

# **Biological Assessment**

**St. Lucie Units 1 and 2  
License Renewal Review**

**St Lucie County, Florida**

**June 2002**

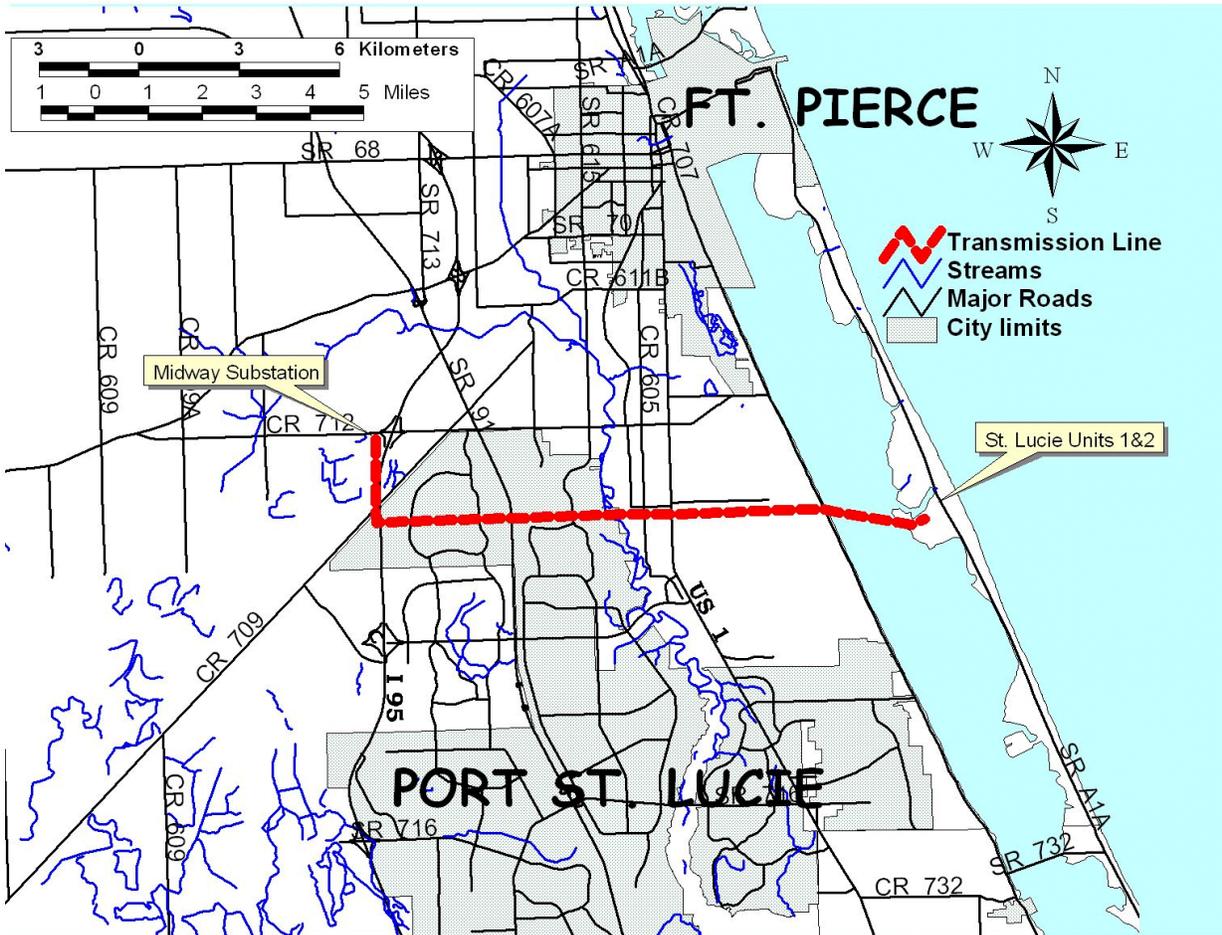
**Docket Nos. 50-335 and 50-389**

**U.S. Nuclear Regulatory Commission  
Rockville, Maryland**

# Evaluation of the Potential Effects on Endangered or Threatened Species from the Proposed License Renewal for the St. Lucie Units 1 and 2 Nuclear Power Plants.

## The Setting:

The proposed license renewal will apply to the facilities at the site of St. Lucie Units 1 and 2 on Hutchinson Island approximately 11.2 km (7 mi) southeast of Ft. Pierce, FL, as well as the 17.6 km (11 mi) long transmission line that connects the nuclear units with the regional transmission grid at the Midway Substation (Figure 1).



**Figure 1. General Location of the St. Lucie Units 1 and 2 Nuclear Power Station, and the associated transmission corridor.**

Hutchinson Island is typical of the offshore sandbars which line the southern U.S. Atlantic coastline. It consists of a sandbar on the eastern side that rises to about 4.6 m (15 ft) above MSL and a broader, sloping swale on the western side. The seaward side of the dunes currently have no vegetation and the inland side of the dunes are dominated by sea oats (*Unida paniculata*), sea grape (*Coccoloba uvifera*), salt marsh hay (*Spartina patens*), Australian pine (*Casuarina equisetifolia*), marsh ox-eye (*Barrichia*

*frutescens*), beach sunflower (*Helianthus debilis*), marsh elder (*Iva frutescens*), bay bean (*Canavalia rosea*), and railroad vine (*Ipomoea pescaprae*) (Foster Wheeler 2001).

Prior to the 1930's, the mangrove swamps on the western side of the island were maintained by tidal and occasional storm driven incursions of sea water as well as by rain (AEC 1973). The swales were dominated by red mangrove (*Rhizophora mangle*), with black mangrove (*Avicennia nitida*) and white mangrove (*Ragunularia racemosa*) established in the higher and less frequently flooded ground. These mangrove swamps are noteworthy for their high productivity, and the rich animal communities that they support. Much of these natural mangrove swamps were destroyed during the 1930's and 1940's as part of a mosquito control program initiated by the Work Projects Administration (W.P.A). The swamps were trenched, dyked, and flooded with sea water which greatly reduced mosquito breeding, but also led to the loss of many trees, especially the black mangroves (AEC 1973). Since that time, there has been partial restoration of the swales, but much of the area continues to be maintained in an inundated state by the local mosquito control districts.

There are also a few small tropical hammock habitats on Hutchinson Island near the St. Lucie site; the largest is among the mangrove stands north of the discharge canal. These habitats are unusual this far north, prominent species include gumbo-limbo (*Bursera simaruba*), paradise tree (*Simarouba glauca*), white and Spanish stoppers (*Eugenia axillaris* and *E. foetida*), wild lime (*Zanthoxylum fagara*), white indigo berry (*Randia aculeata*), mastic (*Mastichodendron foetidissimum*), and snow berry (*Chiocococca alba*).

Habitat in the transmission line corridor is a mixture of man-altered areas, sand pine scrub, prairie/pine flatwoods, wet prairie, and isolated marshes. In the 1970's, much of the corridor was used for agricultural purposes such as orange groves, row crops, and pastureland (AEC 1973). Most of that agricultural use has since been abandoned, except for the western portions that are used for grazing.

There is designated critical habitat for the Florida manatee in all of the Indian River Lagoon to the west of St. Lucie Units 1 and 2, including Big Mud Creek, an extension of Indian River which adjoins the plant site to the north. Critical habitat for the snail kite is located approximately 19 km (11.8 mi) northwest of the Midway Substation. Additionally, although not designated as critical habitat, the beach areas on the eastern side of Hutchinson Island are important nesting areas for the loggerhead (*Caretta caretta*) sea turtle, and they are also used to a lesser extent for nesting by green (*Chelonia mydas*) and leatherback (*Dermochelys coriacea*) sea turtles. Potential impacts to endangered or threatened sea turtles has been evaluated through a separate consultation with the National Marine Fisheries Service.

## **Proposed Action**

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 St. Lucie site occupies approximately 457 ha (1130 ac), of which 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 connects 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. 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.

### **Species Evaluated**

There are 14 species listed as threatened or endangered under the Federal ESA within St. Lucie County (Table 1). 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 will be *not likely to adversely affect* the endangered or threatened species in the vicinity of the St. Lucie plant and associated transmission corridor. The basis for the determinations for each species in the vicinity of the plant site and transmission corridor are discussed in the following paragraphs.

#### **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). Gopher tortoises (*Gopherus polphemus*) are present on the site, especially on the leeward side of the dunes to the east of the plant site and intake/discharge canals (FPL 2001). Gopher tortoises also occur within the St. Lucie to Midway transmission corridor, particularly in the strip between the Indian River and the eastern marshes of the Savannas State Preserve (Foster Wheeler 2001). Indigo snakes are known to seek out gopher tortoise burrows for shelter and denning (FWS 1999) and they have been observed elsewhere on Hutchinson Island and in St. Lucie County. 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

**Table 1.** Species Listed as Endangered or Threatened under the Endangered Species Act That Have Been Reported to Occur Within St. Lucie County, Florida.

Scientific Name	Common Name	Federal Status <sup>(a)</sup>	Determination
<b>Reptiles</b>			
<i>Drymarchon corias couperi</i>	Eastern indigo snake	T	Not likely to adversely affect
<i>Alligator mississippiensis</i>	American alligator	T(SA)	No Effect
<b>Birds</b>			
<i>Aphelocoma coerulescens</i>	Florida scrub-jay	T	Not likely to adversely affect
<i>Haliaeetus leucocephalus</i>	Bald eagle	T	No Effect
<i>Mycteria americana</i>	Wood stork	E	No Effect
<i>Picoides borealis</i>	Red-cockaded woodpecker	E	No Effect
<i>Polyborus plancus audubonii</i>	Audubon's crested caracara	T	No Effect
<i>Rostrhamus sociabilis</i>	Everglades snail kite	E	No Effect
<b>Mammals</b>			
<i>Peromyscus polionotus niveiventris</i>	Southeastern beach mouse	T	No Effect
<i>Trichechus manatus</i>	Florida manatee	E	Not likely to adversely affect
<b>Plants</b>			
<i>Asimina tetramera</i>	Four-petal paw paw	E	Not likely to adversely affect
<i>Dicerandra immaculate</i>	Lakela's mint	E	No Effect
<i>Harrisia (Cereus) eriophorus</i>	Fragrant prickly apple	E	Not likely to adversely affect
<i>Polygala smallii</i>	Tiny milkwort	E	No Effect

(a)E = endangered, T = threatened, T(SA) = threatened due to similarity of appearance,  
Sources: Based on FWS [<http://verobeach.fws.gov>], FNAI [<http://www.fnai.org>], FFWCC [<http://floridaconservation.org/pubs/endanger.html>], Atlas of Florida Vascular Plants [<http://www.plantatlas.usf.edu>] and Florida Geographic Data Library [<http://www.fgdl.org>] Internet Sites as of March 2002.

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

American alligators are common in freshwater wetland areas throughout South Florida. They are not present at the St. Lucie plant site because all of the aquatic environments in the immediate vicinity of the St. Lucie site are either salty or brackish. 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

Florida scrub-jays are found in various forms of Florida scrub, including the coastal scrub found in eastern St. Lucie County. The largest populations of Florida scrub-jays are located in the central portion of the Florida Peninsula in Polk and Highlands Counties, but they are also found along both coasts, and north of Orlando in Volusia, Lake, and Marion Counties. Although it is fairly widespread throughout peninsular Florida, it has extremely specific habitat requirements, the ancient dune ecosystems, which are dominated by xeric oaks (FWS 1999). The habitat on the plant site is not typical of the Florida scrub-jay requirements. There have not been any onsite sightings of Florida scrub-jays. Scrub-jays have been observed beneath the transmission lines in the vicinity of the FEC 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 mi) of the St. Lucie transmission line (FGDL 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 the maintenance is planned and performed with that 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. They usually nest in tall trees near major waterways and feed on fish, waterfowl, and occasionally carrion. 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 (1500 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 is a large, long-legged, boldly patterned, non-migratory raptor. It occurs in south Texas, southwestern Arizona, and through Mexico from Baja, California, to Panama and Cuba. Only the Florida population is protected under the ESA (FWS 1999). In South Florida, the caracara occurs in dry or wet prairies with scattered cabbage palms (*Sabal palmetto*), or occasionally in lightly wooded areas. They usually build well concealed nests within cabbage palms. Much of the historical habitat areas for the caracara have been greatly modified or destroyed, but there are indications that the caracara is able to utilize improved or semi-improved pastures (FWS 1999). Caracaras are opportunistic feeders, and will consume both carrion and live prey. The species has not been reported from 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 a large wading bird that rely on freshwater and estuarine habitats for nesting, roosting, and foraging. They build nests in colonies, usually in medium to tall trees that occur in either swamps or on islands surrounded by open water (FWS 1999) and they often share these rookeries with other wading birds. Wood storks forage by tactolocation and, therefore, rely on prey that is relatively concentrated. The alterations of the natural hydrologic regime in south Florida has eliminated much of the seasonal hydrological variation on which wood storks historically relied, in that they exploited the fish that would become concentrated in alligator holes and other depressions during the dry season. Wood storks are observed occasionally in the vicinity of the St. Lucie plant and the transmission corridor, but there are no known rookeries within many miles of the plant site or 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

The snail kite is a medium sized raptor with very specialized dietary requirements in that it feeds almost exclusively on apple snails (*Pomacea paludsa*) which are found in freshwater marshes and the shallow, vegetated edges of lakes. Most of the snail kite populations are located on the west side of Lake Okeechobee and in the everglades west of Palm Beach, Fort Lauderdale, and Miami. However, there is one small area within St. Lucie County that has been designated as critical habitat for the snail kite. This area includes the Cloud Lake and Strazzulla Reservoirs, approximately 19 km (12 mi) northwest of the Midway substation. This species has been occasionally observed within several kilometers of the transmission corridor

(FGDL 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

Red-cockaded woodpeckers occur throughout the southeastern United States in pine stands or pine-dominated pine-hardwood stands with sparse understory and ample old-growth trees (FWS 1999). Population levels have drastically declined over the last century due to logging and conversion of habitat to other uses. The status of red-cockaded woodpeckers in south Florida, including St. Lucie County, is not well known (FWS 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 inhabit the sea oats zone of the primary coastal dunes (FWS 1999). In many cases, suitable habitat for the southeastern beach mouse may only be a few meters wide, and in most cases it is highly heterogeneous. They primarily feed on the seeds of sea oats and panic grass (*Panicum amarum*), although they will eat seed of other dune species as well as insects. The current distribution is severely limited by the modification and destruction of habitat along the Florida barrier islands. The largest populations are located at Canaveral National Seashore, and other locations within Brevard County, and Indian River County has a number of populations. Individuals 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 specific 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*, Florida manatee

The Florida or 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). Manatees are mostly found where food sources are abundant. 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 FWS and Florida Department of Environmental Protection (predecessor to the FWCC). 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 FWCC on the capture and evaluation of entrapped manatees. FPL assists the FWCC, 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 366 m (1500 ft) and 1036 m (3400 ft) offshore, and terminates 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 is an aromatic shrub approximately 1 to 3 m (3 to 10 ft) tall. It 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 (FWS 1999). This species is found in various seral stages of sand pine scrub, and is adapted to infrequent, intense fires. 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 (FWS 1999). It occupies sites with varying amounts of organic litter, from partly covered to bare sand. 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 (FWS 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 (FWS 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

The tiny milkwort is a small, short lived, herbaceous species that is restricted to sand pockets within pine rocklands, open sand pine scrub, slash pine, high pine, and well drained coastal spoil (FWS 1999). It requires high light levels, and little to no organic litter accumulation. All known populations 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 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 addition to the species listed in Table 1, there are several other Federally listed species that have been reported from the counties surrounding St. Lucie county. These conceivably could occur in the vicinity of the St. Lucie plant or associated transmission line. These species include Atlantic salt marsh snake (*Nerodia fasciata taeniata*), Florida grasshopper sparrow (*Ammodramus savannarum floridanus*), piping plover (*Charadrius melodus*), Florida panther (*Felis concolor coryi*), Perforate reindeer lichen (*Cladonia perforata*), and beach clustervine (*Jacquemontia reclinata*). Because there is no clear indication that these species are near the plant or associated transmission line, the NRC has determined that the proposed action would have no effect on those species.

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