

TurkeyPoint34SLRNPEm Resource

From: Comar, Manny
Sent: Wednesday, March 27, 2019 8:51 AM
To: TurkeyPoint34SLR Resource
Subject: FW: Transmittal of Draft Environmental Audit Needs List
Attachments: Turkey Point SLR Environmental Audit Needs - draft transmitted to applicant on 18-05-29.docx

From: Beasley, Benjamin
Sent: Tuesday, March 26, 2019 3:26 PM
To: Comar, Manny
Subject: FW: Transmittal of Draft Environmental Audit Needs List

From: Beasley, Benjamin
Sent: Tuesday, May 29, 2018 5:01 PM
To: Folk, Kevin <Kevin.Folk@nrc.gov>
Subject: FW: Transmittal of Draft Environmental Audit Needs List

From: James, Lois
Sent: Tuesday, May 29, 2018 4:36 PM
To: Franzone, Steve <Steve.Franzone@fpl.com>; Orthen, Richard <Richard.Orthen@fpl.com>; Maher, William <William.Maher@fpl.com>
Cc: Burton, William <William.Burton@nrc.gov>; Beasley, Benjamin <Benjamin.Beasley@nrc.gov>; Oesterle, Eric <Eric.Oesterle@nrc.gov>; Moser, Michelle <Michelle.Moser@nrc.gov>; Gibson, Lauren <Lauren.Gibson@nrc.gov>
Subject: Transmittal of Draft Environmental Audit Needs List

Good afternoon –

Attached are the draft environmental audit needs. The audit will be the week of June 18th in Homestead, FL. We are in the process of preparing and issuing an audit plan which will include the final list of audit needs.

Lois

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Tours

1. Please provide a biologist to lead a tour of onsite terrestrial resources, including the cooling canal system, mudflats, mangroves, freshwater forested/scrub shrub wetlands, and upland habitats. (Moser and Grange)
2. Please provide a biologist to lead a tour of important terrestrial resources within the vicinity of the PTN site, including the Everglades Mitigation Bank. (Moser)
3. Provide an aquatic ecology tour of the onsite aquatic environments to include the CCS, the remnant canals, the mangrove wetland west of PTN, and the sawgrass marsh / mangrove community adjacent to Palm Drive. This tour can be combined with the terrestrial ecology tour, hydrology tour, and/or any other tours that are appropriate. If not combined, please schedule this tour such that the aquatic ecology reviewer (Grange) can also attend the terrestrial ecology and hydrology tours. (Grange)
4. Major air emission sources (Hoffman)
5. The primary meteorological tower (Hoffman)
6. The radiation protection / access control area to observe the following (Clark, Rautzen, and Folk):
 - a. A walk-down of the liquid and gaseous radwaste systems inside of the plant to get a sense of the components listed in the ER and how they are routed.
 - b. Low-level radioactive waste storage and processing areas, including mixed waste.
 - c. Radiological environmental monitoring program (REMP) – a small, representative sample of monitoring stations (e.g., air monitoring stations, TLD stations, drinking water, surface water, sediment, groundwater, milk, and vegetation, including monitoring stations co-located with State monitoring stations).
7. NPDES / FDES permitted outfalls, including storm drain outfalls (Clark, Rautzen, Ford, and Folk)
8. Non-Rad waste storage sites / RCRA permitted storage (if any) (Clark and Rautzen)
9. Independent spent fuel storage installation (ISFSI) (Clark and Rautzen)
10. PTN, Units 1 and 2 intake and discharge locations on the CCS. (Folk and Ford)
11. Representative annual uprate CCS (Consent Agreement) monitoring locations (i.e., flow, surface water, groundwater, and ecology) (Folk and Ford)
12. CCS interceptor ditch and L-31-E canal adjacent to the CCS and the location where water is transferred from L-31 to the CCS. (Folk and Ford)
13. Point of blowdown water discharge from the Unit 5 cooling tower into the CCS. (Folk and Ford)
14. The discharge location of Floridan aquifer water into the CCS. (Folk and Ford)
15. Groundwater production wells including: (1) CCS freshening system wells, (2) Biscayne Aquifer “marine” wells; (3) Recovery Well System extraction wells and Class 1 injection well; and (4) Upper Floridan Aquifer saline production wells for Unit 5 (i.e., PW-1, PW-3, and PW-4) (Folk and Ford)
16. Sewage treatment plant and Class V injection well (# IW-1) (Folk and Ford)
17. Water and wastewater treatment facilities (Folk and Ford)
18. Ongoing sediment removal activities within the CCS. (Ford and Grange)
19. The barge turning basin and Turtle Point where FPL will undertake restoration (dredge and fill) projects to prevent releases of groundwater from the CCS to surface waters connected to Biscayne Bay. (Ford and Grange)
20. The plug that seals off the CCS from the Card Sound Canal that discharges into Card Sound. (Ford)
21. Possible on-site alternative power generation locations. (Hoffman)
22. The surface water reviewer is also supporting the safety review of the AMP titled “Inspection of Water-Control Structures Associated with Nuclear Power Plants”. The AMP will be used to manage loss of material, loss of form due to erosion, settlement, sedimentation, frost action, waves, currents, surface runoff, and seepage for earthen water-control structures exposed to outdoor air and water in flowing or standing environments. In support of the AMP review, the

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surface water reviewer would like to tour the berm that separates the CCS from Biscayne Bay. (Ford)

Note: Michelle Moser (terrestrial resources reviewer) should be included on tours of the cooling canal system and any tours for aquatic resources. Similarly, Briana Grange (aquatic resources reviewer) should be included on terrestrial resource tours. This need is generally reflected in the requests above.

Audit Meetings

1. Please set up a meeting with the FPL biologists that perform crocodile monitoring, threatened and endangered species surveys, and resource planning, and that interface with the Fish and Wildlife Service or National Park Service staff regarding aquatic and terrestrial resources. (Moser and Grange)
2. Provide an opportunity for NRC staff (Grange and Moser) to meet with knowledgeable FPL personnel, such as onsite biologists, regarding the aquatic ecology of the site and the staff's site audit needs. This meeting can be combined with any terrestrial ecology meetings and the meeting request below, as appropriate. If not combined, please schedule this meeting such that the aquatic ecology reviewer (Grange) can also attend the terrestrial ecology and hydrology meetings.
3. Please set up a meeting with the FPL biologists that perform threatened and endangered species surveys and resource planning at PTN and that interface with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and National Park Service staff regarding aquatic and terrestrial resources. (Grange and Moser)
4. Air Quality and Meteorology Meeting: Please provide for a breakout meeting with FPL's subject matter expert(s) and/or the contractor(s) to discuss the air quality portions of the ER, particularly air permits and emission inventories associated with facility operations, and stationary and mobile sources of air pollutants. This meeting would be used as needed to resolve or clarify any immediate outstanding data needs or questions arising from the site visit. (Hoffman)
5. Discussion with plant personnel knowledgeable of radiological protection and radwaste systems. (Typically a staff HP) Note: From past audit experience, most, if not all, of this information is discussed on the requested tours if the knowledgeable plant personnel participate in those tours. If that will be the case, NRC won't necessarily need separate breakout meetings for the discussions listed below. (Clark and Rautzen)
 - a. Radiation Protection Program: Overview of the program with emphasis on the ALARA program to control worker radiation exposure (annual dose goals and status). Are there any proposed changes or upgrades to the program being considered during the license renewal term?
 - b. Radioactive solid waste: review how the plant plans to handle low-level radioactive waste (Class A, B, and C, mixed waste, and spent nuclear fuel) during the license renewal term (onsite storage, potential expansion of storage facilities, and disposal options). Are there any proposed changes or upgrades to the program being considered during the license renewal term?

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- c. Radioactive gaseous and liquids effluents: review how the plant processes radioactive effluents to maintain radiation doses to the public to levels that are ALARA. Are there any proposed changes or upgrades to the program being considered during the license renewal term?
6. We would like to better understand the modeling studies and attendant projections listed below. At the audit, we would like an on-site presentation by knowledgeable staff on these models; including any recent updates. We are interested in understanding the projections of cooling canal salinities, of impacts on Floridan Aquifer groundwater users, and of the efficacy of the planned recovery well system operation in retracting the hypersaline plume. Please allow time for questions from NRC staff and contractors. (Folk and Ford)
 - a. In 2016, TETRA TECH finished for FPL, “A Groundwater Flow and Salt Transport Model of the Biscayne Aquifer”. One of the purposes of this model is to assess the efficacy of the recovery well system to retract the hypersaline plume in the Biscayne Aquifer west and north of FPL's property.
 - b. In 2014 TETRA TECH completed an “Evaluation of Drawdown in the Upper Floridan Aquifer Due to Proposed Salinity Reduction-based Withdrawals”. To reduce the salinity within the cooling canal system, water from the Upper Floridan Aquifer will be discharged into the cooling canal system. This model was used to determine potential impacts to other users of Floridan Aquifer water from the withdrawal of Floridan Aquifer groundwater.
 - c. Also in 2014, TETRA TECH completed an “Evaluation of Required Floridan Water for Salinity Reduction in the Cooling Canal System”. Water and salt balance modeling of the cooling canal system was performed to assess the volume of water from the Floridan Aquifer required to reduce the salinity of cooling canal system water to seawater concentrations. Reducing the salinity in the cooling canal system is predicted to reduce the contribution from the CCS to the hypersaline plume in the Biscayne Aquifer.
7. Please provide for a meeting with FPL’s groundwater and surface water technical experts, including staff who prepared the relevant portions of the ER. (Folk and Ford)
8. Please provide for a meeting with FPL’s subject matter expert(s) and/or the contractor(s) responsible for writing the Socioeconomics portions of the ER. This meeting will be used as needed to resolve or clarify any outstanding data needs or questions arising from the environmental audit. (Martinez)
9. Please provide for a meeting with FPL’s subject matter expert(s) and/or the contractor(s) responsible for writing the historical and cultural portions of the ER. This meeting will be used as needed to resolve or clarify any outstanding data needs or questions arising from the environmental audit. (Martinez)
10. Please provide for a meeting with FPL’s subject matter expert(s) and/or the contractor(s) responsible for writing the replacement power portions of the ER. This breakout session would be used as needed to resolve or clarify any immediate outstanding data needs or questions arising from the site visit. (Hoffman)

Questions and Document Needs

Specific questions, requests, and document needs are provided below by resource area.

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Land Use and Visual

- LU-1 As explained in the ER, the Federal Coastal Zone Management Act requires applicants for a federal license to certify to the licensing agency that the proposed activity would be consistent with the state's federally approved coastal zone management program. Regulations require the license applicant to provide its certification to the federal licensing agency and a copy to the applicable state agency. Section 9.5.10 of the ER, Coastal Zone Management Act, states:

FPL received confirmation of coastal zone certification in a letter dated March 9, 2012, from the FDEP to the USACE (FDEP 2012). The operating agreement between the FDEP and participating agencies identifies the final order issued as part of the PPSA as the CZMA consistency for the authorized power plant. Therefore, PTN has fulfilled the regulatory requirement to certify to the licensing agency that the proposed activity would be consistent with the state's federally approved coastal zone management program.

The NRC recognizes that NOAA regulations are applicable to the renewal of federal licenses for activities not previously reviewed by the state (15 CFR 930.51(b)(1)). Please explain how a certification contained in a letter from the FDEP to the USACE dated March 9, 2012 is a basis for your coastal zone consistency determination for this second license renewal.

Air Quality and Meteorology

- AQ-1 Has FPL received any notices of violation or non-compliances from the Florida Department of Environmental Protection (FDEP) regarding PTN Air Permit No. 025003-021-AV subsequent to the period discussed in ER Section 3.3.3.2 (i.e., 2012-2016)?
- AQ-2 Have field tests concerning ozone and nitrogen oxides emissions generated by FPL's 230 kV in-scope transmission lines been conducted? If so please, provide a copy of these tests.
- AQ-3 Has FPL completed the 2018 renewal application of the Title V Insignificant Activities list incorporating the FLEX equipment inventory? If so please, provide a copy of this list if it differs from that presented in ER Table 3.3-11.

Groundwater Resources

- GW-1 As referenced in Sections 3.6.1.4.5 and 3.6.3.2.1 of the ER and in the April 2018 ER supplement, provide a status update regarding the construction and commissioning of the Recovery Well System for hypersaline plume abatement. Summarize, at a high-level, the as-built components of the Recovery Well System including well configuration(s) and well spacing, well construction specifications, and piping configurations and routings between the recovery wells and the deep well injection point.
- GW-2 Provide a summary (by month) of the volume of groundwater withdrawn from the following well systems over the last 3 years, as well as 2018 year-date: (1) the six wells comprising the Upper Floridan Aquifer CCS freshening system (ER Sections 3.6.1.4.5/3.6.3.2); (2) the three Biscayne Aquifer "marine" wells (ER Section 3.6.3.2); (3) the ten Biscayne Aquifer wells constituting the

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Recovery Well System (ER Sections 3.6.1.4.5/3.6.3.2.1); and 4) the three Upper Floridan Aquifer saline production wells for Unit 5 (i.e., PW-1, PW-3, and PW-4) (ER Section 3.6.3.2).

- GW-3 As discussed in Sections 3.6.1.4.5 and 3.6.2.2.3 of the ER (and as related to questions GW-1 and GW-2), provide a status update of ongoing and planned salt removal efforts and disposal of hypersaline groundwater into the Boulder Zone. Specifically, provide a summary (by month) of the volume of hypersaline groundwater and salt withdrawn and reinjected into the Boulder Zone since operations began in 2016 through 2018, year-to-date. Summarize any monitoring of upper aquifers and leak testing of the injection wells to protect overlying aquifers. In addition, provide a summary of any water quality monitoring that is conducted of the reinjected groundwater. Please plan to have knowledgeable staff available at the audit to discuss the injection of water into the Boulder Zone.
- GW-4 Sections 3.6.4.2.1 and 4.5.5.4 of the ER provide a summary and an assessment, respectively, of historic inadvertent releases of radionuclides to groundwater covering the period 2012-2016 and ER Tables 3.6-6 and 4.5-1 summarize groundwater protection monitoring results for tritium. NRC notes that ER Table 4.5-1 summarizes data from the 2016 annual radiological environmental operating report. As the 2017 operating report is pending, provide the latest quarterly, validated groundwater protection monitoring results covering all monitored parameters (i.e., tritium, potassium-40, cesium-137 and any other monitored radionuclides) for the 28 wells and 4 storm drains in the program for 2018. Identify the date(s) of the quarterly samples.
- GW-5 As described in Section 3.6.4.1.1 of the ER, provide the latest available results for tritium and any other monitored radionuclides in the CCS as well as in underlying groundwater and identify the sampling date(s).
- GW-6 Provide a description of any documented inadvertent radiological releases that have occurred since April 2016. Describe the impact on the environment and provide a summary of radionuclide concentrations in nearby monitoring wells and storm drains from the date of discovery of the release to the present time. Also, include a description of any ongoing or completed remediation actions and the residual activity (e.g., concentration in groundwater) remaining after the remediation was completed, if it is not ongoing (ER 3.6.4.2.1).
- GW-7 Section 9.3 of the ER summarizes historical regulatory infractions including notices of violation issued to PTN. As applicable, provide an updated summary of and describe any Notices of Violation; nonconformance notifications; or related infractions received from regulatory agencies associated with permitted discharges, sanitary sewage systems, groundwater or soil contamination, as well as any involving spills, leaks, and other inadvertent releases (e.g., petroleum products, chemicals, or radionuclides) received since 2016. Provide copies of relevant correspondence to and from the responsible regulatory agencies.
- GW-8 As discussed and cited in Section 3.6.2.4 of the ER, has the potentiometric surface (groundwater elevation) mapping illustrated in ER Figures 3.6-4 through 3.6-9 for the PTN site been updated? If so, provide the updated figures.
- GW-9 As referenced in Sections 3.6.1.4.5 and 9.3 of the ER and as described in recent media reports, describe the status and features of FPL's plans for use of reclaimed wastewater in lieu of groundwater to freshen the CCS?
- GW-10 The Consent Agreement Annual Report for 2016 is referenced in Section 2.2.3.2 of the ER and the 2016 Consent Agreement Amendment with MDC is discussed and reference in Section

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3.6.1.4.5 and elsewhere in the ER. Please provide a copy of the latest annual report for review, as applicable, as well as the 2016 Amendment.

GW-11 Please provide a map of storm drain locations to include those in the plant groundwater protection monitoring program (ER Section 3.6.4.2.1).

Terrestrial

- T-1 Section 3.7.5.1 describes several invasive terrestrial species that are known to occur within Southern Florida and along transmission lines (that are not within the scope of this review). In addition, the ER states that nonindigenous plant species identified in the cooling canal system are systematically removed during ongoing berm vegetation maintenance activities.
- a) Please provide a list of the nonindigenous plant species that FPL has observed within the cooling canal system and within the PTN site.
 - b) Please describe the frequency and methods for vegetative maintenance activities within the cooling canal system.
- T-2 Section 3.7.7.1 states that FPL proposed a broad-scale vegetation assessment to characterize the distribution and density of vegetation on the PTN site as part of the ecological monitoring required by the State of Florida's site certification process for Units 3 and 4. Provide a summary and update of any vegetative surveys that have occurred since the site certification for Units 3 and 4 was granted in 2009.
- T-3 Section 3.7.8.2 describes State-listed species that occur within Miami-Dade County. The ER also states that the full extent of which state-listed plant species occur within all proposed project areas is undetermined and refers to Section 2.4.1.3 of the NRC's Final Environmental Statement (EIS) for Units 6 and 7. Tables 2-14 and 2-15 within Section 2.4.1.3 of the NRC's Final EIS for Units 6 and 7 describes whether each State-listed species has been observed on the PTN site. Please describe whether there have been any recent observations of State-listed species not included in Tables 2-14 and 2-15 of NRC's Final EIS for Units 6 and 7.
- T-4 Section 3.7.8.4 describes the Bald and Golden Eagle Protection Act (BGEPA). FPL states that current and future bald eagle nests located on the PTN site would be subject to all protections under the BGEPA. Please describe all known occurrences of bald and golden eagles or their nests at the PTN site.
- T-5 Section 3.7.8.5 describes species protected under the Migratory Bird Treaty Act (MBTA) and states that several bird species protected under the MBTA visit PTN. Please provide a list of the species protected under the MBTA that have been observed on the PTN site.
- T-6 Section 4.6.5.3 states that maintenance activities during the license renewal term are expected to be similar to current activities. Please provide a summary of all current maintenance activities that have the potential to impact terrestrial resources, such as site landscape maintenance, herbicide use (other than that described in Section 9.5.14), tree or shrub removal for safety or other purposes, or other maintenance activities.
- T-7 Section 4.6.5.3 states that construction of the new independent spent fuel storage installation (ISFSI) would disturb between 2.5 to 10 ac (1 to 4 ha) of land. Please describe and quantify the type of land cover and habitats that occur within land to be disturbed, as well as a summary of any biota that inhabit that area.

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- T-8 Section 4.6.5.3 states that FPL may conduct land disturbing activities to construct new parking areas for plant employees, access roads, buildings, and facilities. Section 4.6.5.3 also states that temporary project support areas for equipment storage, worker parking, and material laydown areas could result in the disturbance of habitat and wildlife. For each activity, please provide the following:
- a) The location where construction or maintenance activities would occur
 - b) The amount of land that would be disturbed, broken down by land cover or habitat type.
 - c) A list of biota that inhabit the area where activities would occur.
- T-9 Section 4.6.5.3 states that environmental review procedures, best management practices (BMPs), and a stormwater management plan would reduce impacts to terrestrial resources by controlling fugitive dust, runoff, and erosion from project sites; reducing the spread of invasive nonnative plant species; and reducing the disturbance of wildlife in adjacent habitats. Please provide a summary of the environmental review procedures, BMPs, and stormwater management plan that would help reduce impacts to terrestrial resources.
- T-10 Please describe whether FPL plans to initiate or continue any restoration activities for terrestrial resources at the PTN site during the period of extended operations, such as the Everglades Mitigation Bank.

Aquatic

- A-1 Section 3.7.3 of the Environmental Report (ER) describes the cooling canal system (CCS) and aquatic resources associated with the CCS, and Table 3.7-1 lists the aquatic species present in the CCS. The information in these sections is primarily derived from surveys performed in November 2007 in support of the Turkey Point, Units 6 and 7, combined license application. Provide an updated description of the aquatic environment and an updated list of species currently present in the CCS with focus on what changes to the aquatic environment and species presence/composition have occurred since 2007. If the description in Section 3.7.3 and list of species in Table 3.7-1 of the ER continues to accurately depict the aquatic community, please confirm that this information remains relevant. Include a statement regarding scientific uncertainty to the extent that such a statement is appropriate.
- A-2 The CCS has undergone a number of environmental changes and fluctuations in the past several years, including increases in salinity concentrations, temperature fluctuations, high turbidity, seasonal algal blooms, chemical treatments in connection with the algal blooms, and generally degraded water quality. Summarize these factors. Describe how these changes have affected fish populations in the CCS and how these factors have generally altered the value of the CCS as habitat for aquatic species.
- A-3 Section 3.7.1.1 of the ER describes other (non-CSS) onsite aquatic resources. The information presented in this section is primarily derived from surveys performed in 2009 in support of the Turkey Point, Units 6 and 7, combined license application. Provide an updated description of these onsite aquatic resources. If the descriptions in Section 3.7.1.1 of the ER continues to accurately depict the aquatic community, please confirm that this information continues to be relevant. Include a statement regarding scientific uncertainty to the extent that such a statement is appropriate.
- A-4 List and provide brief summaries of all aquatic resource surveys and studies performed on the PTN site from pre-construction through present day.

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- A-5 Provide copies of any aquatic resource surveys or studies performed on the PTN site that have not already been submitted to the NRC in connection with the previous PTN license renewal or the Turkey Point, Units 6 and 7, combined license application.
- A-6 Describe how fish interact with the cooling water intake system. For the intake, include the approach velocity that a fish would experience at the intake point, descriptions of intake screen operation and mesh size, and fish return systems (if any). For the discharge, include the average monthly temperatures of effluent discharge and a characterization of the associated thermal plume.
- A-7 Provide an analysis of how impingement and entrainment during the proposed license renewal term would affect aquatic resources in the CCS.
- A-8 Provide an analysis of how thermal effluents during the proposed license renewal term would affect aquatic resources in the CCS.
- A-9 Section 9.2.1 of the ER indicates that FPL has implemented an ecological monitoring plan as a requirement of the Florida conditions of certification for PTN. Provide a copy of this plan as well as any associated monitoring reports that FPL has produced in connection with this plan.
- A-10 Provide a copy of the application(s) submitted to the U.S. Army Corps of Engineers in connection with the dredge and backfill activities described in Section 9.5.3.1 of the ER.

Special Status Species and Habitats (U.S. Fish and Wildlife Service)

- SS-1 Section 3.7.7.5 of the ER, describes least tern (*Sterna antillarum*) monitoring studies. Please provide a copy of all least terns monitoring surveys.
- SS-2 Section 3.7.7.6 of the ER, describes eastern indigo snake (*Drymarchon corais couperi*) monitoring studies by the Orianne Society. Please provide a copy of all indigo snake monitoring surveys.
- SS-3 In its ER Supplement, FPL states that all impacts to the American crocodile (*Crocodylus acutus*) and its designated critical habitat will be beneficial or remain the same as experienced during license renewal. The NRC's Section 7 consultation under that Endangered Species Act require the staff to describe all impacts to the American crocodile and its designated critical habitat, even if the impacts are beneficial or remain the same as during current operations.

Please discuss the beneficial as well as the adverse impacts to the American crocodile and its designated critical habitat during the period of extended operations, such as changes to nesting habitat or crocodile health, changes to water quality parameters within the cooling canal system, and any procedures to mitigate the impacts from PTN operations on the American crocodile and its designated critical habitat.

- SS-4 In its ER supplement to Section 4.6.6.4, FPL describes the potential for several species to occur on or within the vicinity of PTN, as well as the potential impacts to these species. For Carter's mustard (*Warea carteri*), the ER supplement describes why impacts would be minimal to this species. However, the ER supplement does not describe the potential for this species to occur on or within the vicinity of the site. Please describe any known occurrences of Carter's mustard

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on or within the vicinity of PTN.

- SS-5 In its ER, FPL listed the ivory-billed woodpecker (*Campephilus principalis*), as common species in Table 3.7-11, "Common Wildlife Species of Southern Florida." This species is currently listed as endangered under the Endangered Species Act. However, neither the ER nor the Supplement to the ER, describes the potential for the species to occur on or within the vicinity of the site. Please describe any known occurrences of ivory-billed woodpecker on or within the vicinity of PTN.

Special Status Species and Habitats (NMFS Species and EFH)

- SS-6 In FPL's April 10, 2018, Supplement to the ER, FPL concludes that the proposed license renewal would have no effect on federally listed species in Biscayne Bay because the PTN does not intake or discharge cooling water to Biscayne Bay, Card Sound, or other waters of the U.S. To support this conclusion, describe any impacts that federally listed aquatic species could experience during the proposed license renewal term including:
- water quality changes or degradation associated with groundwater exchange between the hypersaline plume under the CCS and Biscayne Bay;
 - sedimentation or other water quality impacts that would result from land-disturbing activities to construct new parking areas for plant employees, access roads, buildings, and facilities and associated temporary project support areas for equipment storage, worker parking, and material laydown areas described in Section 4.6.5.3 of the ER;
 - construction of the new independent spent fuel storage installation (ISFSI) described in Section 2.2.6.5 of the ER;
 - dredging and backfill activities in the Barge Basin and Turtle Point described in Section 9.5.3.1 of the ER;
 - barge traffic associated PTN that would occur during the proposed license renewal period; and
 - any other relevant activities that could result in effects on federally listed aquatic species during the license renewal term.

In the discussion, consider each of the following species:

- a. shortnose sturgeon (*Acipenser brevirostrum*)
- b. Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*)
- c. Nassau grouper (*Epinephelus striatus*)
- d. smalltooth sawfish (*Pristis pectinata*)
- e. loggerhead sea turtle (*Caretta caretta*)
- f. green sea turtle (*Chelonia mydas*)
- g. leatherback sea turtle (*Dermochelys coriacea*)
- h. hawksbill sea turtle (*Eretmochelys imbricata*)
- i. Kemp's ridley sea turtle (*Lepidochelys kempi*)
- j. Florida manatee (*Trichechus manatus*)

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- SS-7 In the April 10, 2018, Supplement to the ER, FPL concludes that the proposed license renewal would have no effect on essential fish habitat in Biscayne Bay because PTN does not intake or discharge cooling water to Biscayne Bay, Card Sound, or other waters of the U.S. To support this conclusion, describe any impacts that could result on the aquatic habitats of Biscayne Bay, Card Sound, or other waters of the U.S as a result of:
- water quality changes or degradation associated with groundwater exchange between the hypersaline plume under the CCS and Biscayne Bay;
 - sedimentation or other water quality impacts that would result from land-disturbing activities to construct new parking areas for plant employees, access roads, buildings, and facilities and associated temporary project support areas for equipment storage, worker parking, and material laydown areas described in Section 4.6.5.3 of the ER;
 - construction of the new independent spent fuel storage installation (ISFSI) described in Section 2.2.6.5 of the ER;
 - dredging and backfill activities in the Barge Basin and Turtle Point described in Section 9.5.3.1 of the ER;
 - barge traffic associated PTN that would occur during the proposed license renewal period; and
 - any other relevant activities that could result in effects on federally managed species with designated essential fish habitat during the license renewal term.

In the discussion, consider the habitat of each of the following species:

- k. gray snapper (*Lutjanus griseus*)
- l. dog snapper (*L. jocu*)
- m. mutton snapper (*L. analis*)
- n. bluestriped grunt (*Haemulon sciurus*)
- o. white grunt (*H. plumieri*)
- p. spiny lobster (*Panulirus argus*)
- q. pink shrimp (*Farfantepenaeus duorarum*)

- SS-8 Attachment B of the ER includes letters sent to the U.S. Fish and Wildlife Service and National Marine Fisheries Service dated January 30, 2018. Provide copies of any subsequent correspondence between these agencies and FPL.

Historic and Cultural Resources

- HC-1 On January 30, 2018, FPL issued letters to the Florida State Historic Preservation Officer and Federally recognized Indian tribes regarding PTNs subsequent license renewal application:
- a) Provide copies of letters and other communication documents from the Florida SHPO and Federally recognized Indian tribes that FPL has received since the January 30, 2018 letters.

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- b) Provide copies of letters and other communication documents sent to the Florida SHPO and Federally recognized Indian tribes since January 30, 2018.
- HC-2 Approximately what percentage of land within the boundaries of the 9,640-acre FPL Turkey Point property is undisturbed? Provide a map detailing the level of previous and existing ground disturbance at the plant site, including documentation on how this level of disturbance was determined.
- HC-3 Section 3.8.5 of the ER identifies cultural resource surveys that have been conducted within FPLs 9,460-acre property.
 - a) Approximately what percentage of the Turkey Point 9,460-acres site has been surveyed collectively between these cultural resource surveys?
 - b) Does FPL have a comprehensive map of the Turkey Point site property that identifies site locations previously surveyed?
- HC-4 Section 3.8.6 of the ER identifies administrative controls FPL has in place for management of cultural resources ahead of ground-disturbing activities at the site. Additionally, Section 6.2.2 of the ER states that permits and programs discussed in Chapter 9, including a cultural resource protection plan, “continue to satisfactorily mitigate the range of PTN operational environmental impacts.”
 - a) Does FPL have a Cultural Resources Management Plan? If so, provide a copy.
 - b) Does FPL have a cultural resource protection plan? If so, provide a copy.
 - c) Provide a copy of the Environmental Control Program for Turkey Point Plant, Units 3 & 4 Construction Activities, mentioned in Section 3.8.6.
- HC-5 Section 3.2.3 of the ER states that “Beyond the 6-mile radius, on land, the existing units are not visible. However, from the water in Biscayne Bay, the existing units can be clearly seen.” and Section 3.8.4 of the ER states “The NRHP Jones Family Historic District... is slightly beyond the 6-mile radius from PTN” and the portion on Totten Key is separated from PTN by only open water. The remains of the home and other features on Totten Key have been subjected to the harsh environment and are no longer standing. Visibility over open water is limited by the curvature of the earth and is approximately 3 miles from standing height. As such, it is unlikely that PTN is visible from the Jones Family Historic District.” Have any studies been conducted to confirm that PTN is not visible from the Jones Family Historic District?

Socioeconomics

- SOC-1 Provide FPL property tax payment information for the year 2017, if available, similar to the data provide in Table 3.9-3 of the ER.
- SOC-2 Section 3.9.5 of the ER discusses local government revenues and personal property tax paid by FPL on behalf of PTN.
 - a) Besides Miami-Dade property tax payments, describe and provide any other sizeable annual support payments (e.g., emergency preparedness fees and payments or fees because of the independent spent fuel storage installation), one-time payments, or other forms of non-tax compensation (if any) provided to local organizations, communities, and jurisdictions on behalf PTN.

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- b) Describe and provide annual Miami-Dade County sales taxes from PTN operations expenses.

SOC-3 Section 2.5 of the ER identifies that PTN currently has 366 contract workers. Provide a count or estimate of contract workers needed to support operation of PTN for the previous 5 years.

SOC-4 Table 3.9-3 of the ER provides FPL's property tax payments for 2012 through 2016. The table identifies that there was an increase in PTNs property tax payments between 2012-2013 and 2013-2014 (property tax payments increased by approximately 4.5 times from 2012 to 2013 and then increased by 1.4 times from 2013 to 2014). Section 3.9.5 of the ER states that the "payment increase coincides with the Units 3 and Units 4 EPU going into service and the lien date..." PTN's EPU LAR Supplemental Environmental Report (ADAMS No. ML103560183) identified that PTN planned to "implement the modifications necessary to support the power uprates at PTN 3 and 4 during the 2010, 2011 and 2012 refueling outages. Upon NRC approval of the EPU license amendment request and following completion of the scheduled outage periods as well as completion of power ascension and testing, PTN 3 is expected to begin operating at the EPU core rated power level of 2644 MWt in the spring of 2012, and PTN 4 in the fall of 2012."

Were the modifications for EPU and operation at EPU power levels the cause of the property tax payment increases from 2012 to 2013 and 2013 to 2014? If not, please describe the reason for the increases.

Environmental Justice

EJ-1 Section 3.11.3 of the ER states that local government officials, staff of social welfare agencies, and the Miccosukee Indian Tribe were contacted concerning resource dependencies or practices.

- a) Identify the nature of these communications (e.g., letters, emails, phone calls, in person meetings).
- b) Provide copies of letters and other communication documents to and from the contacted entities.

EJ-2 As referenced in the ER, outreach concerning resource dependencies or practices was conducted by FPL in support of the Turkey Point, Units 6 and 7 COL application, submitted to the NRC in 2009. Has FPL conducted additional outreach to identify unusual resource dependencies or practices or health conditions that could result in potentially disproportionate impacts to minority and low-income populations since 2009?

Waste Management (rad and non-rad)

WM-1 Provide procedures related to the radioactive and nonradioactive Waste Management Program, Waste Minimization Program, Chemical Control Program, General Industrial Safety Requirements, and Electrical Safety.

WM-2 In section 3.6.4.2.1 of the ER, FPL stated that since 2012, there have been nine unplanned releases of radioactive materials. The last unplanned release referenced in the ER was April 23, 2016. Have there been any reportable unplanned releases of radioactive materials which would trigger a notification requirement since the ER was written? Provide a description of releases.

WM-3 In section 3.6.4.2.2 of the ER PTN stated that based on the review of site records for the most recent 5 years (2012–2016), there has been no inadvertent release that would not be classified

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as an incidental spill. Provide the most current records to see if there have been any reportable inadvertent release which would trigger a notification requirement since the ER was written.

- WM-4 PTN is subject to the reporting provisions of 40 CFR Part 110 as it relates to the discharge of oil in such quantities as may be harmful pursuant to Section 311(b)(4) of the Federal Water Pollution Control Act. Any discharges of oil in such quantities that may be harmful to the public health or welfare or the environment must be reported to the National Response Center. In section 9.5.3.7 of the ER, the applicant discusses reportable spills, and states that for the 5 year period of 2012-2016 there were no reportable spills. Have there been any reportable spills which would trigger this notification requirement since the ER was written? Please provide a description of any spills.
- WM-5 PTN is subject to the reporting provisions of FAC 62-780.110. This reporting provision requires that any release of oil having the potential to significantly pollute surface or groundwaters and which are not confined to a building or similar structure be reported to the FDEP, the coordinator of emergency services of the locality that could reasonably be expected to be impacted, and appropriate federal authorities. In section 9.5.3.8 of the ER, the applicant discusses reportable spills, and states that for the 5 year period of 2011-2016 there were no reportable spills. Have there been any reportable spills which would trigger this notification requirement since the ER was written? Please provide a description of any spills.

Cumulative Impacts

- CU-1 Please provide the name, description, location, and status of any additional past, present, or reasonably foreseeable projects or actions that have been identified since the ER was prepared.
- CU-2 Please provide the status of any agreement with Miami-Dade County to share the cost of constructing a wastewater treatment facility at the county's south district station. Who would own and operate this facility? When would this facility likely be constructed? Would treated wastewater be used to clean up the cooling canal system? Would this facility be operating and would treated waste water be flowing into the cooling canal system during the period of continued operations?

Replacement Power Alternatives

- AL-1 Identify the available location(s) on or near the FPL Turkey Point site that would be suitable for siting replacement power generation. Please identify possible locations during the general tour.
- AL-2 Identify the approximate acreage, terminal points, and orientation of the new natural gas pipeline that would be required to support the Natural Gas-fired Generation replacement power alternative discussed in ER Section 7.2.3.1.
- AL-3 ER Section 7.2.3.1.5 states that "Overall, the discharge volume for the NGCC plant would be less than the PTN discharge volume." Please provide the basis for this statement.