to or contact with the warm waters discharged from the plant need to be considered. The discharge canal transports the heated cooling water to two discharge pipes. The pipes transport water beneath the beach and dune system back to the Atlantic Ocean. The pipes extend about 450 m (1,500 ft) and

1,036 m (3,400 ft) offshore, and terminate in a two-port "Y" diffuser. The discharge of heated water through the Y-port and multiport diffusers ensure distribution over a wide area and rapid and efficient mixing with ambient waters (FPL 1996, Foster Wheeler 2000). Modeling studies presented by the Atomic Energy Commission (AEC) and NRC in the operating stage Final Environmental Statements indicate that the areas of the thermal plumes to the 1.1 °C (2 °F) isotherm from the St. Lucie Units 1 and 2 diffusers under typical conditions would be about 72.8 hectares (180 acres) and 70.8 hectares (175 acres), respectively (AEC 1973, NRC 1982). Considering that some of the manatee-captures have occurred during summer months, there seems to be no compelling evidence to infer that manatees congregate at, or are attracted to, the warm water discharges of the St. Lucie plant.

Direct effects of the St. Lucie plants on manatees in the Indian River Lagoon or Big Mud Creek are essentially non-existent, and access and boat speeds within Big Mud Creek are controlled to prevent adverse impacts to the manatees.

FPL has worked with the appropriate state and federal agencies to develop a system to detect and remove the infrequent manatees that may find their way into the intake canals. These procedures appear to adequately protect those manatees that enter the cooling canal system. Therefore, the NRC has determined that the proposed renewal of the operating licenses for St. Lucie Units 1 and 2 is not likely to adversely affect the West Indian manatee.

11. *Asimina tetramera*, Four-petal pawpaw

The four petal pawpaw occurs in sand pine scrub within the coastal dune system. It's historic range has been greatly reduced by habitat conversion, and it is now known from few locations between Palm Beach Gardens and the Savannas State Preserve in Martin County, and a few locations in northern St. Lucie County (Service 1999). This species is not likely to be found at the St. Lucie site, and along the transmission corridor, it would only be found near the west shore of the Indian River where suitable habitat is present. Although field surveys did not detect the four petal pawpaw within the transmission corridor (Foster Wheeler 2001), there appears to be a reasonable potential that this species could occur within or very near the transmission corridor on the west edge of the Indian River. However, because this area is maintained using minimal disturbance because of other known ecological sensitivities, the NRC has determined that the proposed license renewal for St. Lucie Units 1 and 2 is not likely to adversely affect the four petal pawpaw.

12. *Dicerandra immaculate*, Lakela's mint

Lakela's mint is a small aromatic shrub that inhabits scrub areas of the Atlantic coastal ridge (Service 1999). This species is currently known from approximately six sites between Fort Pierce and Vero Beach, and at Hobe Sound National Wildlife Refuge, where it was introduced in 1991 and 1992 (Service 1999). Although suitable habitat exists in the vicinity of

the transmission corridor at the western shore of the Indian River, none were found during field surveys (Foster Wheeler 2001). Because all of the natural populations are found at least eight to ten miles from the transmission corridor, it is unlikely that individuals would be present within the small area of suitable habitat included in the transmission corridor. Therefore, the NRC has determined that renewal of the operating licenses for St. Lucie Units 1 and 2 will have no effect on Lakela's mint.

13. *Harrisia (Cereus) eriophorus*, Fragrant prickly apple

The fragrant prickly apple is a solitary tree cactus that is endemic to St. Lucie County and is known only from approximately 11 small, disjunct sites, all along the Atlantic Coastal Ridge on the western shore of the Indian River (Service 1999). The St. Lucie to Midway transmission corridor crosses this ridge between the Indian River and the marshes on the east side of the Savannas State Preserve. Several of the known populations are located within 2 to 3 km (1.2 to 1.9 mi) of the St. Lucie to Midway transmission corridor, but none of the known populations are close enough to the transmission corridor to be directly affected by maintenance of the corridor. Although field surveys of the corridor did not reveal any fragrant prickly apple specimens (Foster Wheeler 2001), there appears to be a reasonable potential that the fragrant prickly apple could occur within or very near the transmission corridor on the west edge of the Indian River. However, because this area is maintained using minimal disturbance because of other known ecological sensitivities, the NRC has determined that the proposed license renewal for St. Lucie Units 1 and 2 is not likely to adversely affect the fragrant prickly apple.

14. *Polygala smallii*, Tiny milkwort

All known populations of the tiny milkwort are within 9.7 km (6 mi) of the Atlantic coast between Miami-Dade County and St. Lucie County. The only known population in St. Lucie County is located approximately 6.7 km (4.3 miles) south of the St. Lucie to Midway transmission line. Field surveys of the corridor did not detect the presence of the tiny milkwort (Foster Wheeler 2001). Because the only known population of tiny milkworts in St. Lucie County is a considerable distance from the transmission corridor, and no individuals were observed during field surveys of the affected area, the NRC has determined that the proposed renewal of the operating licenses for St. Lucie Units 1 and 2 will have no effect on the tiny milkwort.

In conclusion, if modifications are made to the project, if additional information involving potential effects to listed species becomes available, if a new species is listed, or if designated critical habitat may be affected by the project, re-initiation of consultation may be necessary.

Thank you for your cooperation and effort in protecting threatened and endangered species. If you have any questions please contact Chuck Kelso, Fish and Wildlife Biologist, at (772) 562-3909, extension 241.

Sincerely yours,

Allen V. Webb for

Linda S. Ferrell
Assistant Field Supervisor
South Florida Ecological Services Office

cc:
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