



L-2011-163  
10 CFR 52.3

April 26, 2011

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D.C. 20555-0001

Re: Florida Power & Light Company  
Proposed Turkey Point Units 6 and 7  
Docket Nos. 52-040 and 52-041  
Response to NRC Environmental Request for Additional Information Letter  
1103101 (RAI 5562) Environmental Standard Review Plan  
Section 2.4.1 – Terrestrial and Wetlands Ecology

Reference:

1. NRC Letter to FPL dated March 10, 2011, Environmental Request for Additional Information Letter 1103101 Related to ESRP Section 2.4.1, Terrestrial and Wetlands Ecology, for the Combined License Application Review for Turkey Point Units 6 and 7

Florida Power & Light Company (FPL) provides, as an attachment to this letter, its response to the Nuclear Regulatory Commission's (NRC) Environmental Request for Additional Information (RAI) 2.4.1-1 through 2.4.1-6 and 2.4.1-8 provided in the referenced letter. The attachment identifies changes that will be made in a future revision of the Turkey Point Units 6 and 7 Combined License Application (if applicable).

The response to RAI 2.4.1-7 will be provided by July 7, 2011.

If you have any questions, or need additional information, please contact me at 561-691-7490.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on April 26, 2011.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. Maher'.

William Maher  
Senior Licensing Director – New Nuclear Projects

WDM/RFO

DO97  
KRO

Proposed Turkey Point Units 6 and 7  
Docket Nos. 52-040 and 52-041  
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Attachment 1: FPL Response to NRC RAI No. 2.4.1-1 (RAI 5562)  
Attachment 2: FPL Response to NRC RAI No. 2.4.1-2 (RAI 5562)  
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Attachment 4: FPL Response to NRC RAI No. 2.4.1-4 (RAI 5562)  
Attachment 5: FPL Response to NRC RAI No. 2.4.1-5 (RAI 5562)  
Attachment 6: FPL Response to NRC RAI No. 2.4.1-6 (RAI 5562)  
Attachment 7: FPL Response to NRC RAI No. 2.4.1-8 (RAI 5562)

cc:

PTN 6 & 7 Project Manager, AP1000 Projects Branch 1, USNRC DNRL/NRO  
Regional Administrator, Region II, USNRC  
Senior Resident Inspector, USNRC, Turkey Point Plant 3 & 4

Proposed Turkey Point Units 6 and 7  
Docket Nos. 52-040 and 52-041  
FPL Response to NRC RAI No. 2.4.1-1 (RAI 5562)  
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**NRC RAI Letter No. 1103101 Dated March 10, 2011**

**SRP Section: EIS 02.04.01 – Terrestrial and Wetland Ecology**

Question from Environmental Technical Support Branch

**NRC RAI Number: EIS 02.04.01-1 (RAI 5562)**

Provide the following technical report: Threatened and Endangered Species Surveys of Existing Transmission Corridors & Planned Transmission Corridors & Water Pipeline Corridors, TP Property Associated with Units 6 & 7, April 21-23, 2008 and June 10-12, 2008 (Tetra Tech NUS, Inc - July 2008). Staff requests this information in order to characterize the baseline temporal and spatial distribution and abundance of important terrestrial species on or adjacent to the Turkey Point property.

**FPL RESPONSE:**

The technical report *Threatened and Endangered Species Surveys of Existing Transmission Corridors & Planned Transmission Corridors & Water Pipeline Corridors, Turkey Point Property Associated with Units 6 & 7, April 21-24, 2008 and June 10-12, 2008* has been included as an enclosure to this response.

This response is PLANT SPECIFIC.

**References:**

None

**ASSOCIATED COLA REVISIONS:**

No COLA changes have been identified as a result of this response.

**ASSOCIATED ENCLOSURES:**

Threatened and Endangered Species Surveys of Existing Transmission Corridors & Planned Transmission Corridors & Water Pipeline Corridors, Turkey Point Property Associated with Units 6 & 7, April 21-24, 2008 and June 10-12, 2008 (Tetra Tech NUS, Inc., July 2008).

## **Attachment 1**

### **Enclosure**

**Turkey Point Nuclear Plant Units 6 and 7  
COL Application  
Response to NRC RAI No. 2.4.1-1 (RAI 5562)**

**Threatened and Endangered Species Surveys of Existing  
Transmission Corridors & Planned Transmission  
Corridors & Water Pipeline Corridors, Turkey Point  
Property Associated with Units 6 & 7, April 21-24, 2008 and  
June 10-12, 2008 (Tetra Tech NUS, Inc., July 2008)**

**Enclosure (4 Total Pages)**

**Threatened and Endangered Species Surveys of Existing Transmission Corridors and  
Planned Transmission Corridors and Water Pipeline Corridor  
Turkey Point Property Associated with Units 6 & 7**

**April 21-24, 2008 and June 10-12, 2008**

**Prepared for Florida Power & Light Company**

**Prepared by Tetra Tech NUS, Inc.  
Aiken, South Carolina**

**July 2008**

**Threatened and Endangered Species Surveys of Existing Transmission Corridors and  
Planned Transmission Corridors and Water Pipeline Corridor  
Turkey Point Property Associated with Units 6 & 7**

**April 21-24, 2008 and June 10-12, 2008**

**Tetra Tech NUS, Inc**

As part of the pre-application process in preparation for submittal of the COLA for proposed Units 6 & 7, a survey of Threatened and Endangered Species was conducted in April and June 2008 in areas that would be impacted by proposed construction. Notwithstanding these dedicated surveys, observations of mammals, reptiles, and amphibians were noted during all site visits, and the resulting information from all site visits was used in characterizing terrestrial ecology in the Environmental Report.

Tetra Tech biologists have performed field reconnaissance of existing transmission corridors and planned transmission and water pipeline corridors associated with Turkey Point Units 6 & 7. The corridors were identified on a GIS figure provided to Tetra Tech by FPL. The field efforts were conducted during April 21-24 and June 10-12, 2008. The route identified as yellow-dashed on the figure provided to Tetra Tech by FPL has not been reconnoitered (wetland areas requiring helicopter/airboat surveys).

Species of primary interest consisted of animals that are state-listed or federally-listed as endangered or threatened, proposed for federal listing, and candidates for federal listing. The field effort consisted of driving along the corridors (escorted by an FPL employee) and concentrating efforts in areas offering the greatest potential for harboring listed animal species. A large portion of the corridors passes through urban and heavily developed areas that do not provide habitats where rare animal species are likely to occur. These areas were investigated, but not to the extent that the more undeveloped areas were surveyed. The relatively undeveloped portions of the corridors were surveyed on foot to the maximum practical extent.

During April 21-24, 2008, field reconnaissance was conducted:

- From the Davis Substation southward to the Turkey Point Power Plant along a single corridor containing four sets of transmission line structures (seven 230 kV transmission circuits). A portion of this corridor is co-located with the planned pipeline corridor.
- From the Turkey Point Turkey Point Power Plant eastward along the 230-kv single circuit to a point just south of the Florida City substation, then continuing eastward and northward along the 138-kv single circuit Davis-to-Florida City #2 corridor to the Anhinga substation.

During June 10-12, 2008, field reconnaissance was conducted:

- From the Anhinga substation on the Davis-to-Florida City #2 corridor to 136<sup>th</sup> Street (Howard Drive) crossing
- From SW 120<sup>th</sup> St north along a planned/possible transmission corridor; this route was pink-colored on the GIS figure provided to Tetra Tech by FPL.



- From the Levee substation north to the Broward County line along the Levee-to-Andytown corridor; this corridor contains two sets of transmission line structures (two 500 kV transmission circuits).
- Along Okeechobee Road from the Pennsuco substation to the intersection with the Levee-to-Andytown corridor; this route was blue-colored on the GIS figure provided to Tetra Tech by FPL.
- Remaining portions of the planned pipeline corridor that were not surveyed during April 21-24.

The Everglades snail kite (*Rostrhamus sociabilis plumbeus*), state-and federally-listed as endangered, was the only listed species observed during these surveys. A single Everglades snail kite was observed perched in a dead melaleuca snag approximately ¼ mile south of U.S. Hwy 41 along the pink color-coded potential transmission corridor. Approximately seven miles of this potential transmission corridor lie along the east edge of the East Everglades Expansion Area of the Everglades National Park; habitat here consists of a vast sawgrass marsh where the occasional occurrence of foraging Everglades snail kites would not be surprising. American crocodiles (*Crocodylus acutus*) were not observed during these corridor surveys, but are known to inhabit the canals within the Turkey Point boundaries and may occur in corridors within the facility. Similarly, wood storks (*Mycteria americana*) are state- and federally listed as endangered species, have been observed on the Turkey Point facility, and could be found in shallow wetlands associated with any of the transmission corridors.

Proposed Turkey Point Units 6 and 7  
Docket Nos. 52-040 and 52-041  
FPL Response to NRC RAI No. 2.4.1-2 (RAI 5562)  
L-2011-163 Attachment 2 Page 1 of 1

**NRC RAI Letter No. 1103101 Dated March 10, 2011**

**SRP Section: EIS 02.04.01 – Terrestrial and Wetland Ecology**

Question from Environmental Technical Support Branch

**NRC RAI Number: EIS 02.04.01-2 (RAI 5562)**

Provide the following technical report: Avian Surveys of the TP Property Associated with Units 6 & 7, June 13-14, 2009 (Tetra Tech NUS, Inc - June 2009). Staff requests this information in order to characterize the baseline temporal and spatial distribution and abundance of avian species on or adjacent to the Turkey Point property.

**FPL RESPONSE:**

The technical report *Avian Surveys of the Turkey Point Property Associated with Units 6 & 7, June 23-24, 2009* has been included as an enclosure to this response.

This response is PLANT SPECIFIC.

**References:**

None

**ASSOCIATED COLA REVISIONS:**

No COLA changes have been identified as a result of this response.

**ASSOCIATED ENCLOSURES:**

Avian Surveys of the Turkey Point Property Associated with Units 6 & 7, June 23-24, 2009 (Tetra Tech NUS, Inc., June 2009).



Proposed Turkey Point Units 6 and 7  
Docket Nos. 52-040 and 52-041  
L-2011-163 Attachment 2  
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## **Attachment 2**

### **Enclosure**

**Turkey Point Nuclear Plant Units 6 and 7  
COL Application  
Response to NRC RAI No. 2.4.1-2 (RAI 5562)**

**Avian Surveys of the Turkey Point Property Associated  
with Units 6 & 7, June 23-24, 2009  
(Tetra Tech NUS, Inc., June 2009)**

**Enclosure (5 Total Pages)**

**Avian Surveys of the Turkey Point Property  
Associated with Units 6 & 7: June 23-24, 2009**

**Prepared for Florida Power & Light Company**

**Prepared by Tetra Tech NUS, Inc.  
Aiken, South Carolina**

**June 2009**

**Avian Surveys of the Turkey Point Property  
Associated with Units 6 & 7**

**June 2009**

**Tetra Tech NUS, Inc**

As part of the pre-application process in preparation for submittal of the COLA for proposed Units 6 & 7, seasonal wildlife studies were scheduled to document potential differences in wildlife throughout the year, as is required under NUREG-1555 and NRC Regulatory Guide 4.2. Given that most wildlife species (amphibians, mammals, reptiles) are relatively non-migratory, potential seasonal differences typically pertain to avian species and the occurrence of resident (year-round) and migratory (temporary) species. For avian species using the Turkey Point site, we surveyed in late March to document resident and migratory (see March trip report) species and again in late June to document resident and spring/summer breeding species.

The following areas were surveyed during June 23-24, 2009: cooling canal system (CCS, includes the spoil deposition areas), the island, the two mangrove areas immediately north of the island, the radial well site, water treatment site, and a small portion of the proposed access road immediately west of the CCS. Two biologists were involved in approximately 18 hrs (each) of pedestrian and vehicular surveys.

All avian species observed were classified as to their relative abundance and residence status. The relative abundance classification was based on the following: abundant (> 50 individuals observed); common (10-50 individuals observed), or uncommon (< 10 individuals observed). Residence status (year-round occurrence, winter range, breeding range (spring-summer)) was based on range maps available in The Sibley Guide to Birds and The National Geographic Field Guide to the Birds of North America.

Climatic conditions during the surveys were typical of the south Florida rainy season (sunny to partly cloudy with scattered, often severe, thunderstorms and temperatures in the upper 80s/low 90s). The increased precipitation associated with the summer rainy season in southern Florida resulted in increased water levels in existing wetlands and occurrence of extensive pooling of water. The island site was inundated (approximately 12-18 inches) during the surveys.

**Results**

Thirty-nine (39) avian species were observed during the two survey days (Table 1). Most (21 species) of the observed species are generally associated with open aquatic/wetland habitats (e.g., cooling canal system).

The most abundant species included common nighthawks (> 100 individuals observed), white ibises (> 60 observed), and least terns (> 50 observed). Many of the wading bird and shorebird species were relatively common, as were white-crowned pigeons, common ground-doves, prairie warblers and red-winged blackbirds (Table 1).



Least terns and white-crowned pigeons are both state-listed (threatened) species and least terns are known to nest on the limestone roads/berms within the canal system (Jim Lindsay, FPL, personal communication). Common nighthawks and killdeer were observed nesting on similar substrates on the plant site.

#### Discussion

Wading birds, shorebirds and other waterbirds made up over one half (54%) of the avian species observed. These species, plus the common nighthawks that generally feed on mosquitoes and other insects associated with wetlands, were generally the most abundant species observed on site. This was expected given the predominance of aquatic/wetland habitats available at the site.

Water levels in the canals, mangrove areas, and other wetlands were higher than during the winter (avian) and spring (wildlife) surveys, presumably due to site operations (canals) and rainfall (mangroves and other wetlands). This likely resulted in a dispersion of some of the wading birds from the canal system, with many more observed in the now wet dwarf mangrove areas (e.g., reclaimed water treatment site).

As noted above, breeding birds were observed on-site. Evidence of the breeding season was also noted by the presence of juvenile (young-of-the-year) birds, including most species of wading birds and shorebirds.

Additional wildlife observed during avian surveys included raccoon (radial well site & island), marsh rabbit (canal system), and cotton rat (canal system). Also, twenty cover boards were deployed in March to assist with the April survey of reptiles and amphibians. These boards were checked a final time during the avian surveys and then removed from the field (Palm Drive ditch, mangrove areas north of island, mangrove areas between canal system berm and Biscayne Bay). A single eastern narrow-mouthed toad (*Gastrophryne carolinensis*) was found under the cover boards.



**Table 1. Birds Observed on the Turkey Point Plant Property on 23-24 June 2009.**

Common Name	Scientific Name	General Habitat <sup>a</sup>	Abundance <sup>b</sup>	Residence <sup>c</sup>
<b><u>SHOREBIRDS</u></b>				
Ruddy turnstone	<i>Arenaria interpres</i>	C	U	W
Wilson's plover	<i>Charadrius wilsonia</i>	C	C	Y
Killdeer	<i>Charadrius vociferous</i>	C, F	C	Y
Black-necked stilt	<i>Himantopus mexicanus</i>	C	U	W
Lesser yellowlegs	<i>Tringa flavipes</i>	C	U	W
<b><u>WATER BIRDS</u></b>				
Roseate spoonbill	<i>Ajaia ajaja</i>	C	U	Y
Anhinga	<i>Anhinga anhinga</i>	C	U	Y
Great egret	<i>Ardea albus</i>	M, C	C	Y
Great blue heron	<i>Ardea herodias</i>	M, C	U	Y
Green heron	<i>Butorides virescens</i>	M, C	C	Y
Little blue heron	<i>Egretta caerulea</i>	M, C	U	Y
Reddish egret	<i>Egretta rufescens</i>	C	C	Y
Snowy egret	<i>Egretta thula</i>	M, C	C	Y
Tricolored heron	<i>Egretta tricolor</i>	M, C	C	Y
White ibis	<i>Eudocimus albus</i>	M, C	A	Y
Laughing gull	<i>Larus atricilla</i>	M, C	C	Y
Black-crowned night-heron	<i>Nycticorax nycticorax</i>	M, C	C	Y
Double-crested cormorant	<i>Phalacrocorax minor</i>	C	A	Y
Least tern	<i>Sterna antillarum</i>	C	A	Y
Gull-billed tern	<i>Sterna nilotica</i>	C	U	Y
<b><u>HAWK-LIKE BIRDS</u></b>				
Great horned owl	<i>Bubo virginianus</i>	M	U	Y
Red shouldered hawk	<i>Buteo lineatus</i>	M	U	Y
Turkey vulture	<i>Cathartes aura</i>	C, F	C	Y
<b><u>OTHER SPECIES</u></b>				
Red-winged blackbird	<i>Agelaius phoeniceus</i>	M, C	C	Y
Northern cardinal	<i>Cardinalis cardinalis</i>	M, C	U	Y
Common nighthawk	<i>Chordeiles minor</i>	M, C	A	S
Northern flicker	<i>Colaptes auratus</i>	M	U	Y
White-crowned pigeon	<i>Columba leucocephala</i>	M, C	C	Y
Common ground-dove	<i>Columbina passerina</i>	C	C	Y
Prairie warbler	<i>Dendroica discolor</i>	M, C	C	Y
Gray catbird	<i>Dumetella carolinensis</i>	M, C	U	W
Loggerhead shrike	<i>Lanius ludovicianus</i>	C	U	Y
Red-bellied woodpecker	<i>Melanerpes carolinus</i>	M	U	Y
Mockingbird	<i>Mimus polyglottis</i>	F, M	C	Y
Boat-tailed grackle	<i>Quiscalus major</i>	F, M	U	Y
Swallow species	Unknown	C	U	Y
European starling	<i>Sturnus vulgaris</i>	F	U	Y
Mourning dove	<i>Zenaida macroura</i>	F, M	U	Y

<sup>a</sup>Habitat types: C=cooling canal system, F=facilities, M=mangroves.

<sup>b</sup>Abundance categories: A=abundant (> 50 individuals observed), C=common (10 – 50 observed), and U=uncommon (< 10 observed).

<sup>c</sup>Residence status: Y=year-round, W=winter range, S=summer range.



Proposed Turkey Point Units 6 and 7  
Docket Nos. 52-040 and 52-041  
FPL Response to NRC RAI No. 2.4.1-3 (RAI 5562)  
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**NRC RAI Letter No. 1103101 Dated March 10, 2011**

**SRP Section: EIS 02.04.01 – Terrestrial and Wetland Ecology**

Question from Environmental Technical Support Branch

**NRC RAI Number: EIS 02.04.01-3 (RAI 5562)**

Provide the following technical report: Avian Surveys of the TP Property Associated with Units 6 & 7, March 24-25, 2009 (Tetra Tech NUS, Inc - April 2009). Staff requests this information in order to characterize the baseline temporal and spatial distribution and abundance of avian species on or adjacent to the Turkey Point property.

**FPL RESPONSE:**

The technical report *Avian Surveys of the Turkey Point Property Associated with Units 6 & 7, March 24-25, 2009* has been included as an enclosure to this response.

This response is PLANT SPECIFIC.

**References:**

None

**ASSOCIATED COLA REVISIONS:**

No COLA changes have been identified as a result of this response.

**ASSOCIATED ENCLOSURES:**

Avian Surveys of the Turkey Point Property Associated with Units 6 & 7, March 24-25, 2009 (Tetra Tech NUS, Inc., April 2009).

Proposed Turkey Point Units 6 and 7  
Docket Nos. 52-040 and 52-041  
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## **Attachment 3**

### **Enclosure**

**Turkey Point Nuclear Plant Units 6 and 7  
COL Application  
Response to NRC RAI No. 2.4.1-3 (RAI 5562)**

**Avian Surveys of the Turkey Point Property Associated  
with Units 6 & 7, March 24-25, 2009  
(Tetra Tech NUS, Inc., April 2009)**

**Enclosure (5 Total Pages)**

**Avian Surveys of the Turkey Point Property  
Associated with Units 6 & 7: March 24-25, 2009**

**Prepared for Florida Power & Light Company**

**Prepared by Tetra Tech NUS, Inc.  
Aiken, South Carolina**

**April 2009**

**Avian Surveys of the Turkey Point Property  
Associated with Units 6 & 7**

**March 24-25, 2009**

**Tetra Tech NUS, Inc**

As part of the pre-application process in preparation for submittal of the COLA for proposed Units 6 & 7, seasonal wildlife studies were scheduled to document potential differences in wildlife throughout the year, as is required under NUREG-1555 and NRC Regulatory Guide 4.2. Given that most wildlife (amphibians, mammals, reptiles) is relatively non-migratory, potential seasonal differences typically pertain to avian species and the occurrence of resident (year-round) and migratory (temporary) species. For avian species using the Turkey Point site, we surveyed in late March to document resident and migratory (winter range) species and will survey again in late June to document resident and spring/summer breeding species.

The following areas were surveyed in late March 2009: cooling canal system (CCS, includes the spoil deposition areas), the island, the two mangrove areas immediately north of the island, the radial well site, water treatment site, and a small portion of the proposed access road immediately west of the CCS. Two biologists were involved in approximately 20 hrs (each) of pedestrian and vehicular surveys.

All avian species observed were classified as to their relative abundance and residence status. The relative abundance classification was based on the following: abundant (> 50 individuals observed); common (10-50 individuals observed), or uncommon (< 10 individuals observed). Residence status was based on range maps available in two bird guides (The Sibley Guide to Birds and The National Geographic Field Guide to the Birds of North America): year-round occurrence, winter range, breeding range (spring-summer).

Climatic conditions during the surveys were moderate (sunny to partly cloudy with temperatures in the upper 70s), although a relatively constant wind (approximately 20 mph) blew from the east throughout the surveys. This strong wind may have resulted in reduced travel by some species as several birds were observed struggling to fly against the wind. An additional impact of the prevailing wind was to increase water levels (tidal) on the island site, keeping it largely inundated throughout the surveys.

## **Results**

Thirty-six (36) avian species were observed during the two survey days (Table 1). Nine species (25%) were considered wintering birds, including most of the shorebirds, two passerine species (Savannah sparrow and palm warbler), white pelican and northern harrier. Half (18 species) of the observed species are generally associated with open aquatic/wetland habitats (e.g., cooling canal system).

The most abundant species included double-crested cormorants (> 250 individuals observed) and white ibises (> 60 observed). Most wading bird species were relatively common, as were willets and red-winged blackbirds (Table 1).

## Discussion

Wading birds, shorebirds and other waterbirds made up 50% of the avian species observed and were generally the most abundant species observed on site. This was expected given the predominance of aquatic/wetland habitats available at the site and the timing of the surveys. Shorebirds occurred in greatest densities in the afternoon when the tides (water levels) dropped on the island site, exposing portions of the mudflats. Upland habitats are relatively sparse on the Turkey point property associated with the construction areas, and generally tend to occur as linear strips along previous spoil deposition areas along roads and canals. Passerine birds were typically observed near mangrove ecotones with canals and/or roads and in the early successional habitats in the broader berms within the canal system.

The prevalence (25%) of winter range/migratory species was expected, although the proportion of migrant species observed can vary considerably with time of year (different species migrate at different times) and environmental conditions (e.g., winds and tides). These species are not expected to occur on-site in the summer surveys, but additional breeding season species should occur on site.



**Table 1. Birds Observed on the Turkey Point Plant Property on 24-25 March 2009.**

COMMON NAME	SCIENTIFIC NAME	General Habitat <sup>a</sup>	Abundance <sup>b</sup>	Residence <sup>c</sup>
<b><u>SHOREBIRDS</u></b>				
Red knot	<i>Calidris canutus</i>	C	U	W
Western sandpiper	<i>Calidris maurii</i>	C	U	W
Least sandpiper	<i>Calidris minutilla</i>	C	U	W
Willet	<i>Catoptrophorus semipalmatus</i>	C	C	Y
Semipalmated Plover	<i>Charadrius semipalmatus</i>	C	U	W
Killdeer	<i>Charadrius vociferous</i>	C, F	C	Y
Greater yellowlegs	<i>Tringa melanoleuca</i>	C	C	W
<b><u>WATER BIRDS</u></b>				
Anhinga	<i>Anhinga anhinga</i>	C	U	Y
Great egret	<i>Ardea albus</i>	M, C	C	Y
Great blue heron	<i>Ardea herodias</i>	M, C	C	Y
Green heron	<i>Butorides virescens</i>	M, C	U	Y
Little blue heron	<i>Egretta caerulea</i>	M, C	C	Y
Reddish egret	<i>Egretta rufescens</i>	C	U	Y
Snowy egret	<i>Egretta thula</i>	M, C	C	Y
Tricolored heron	<i>Egretta tricolor</i>	M, C	C	Y
White ibis	<i>Eudocimus albus</i>	M, C	A	Y
White pelican	<i>Pelecanus erythrorhynchos</i>	C	C	W
Double-crested cormorant	<i>Phalacrocorax minor</i>	C	A	Y
<b><u>HAWK-LIKE BIRDS</u></b>				
Turkey vulture	<i>Cathartes aura</i>	C, F	C	Y
Northern harrier	<i>Circus cyaneus</i>	C	U	W
Kestrel	<i>Falco sparverius</i>	C	U	Y
Osprey	<i>Pandion haliaetus</i>	C	U	Y
<b><u>OTHER SPECIES</u></b>				
Red-winged blackbird	<i>Agelaius phoeniceus</i>	M, C	C	Y
Northern cardinal	<i>Cardinalis cardinalis</i>	M, C	U	Y
Belted kingfisher	<i>Ceryle alcyon</i>	C	U	Y
Northern flicker	<i>Colaptes auratus</i>	M	U	Y
Common ground-dove	<i>Columbina passerina</i>	C	C	Y
Prairie warbler	<i>Dendroica discolor</i>	M, C	U	Y
Palm warbler	<i>Dendroica palmarum</i>	M, C	C	W
Loggerhead shrike	<i>Lanius ludovicianus</i>	C	C	Y
Mockingbird	<i>Mimus polyglottis</i>	F, M	C	Y
Savannah sparrow	<i>Passerculus sandwichensis</i>	C	C	W
Boat-tailed grackle	<i>Quiscalus major</i>	F, M	U	Y
Common grackle	<i>Quiscalus quiscula</i>	C	U	Y
European starling	<i>Sturnus vulgaris</i>	F	C	Y
Mourning dove	<i>Zenaida macroura</i>	F, M	U	Y

<sup>a</sup>Habitat types: C=cooling canal system, F=facilities, M=mangroves.

<sup>b</sup>Abundance categories: A=abundant (> 50 individuals observed), C=common (10 – 50 observed), and U=uncommon (< 10 observed).

<sup>c</sup>Residence status: Y=year-round, W=wintering range.

Proposed Turkey Point Units 6 and 7  
Docket Nos. 52-040 and 52-041  
FPL Response to NRC RAI No. 2.4.1-4 (RAI 5562)  
L-2011-163 Attachment 4 Page 1 of 1

**NRC RAI Letter No. 1103101 Dated March 10, 2011**

**SRP Section: EIS 02.04.01 – Terrestrial and Wetland Ecology**

Question from Environmental Technical Support Branch

**NRC RAI Number: EIS 02.04.01-4 (RAI 5562)**

Provide the following technical report: Mammal Trapping & Herpetology Report TP Property Associated with Units 6 & 7, 4/13 - 16/09 (Tetra Tech NUS, Inc - April 2009). Staff requests this information in order to characterize the baseline temporal and spatial distribution and abundance of mammal, reptile, and amphibian species on or adjacent to the Turkey Point property.

**FPL RESPONSE:**

The technical report *Mammal Trapping and Herpetology Report Turkey Point Property Associated with Units 6 & 7, April 13-16, 2009*, has been included as an enclosure to this response.

This response is PLANT SPECIFIC.

**References:**

None

**ASSOCIATED COLA REVISIONS:**

No COLA changes have been identified as a result of this response.

**ASSOCIATED ENCLOSURES:**

Mammal Trapping and Herpetology Report Turkey Point Property Associated with Units 6 & 7, April 13-16, 2009 (Tetra Tech NUS, Inc., April 2009).

Proposed Turkey Point Units 6 and 7  
Docket Nos. 52-040 and 52-041  
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Enclosure Page 1 of 5

## **Attachment 4**

### **Enclosure**

**Turkey Point Nuclear Plant Units 6 and 7  
COL Application  
Response to NRC RAI No. 2.4.1-4 (RAI 5562)**

**Mammal Trapping and Herpetology Report Turkey Point  
Property Associated with Units 6 & 7, April 13-16, 2009  
(Tetra Tech NUS, Inc., April 2009)**

**Enclosure (5 Total Pages)**

**Mammal Trapping and Herpetology Report  
Turkey Point Property Associated with Units 6 & 7**

**April 13-16, 2009**

**Prepared for Florida Power & Light Company**

**Prepared by Tetra Tech NUS, Inc.  
Aiken, South Carolina**

**April 2009**



**Mammal Trapping and Herpetology Report  
Turkey Point Property Associated with Units 6 & 7**

**April 13-16, 2009**

**Tetra Tech NUS, Inc.**

As part of the pre-application process in preparation for submittal of the COLA for proposed Units 6 & 7, a survey of small mammals, amphibians, and reptiles was conducted in April 2009 in areas that would be impacted by proposed construction. Although NUREG-1555 and NRC Regulatory Guide 4.2 discuss seasonal wildlife surveys, potential seasonal differences in wildlife populations typically apply more to migratory birds and large mammals. Given that small mammals, amphibians, and reptiles are relatively non-migratory, a dedicated small mammal, amphibian and reptile survey was conducted in a single season and is described below. Notwithstanding this single dedicated survey, observations of mammals, reptiles, and amphibians were noted during all site visits, and the resulting information from all site visits was used in characterizing the site's terrestrial communities in the Environmental Report.

The small mammal surveys in April 2009 were conducted using 3 x 3.5 x 9" folding aluminum H.B. Sherman™ live traps. Ten, 15, or 20 traps were placed along each of eight transects within a variety of habitats in several areas that would be disturbed by Units 6 & 7 plant construction (see Figure 1), for a total of 120 traps. The traps were spaced approximately 60 to 80 feet apart, and were marked with orange flagging placed on a nearby tree, bush, or other object. On April 13, 105 traps were initially opened, set, and baited with rolled oats, then were checked each morning for three consecutive days (April 14-16). An additional 15 traps were deployed on the site of the southern spoil deposition area on April 14 and were checked on April 15-16. Thus, the trapping period consisted of 345 "trap nights" (105 traps x 3 nights + 15 traps x 2 nights). The traps were baited with rolled oats each day as needed. Captured mammals were identified and released.

The herpetofaunal community (reptiles and amphibians) was investigated using coverboards, minnow traps, dip nets, and pedestrian searches of suitable habitats (e.g., under debris, rock piles, deadfall) with the aid of reptile hooks. Coverboards serve as artificial shelters for reptiles and amphibians that seek shelter and refuge, and are commonly used sampling techniques that can be highly effective at surveying herpetofaunal communities. In March of 2009, 20 coverboards, which consisted of sheets of plywood cut into sections approximately 4 feet by 4 feet, were placed in several areas that would be disturbed during Units 6 & 7 plant construction. The coverboards were placed around the edges of marshes and mangrove swamps. The coverboards were checked daily during April 13-16, and during June 23-24, 2009 (avian surveys), at which time the cover boards were removed. Four minnow traps were set in the ditch along Palm Drive (reclaimed water treatment facility site) and seven were set in the proposed administrative building/parking area site (two mangrove swamp areas immediately north of the Units 6 & 7 plant area). The minnow traps were only partially submerged in standing water, so that any captured amphibians or reptiles would not drown. The minnow traps were checked each day for two days. Dip nets were dragged through aquatic vegetation within the two mangrove areas. Planned construction areas were searched during pedestrian surveys, which included observations of actual animals as well as their sign (tracks and scat).



#### Results: Mammals

Nine cotton rats (*Sigmodon hispidus*) and five black rats (*Rattus rattus*) were captured in the small mammal traps, which equates to a capture rate of 4.1 percent. Cotton rats were captured on most transects but black rats were captured only within the proposed Units 6 & 7 plant area and adjacent mangrove areas. Both species are expected to be present and relatively common, given the site's geography and available habitats.

Mammals either observed or noted via tracks and scat included raccoons (*Procyon lotor*), opossums (*Didelphis virginiana*), marsh rabbits (*Silvilagus palustris*), and white-tailed deer (*Odocoileus virginianus*). No bats were observed during an evening visit (2 hrs) between the mangrove areas and the existing facilities.

#### Results: Reptiles and Amphibians

The April 2009 survey efforts (and follow-up coverboard checks in June) documented four species of snakes, three species of lizards, four species of amphibians, and one turtle species. Three mangrove salt marsh snakes (*Nerodia clarkii compressicauda*) and one Florida water snake (*Nerodia fasciata pictiventris*) were captured in minnow traps. One black racer (Southern black racer; *Coluber constrictor priapus*) and one rough green snake (*Opheodrys aestivus*) was observed during pedestrian surveys.

Lizards observed during pedestrian surveys or beneath coverboards consisted of the Cuban brown anole (*Anolis sagrei*), green iguana (*Iguana iguana*), and Mediterranean gecko (*Hemidactylus turcicus*). The Florida softshell turtle (*Apalone ferox*) was the only turtle species observed.

Amphibians observed during pedestrian surveys or beneath coverboards consisted of the greenhouse frog (*Eleutherodactylus planirostris*), Southern toad (*Bufo terrestris*), Southern leopard frog (*Rana utricularia*), and Eastern narrow-mouthed toad (*Gastrophryne carolinensis*).

The April 2009 surveys were not designed to include the American crocodile (*Crocodylus acutus*), since this species has been extensively studied at the site. Nevertheless, several American crocodiles were observed in the cooling water canals and two small (< 3 feet in length) crocodiles were observed in the mangrove area proposed as a construction parking site.

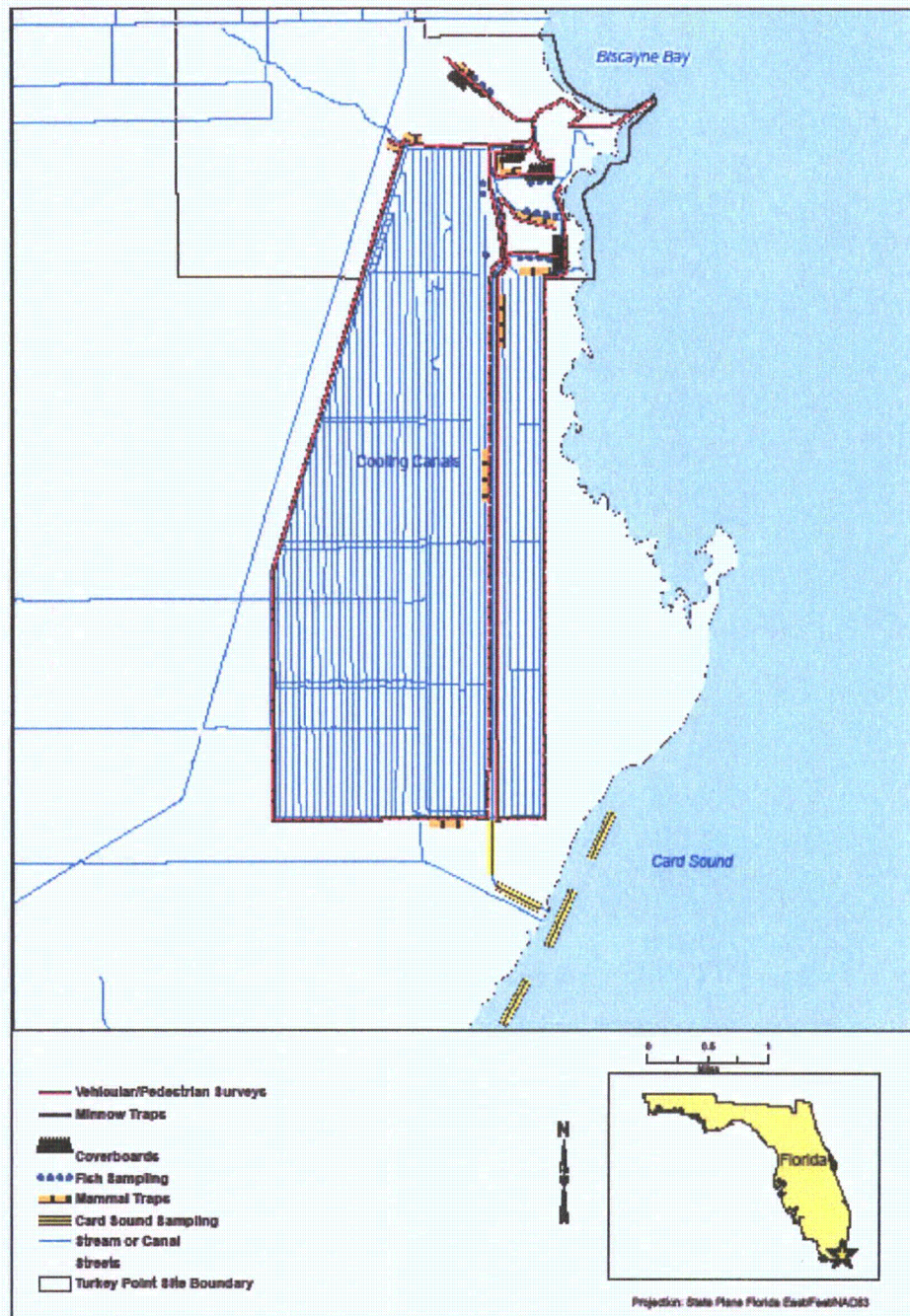


Figure 1 Locations of Recent Wildlife and Fish Surveys on the Turkey Point Plant Property

Proposed Turkey Point Units 6 and 7  
Docket Nos. 52-040 and 52-041  
FPL Response to NRC RAI No. 2.4.1-6 (RAI 5562)  
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**NRC RAI Letter No. 1103101 Dated March 10, 2011**

**SRP Section: EIS 02.04.01 – Terrestrial and Wetland Ecology**

Question from Environmental Technical Support Branch

**NRC RAI Number: EIS 02.04.01-5 (RAI 5562)**

Provide the following technical report: Threatened & Endangered Fauna Species Survey of Planned Transmission Corridors Levee to Pennsuco and Davis to Miami TP Property Associated with Units 6 & 7, 3/26/09 (Tetra Tech NUS, Inc - April 2009). Staff requests this information in order to characterize the baseline temporal and spatial distribution and abundance of important terrestrial species on or adjacent to the proposed transmission lines associated with TP Units 6 and 7.

**FPL RESPONSE:**

The technical report *Threatened and Endangered Fauna Species Survey of Planned Transmission Corridors Levee to Pennsuco and Davis to Miami Turkey Point Property Associated with Units 6 & 7, March 26, 2009* has been included as an enclosure to this response.

This response is PLANT SPECIFIC.

**References:**

None

**ASSOCIATED COLA REVISIONS:**

No COLA changes have been identified as a result of this response.

**ASSOCIATED ENCLOSURES:**

Threatened and Endangered Fauna Species Survey of Planned Transmission Corridors Levee to Pennsuco and Davis to Miami Turkey Point Property Associated with Units 6 & 7, March 26, 2009 (Tetra Tech NUS, Inc., April 2009).

## **Attachment 5**

### **Enclosure**

**Turkey Point Nuclear Plant Units 6 and 7  
COL Application  
Response to NRC RAI No. 2.4.1-5 (RAI 5562)**

**Threatened and Endangered Fauna Species Survey of  
Planned Transmission Corridors Levee to Pennsuco and  
Davis to Miami Turkey Point Property Associated with  
Units 6 & 7, March 26, 2009  
(Tetra Tech NUS, Inc., April 2009)**

**Enclosure (3 Total Pages)**

**Threatened and Endangered Fauna Species Survey of Planned Transmission  
Corridors Levee to Pennsuco and Davis to Miami  
Turkey Point Property Associated with Units 6 & 7**

**March 26, 2009**

**Prepared for Florida Power & Light Company**

**Prepared by Tetra Tech NUS, Inc.  
Aiken, South Carolina**

**April 2009**



**Threatened and Endangered Fauna Species Survey of Planned Transmission  
Corridors Levee to Pennsuco and Davis to Miami  
Turkey Point Property Associated with Units 6 & 7**

**March 26, 2009**

**Tetra Tech NUS, Inc**

As part of the pre-application process in preparation for submittal of the COLA for proposed Units 6 & 7, a survey of Threatened and Endangered Species was conducted in March 2009 in areas that would be impacted by proposed construction. Notwithstanding these dedicated surveys, observations of fauna were noted during all site visits, and the resulting information from all site visits was used in characterizing terrestrial ecology in the Environmental Report.

Tetra Tech biologists performed field reconnaissance during visits to the Levee to Pennsuco and Davis to Miami components of the transmission expansion associated with Units 6 & 7 on March 26th, 2009 escorted by Joel Marco of FPL, to survey for threatened and endangered (T&E) fauna. No T&E fauna were observed during this visit. General comments on both transmission corridors are discussed below.

The proposed Levee to Pennsuco line follows existing corridor to the east of the Levee Substation, crossing low sawgrass habitat (likely wetland areas) before traversing mining property. These wetland areas may require mitigation given that the transmission tower pads within the existing corridor will have to be expanded to add new towers. Then the line turns north, with the existing corridor running parallel on the east side of NW 107<sup>th</sup> Avenue. It crosses to the west side of NW 107<sup>th</sup> Avenue and runs through developed (industrial) land to Pennsuco Substation.

The Davis to Miami line exits the Davis Substation to the north through nursery lands, before turning east. After turning east and before the Florida Turnpike, the line is adjacent to two Miami-Dade County protected natural areas that appeared to be remnant pine rockland habitat. Due to the proximity of the corridor to these sensitive habitats, surveys of these segments of the line by the T&E plant survey team is strongly recommended. After the turnpike, the line continues east through densely urban habitat to U.S. 1 (the corridor consists primarily of mowed grasses). The remainder of the proposed transmission corridor heads north along a Miami Metro bus road corridor and a Miami Metro elevated train corridor.

Proposed Turkey Point Units 6 and 7  
Docket Nos. 52-040 and 52-041  
FPL Response to NRC RAI No. 2.4.1-6 (RAI 5562)  
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**NRC RAI Letter No. 1103101 Dated March 10, 2011**

**SRP Section: EIS 02.04.01 – Terrestrial and Wetland Ecology**

Question from Environmental Technical Support Branch

**NRC RAI Number: EIS 02.04.01-6 (RAI 5562)**

Provide the following technical report: Final Summary Report Botanical Survey for Rare, Threatened, and Endangered Plants - TP Proposed Transmission lines, 4/1/09 (prepared for TtNUS by Tetra Tech, EC, Inc). Staff requests this information in order to characterize the baseline temporal and spatial distribution and abundance of important terrestrial species on or adjacent to the proposed transmission lines associated with TP Units 6 and 7.

**FPL RESPONSE:**

The technical report *Final Summary Report Botanical Survey for Rare, Threatened, and Endangered Plants – Turkey Point Proposed Transmission Lines, April 1, 2009* has been included as an enclosure to this response.

This response is PLANT SPECIFIC.

**References:**

None

**ASSOCIATED COLA REVISIONS:**

No COLA changes have been identified as a result of this response.

**ASSOCIATED ENCLOSURES:**

Final Summary Report Botanical Survey for Rare, Threatened, and Endangered Plants – Turkey Point Proposed Transmission Lines, April 1, 2009 (prepared for TtNUS by Tetra Tech, EC, Inc, April 2009).