



EXHIBIT 11

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

LAN 04-06

July 30, 2009

Mr. Michael P. Halpin, P.E.
Administrator, Siting Coordination Office
Department of Environmental Protection
3900 Commonwealth Boulevard, MS 48
Tallahassee, FL 32399-3000

M. Halpin
Dear Mr. Halpin:

**Subject: FPL Turkey Point Units 6 & 7, PA03-45A3
Site Certification Application
First Completeness Review**

South Florida Water Management District (SFWMD) staff has completed its review of the Site Certification Application (SCA) submitted by the Florida Power & Light Company (FPL) for the above subject project, as required by Sections 403.501-539, F.S., and Rule 62-17, F.A.C. The following items need to be addressed in order for the SFWMD to complete its evaluation of the proposed project and prepare its Agency Report. Please note that the SFWMD's completeness questions/comments are provided under the following headings:

- General Project-Related Information
- Power Plant And Associated Non-Linear Facilities
- Fill Source/Rock Mine
- Electrical Transmission Line Corridors/Access Roads/Substations
- Reclaimed Water Supply Pipeline Corridor
- Roadway Improvements
- Potable Water Supply Lines
- Wetland Mitigation Proposals
- Hurricanes/Climate Change/Sea Level Rise
- General/Other
- Tables
- Figures

GENERAL PROJECT-RELATED INFORMATION

Section 1.4: Overview of the Project

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- 1) Considering that the South Miami-Dade Regional Wastewater Plant discharges effluent to deep wells, what is the basis for the statement that wastewater discharges to ocean outfalls will be reduced?
- 2) Please explain how the 300-acre fill site will be a “water management feature that will be designed to complement and enhance regional wetland rehydration projects”, as stated on page 1-6.

POWER PLANT AND ASSOCIATED NON-LINEAR FACILITIES

Section 3.0: Site and Vicinity Characterization

- 3) Regarding the description of observations during site subsurface investigations, reference is made to geophysical surveys, including seismic defraction and reflection to look for dissolution features. What dissolution features were encountered? What is the criterion for defining “large void”? Please provide all back-up material, including reports, in support of the description of observations.
- 4) Recent publications by Cunningham and others (see references below) indicate that there is a significant amount of solution features and a limited number of displacements within Biscayne Bay itself. Considering detailed seismic work conducted adjacent to the project site that shows large scale features, please explain the discrepancies between the information provided in the application and these publications. In addition, please provide all seismic (reflection, refraction), multi channel analysis of surface waves (MASW) and microgravity data (raw, processed and synthesized) collected for this project in an electronic format. Please include the raw data and interpretive analysis from the geophysical surveys referenced on page 3-26 of the application.

Prominence of ichnologically influenced macroporosity in karst Biscayne aquifer: Stratiform “super-K” zones, 2009, Cunningham, K.J, Sukop, M.C., Huang, H, Alvarez, Pedro, Curran, H.A., Renken, R.A., and Dixon, J.F., in GSA Bulletin; January /February 2009; v. 121; no. 1/2, p. 164-180.

Seismic-Sag Structural Systems in Tertiary Carbonate Rocks Beneath Southeastern Florida. USA: Evidence for Hypogenic Speleogenesis? Cunningham, K.J., and Walker, Cameron, in Hypogene Speleogenesis and Karst Hydrogeology of Artesian Basins, Proceedings of the conference held May 13 and 17, 2009 in Chernivtsi, Ukraine, Ukrainian Institute of Speleology and Karstology, Special Paper 1, 2009.

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- 5) Please submit the FPL consultant report prepared by Hydrogeologic Associates, U.S.A., Incorporated?
- 6) The cross-sections in Figures 3.3.1-4 through 3.3.1-6 show very simplistic views of the geology; however, Cunningham (2009), Janzen (see reference below) and FPL's consultant's report (Hydrogeologic Associates, U.S.A., Inc.) for Fill Source Water Management Project Area indicates a more complex system of high-flow zones characterized by macroporosity between carbonate rocks dominated by matrix porosity. Since little was done to compare the recent work of Cunningham (USGS, 2009) in Miami-Dade County to the plant site and the fill source, please review the most recent publications and provide a description of the macroporosity zones that exist at these locations.

Janzen, J.H., Sunderland, R.S.A., Krupa, S., and Gefvert, C. September, 2008, Biscayne Bay Coastal Wetlands Aquifer Salinity Investigation, Technical Publication WS-26, South Florida Water Management District

Section 3.1.4: Adjacent Properties

- 7) What is the geographical relationship of the project site to the Florida Keys National Marine Sanctuary?

Section 3.2.2: Zoning and Land Use Plans

- 8) There is a statement of page 3-26 that the Lake Belt region is 90 miles from Units 6 & 7. The Lake Belt region is actually 9 miles from Units 6 & 7. Please revise this statement, including any related conclusions and/or evaluations.

Section 3.3: Bio-Physical Environment

- 9) Please provide groundwater quality data from the onsite monitoring wells that confirms that the Biscayne aquifer at the site contains "*saline to saltwater*".
- 10) Please clarify the discrepancy between the statement on page 3-21 that "...low but continuous seaward gradient" exists and the statement on page 3-28 that "During the wet season, a seaward gradient exists...."
- 11) Regarding the statement on page 3-22 that "*..in response to the lowering of inland groundwater levels due to pumping for water supply, saltwater has migrated inland along the base of the surficial aquifer*", please provide documentation that the saltwater is moving along the base of the aquifer and not

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further up in the aquifer and that causation is attributed to water supply pumping and not other causes, such as operation of the cooling canals.

- 12) On page 3-23, the Avon Park Permeable Zone is stated to occur within the Middle Confining Unit; however, there is a statement on page 3-24 that it occurs within the Lower Floridan Aquifer. Please clarify.
- 13) There is a statement on page 3-25 concerning the “measured hydraulic conductivity value from the Miami Dade Water and Sewer Departments’ injection well.” Please provide the referenced source and supporting data.
- 14) There is a statement on page 3-29 that “The Fort Thompson Formation and Key Largo Limestone are found between 9 and 74 ft bgs”; however, page 3-27 and Figures 3.3.1-5 and 3.3.1-6 indicate “the top of the Key Largo Limestone is generally encountered between 23 and 33 ft bgs, and the top of the Fort Thompson Formation is generally encountered between 48 and 52 ft bgs”. Please clarify.

Section 3.3.4: Surficial Hydrology

- 15) The hydrological characterization (page 3-30) states that almost all of the water withdrawn from the radial collector wells will be recharged from Biscayne Bay. Please provide the analysis used to formulate this conclusion. Please quantify the volume of water withdrawn that is predicted to originate from Biscayne Bay, pursuant to Section 3.2, Sources of Water, of the Basis of Review (BOR). Please identify the modeling software used for the analysis and provide all input parameters for each withdrawal scenario considered for the application. If a non-standard method or model code was used for the evaluation, please provide a copy of the model software or calculations for peer review and verification, pursuant to Section 1.7.5.2 – Modeling Data, of the BOR. Please provide assurances that the withdrawals from the radial collector wells will not influence the migration of contaminants from the permitted wastewater treatment facility, pursuant to Section 3.5 - Pollution of the Water Resources, of the BOR. Please provide the proposed monitoring plan to be used to observe the potential for movement of contaminants from the cooling canal system. What contingencies will be used should the monitoring indicate adverse influence caused by the operation of the radial wells?
- 16) According to page 3-30, water quality was collected at Station1 (in Figure 3.3.4-2) and is presented in Table 4.5-3. That table has a header of only seawater. Is the seawater column the same as Biscayne Bay surface water? If not, please submit. In addition, please provide all water quality data in electronic format.

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Section 3.3.4.1: Site and Associated Non-Linear Facilities

- 17) Please provide rainfall pattern/climate for the project site instead of the Miami International Airport. Please provide in a spreadsheet format.
- 18) The Princeton and Mowry Canals should be identified as major tributaries.

Section 3.3.5.1: Site

- 19) Please provide any and all data that was used to create the cooling water hypersaline summary.

Section 3.3.6: Ecology

- 20) There is a statement on page 3-36 that no unusual loss in drilling mud occurred during the geotechnical investigation. Page 7 of the Geotechnical report states that "Circulation of drill fluids was typically lost at the start of coring operations due to the porosity of the limestone formations encountered at the site. As a result, large amounts of water were used to complete the borings. In borings that terminated at depths below the limestone units, circulation of drill fluids was typically regained by advancing steel casing through the limestone formations." Please explain.
- 21) Please provide geotechnical documentation to support the statement on page 3-44 that "the area is isolated due the existing roadways and the L3 canal, and does not connect to Biscayne Bay".
- 22) Please address the following:
 - What is the makeup of the benthic community 900 feet from shore under which the radial wells will be constructed?
 - Are any threatened or endangered species in Biscayne Bay near Turkey Point (e.g., *Halophila johnsonii*)?

Section 4.3: Fuel

- 23) Please provide a copy of the spent nuclear fuel disposal contract with the Department of Energy for Units 6 & 7. Please provide as an appendix.

Section 4.5: Plant Water Use

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- 24) This section (pages 4-10 and 4-11) states that the secondary makeup water source, the radial collector wells, may constitute 100 percent of the makeup water under certain conditions. This section also states that when reclaimed water is not available in sufficient quantity for the cooling water system (CWS), a combination of reclaimed water and salt water will be used as a source of cooling water. For the analysis of the plant design, and for the purposes of the evaluation of the water sources performed for the application submittal, how often is it projected that the volume of reclaimed water will not be sufficient to provide adequate flow for the cooling requirements of Units 6 & 7? Will the supply of reclaimed water be made available in timed phases or in volumetric blocks over a period of time? Please provide a time line for the delivery of the volume of reclaimed water necessary to provide the full CWS and process demands for the project. Please provide the evaluation used to determine the ratio of saline water necessary to supplement the reclaimed water during periods when the flow of reclaimed water is not sufficient to provide the full demands of the CWS and process demands for the project, pursuant to Section 3.2, Sources of Water, of the Basis of Review (BOR).

Section 4.5.1.2: Source of Cooling Water

- 25) This section (page 4-14) states that the lateral well screen from the radial collector wells will extend up to 900 feet beneath Biscayne Bay and may extend beyond FPL property. Please provide a map depicting the location of the four proposed radial collector wells, including the arrays of laterals extending beneath the bay. Please provide drilling and installation methodology, casing and screen materials, slot size and length for the well screen, technical justification for selection of the slot size, and hydraulic analysis to justify proposed well yields (30,000 gpm).
- 26) An extensive aquifer performance (APT) test for the proposed radial collector wells was conducted by FPL on the project site in early 2009; however, the APT is not mentioned in the application and no test results were provided. Please provide all test results.

Section 4.8.2: Construction Site Drainage

- 27) This section states that sedimentation barriers and traps will be installed to protect water bodies during radial well construction. What is the elevation of this work site? Given potential low elevation and submergence during seasonal high tides and storms, silt fences may not be sufficient to prevent turbidity and nutrient export to Biscayne Bay waters. Will sheet pile be used for radial well construction to contain materials influenced by wave energy?

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Section 5.1: Land Impacts

- 28) Page 5-6 refers to the construction of the Reclaimed Water Treatment Facility. Will dewatering be required for any phase of the construction of this facility? There are wetland and preserved areas in the vicinity of the facility. Please provide assurances that the construction dewatering activities will not cause harm to these areas, pursuant to Section 3.3 – Evaluation of Wetlands and other Surface Waters, of the BOR. This section (page 5-6) also discusses the construction of the radial collector wells and pipelines in a 14 acre area and refers to dewatering activities for some of these areas. Please provide a plan depicting the areas to be dewatered for the radial collector wells and associated facilities. Please provide a time line for these dewatering activities.

Section 5.1.1: General Construction Impacts

- 29) Additional details are needed to address potential impacts to Biscayne Bay, the surrounding groundwater, and the existing cooling canal system during construction of Units 6 & 7 and associated facilities. Given the known seepage and migration of a plume of existing cooling canal system water beneath the current facility, it is reasonable to expect that materials removed during grading and finishing may be hyper-saline and may contain radioactive constituents, nutrients and other waste materials. Please provide pertinent information for the “muck” that will be removed from the plant area described in Table 4.6.-1 (Waste Streams, Characterizations, and Disposal Method) and provide a detailed discussion that includes sediment core test data. In addition, please address the following:
- What steps will be taken during the grading and muck removal process to ensure that there will be no interaction of on-site groundwater and/or waters originating from the existing cooling canal system with waters of Biscayne Bay or adjacent coastal wetlands?
 - What monitoring will be provided to ensure that Biscayne Bay and surrounding wetlands areas will not be impacted?
 - What are the testing specifications (i.e., regulations/guidelines)? Will the muck be tested and evaluated for reuse? Will radioactive materials testing be included?
 - What properties will make muck unsuitable for re-use?
 - How will the muck be disposed of if not deemed acceptable for re-use?
 - What are the known properties of the sediments and materials in the area that will be graded and filled including, but not limited to, specific conductivity and temperature, salinity and nutrient content?
 - How long will muck remain in storage areas?

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- What protection is offered in the storage areas?
 - What is the estimated amount of muck to be removed?
 - How much is estimated to be unsuitable?
 - Will the storage area be adequate?
- 30) Please provide information on the estimated pumpage, the amount of groundwater that will be pumped, and the properties of water from dewatering operations that will be pumped to the existing cooling canal system. Specify sampling that will be conducted on the water to be pumped to the cooling canal system or justify with data, if sampling is not proposed.
- 31) Please provide a figure or figure reference that shows the location of the makeup water reservoir.
- 32) Please provide a figure or figure reference that shows the location of the blowdown sump. In addition, please provide a description of the blowdown sump.
- 33) Please provide a diagram showing the location of all proposed circulating water system piping. Please provide the depth of the piping described on page 5-5.
- 34) Please provide a detailed description of how water produced during dewatering of the associated non-linear facilities will be managed.
- 35) Please provide the following regarding the proposed radial wells:
- Results and data of any and all pump tests.
 - Example applications where this type of system been shown to successfully operate with no adverse environmental effects elsewhere, or a statement indicating that it has not been demonstrated in this type of application.
 - A monitoring program to ensure that there are no adverse impacts to aquatic systems of the area of the bay affected by recharge.
- 36) The modeling does not provide enough detail to support the conclusion that “the radial collector well withdrawals should have no impact on impingement or entrainment of aquatic organisms”, as stated on page 6-4. Please address the following:
- How was the velocity derived? Please provide a detailed description.
 - Please provide information (e.g., an example from another facility or field testing) to substantiate this conclusion.
 - Field monitoring of existing conditions and during construction and operation should be proposed to ensure that no impacts result.

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- 37) Please provide a description of the drilling program for the radial collector wells. Please include the methodology for the installation of the vertical caissons as well as a description of the drilling activities and methodology to be used for the horizontal drilling activities related to the radial collector well screens. Please include a description of the source for drilling makeup water as well as for the storage and disposal of drilling fluids and insitu materials removed during the well construction. Please provide a description of the monitoring program to be used to provide assurances that these activities will not cause harm to the protected areas surrounding the well locations.
- 38) Please provide the lithologic data collected during the test well phase of the project at the radial well locations. Please provide the data from the aquifer performance test (APT) that was conducted for the design of the radial collector wells. Please provide the evaluation performed for the placement of the lateral collector well screens. Please provide a description of the geologic structure as it relates to the placement of the lateral collector well screens. Was consideration given to the zones of increased permeability observed during drilling activities by others in the vicinity of the project site for the placement of the lateral collector well screens?
- 39) Please provide recent detailed survey information derived from field measurements and a map which includes existing benthic biota in the entire area of the lateral and radial well cone of influence. In addition, please address the following:
- What is the potential for disturbance to existing benthic biota and water quality from sediment disruptions as a result of construction?
 - How will this be accomplished without disturbing benthic biota and influencing water quality?
 - Please provide an analyses showing that no adverse impacts will occur during construction of radial wells and related pipelines and laterals impact to the adjacent waters of Biscayne National Park. The analysis should include effects of potential sediment disturbance (turbidity, release of constituents from sediment disruption, reduced water clarity, etc.) on nearby aquatic resources.

Section 5.2.1.2: Impact Assessment

- 40) The conclusion that no significant impacts to surface waters resources is anticipated to occur during construction activities does not appear to be substantiated, particularly considering the acknowledged connection between the existing permitted wastewater treatment facility and Biscayne Bay. Please provide all the test data from any test drilling and salinity profiles of the aquifer, including any relevant hydrologic and chemical tests.

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- 41) Will all basins used for onsite sedimentation and waste treatment be lined?
- 42) The application indicates that various wastewaters from construction will be discharged into the cooling canal system. This includes dewatering for the foundation construction, wastewater from concrete production, and hydrostatic testing water, and various rinses. Please address the following:
- Are these discharges permitted under the existing industrial wastewater permit?
 - Will a modification to this permit be necessary?
 - What are the potential impacts to Biscayne Bay?
- 43) Please address the following concerning the proposed barge canal dredging:
- What is the nutrient and contaminant (particularly hydrocarbon) concentration of materials proposed to be dredged?
 - Will the dredging site be subject to wave energy? If so, turbidity curtains or silt screens may not be sufficient to contain turbidity and prevent nutrient release in Biscayne Bay.
 - Will sheet pile be used to isolate this area?

Section 5.3: Groundwater Impacts

- 44) A geo-hydrologic model (Visual MODFLOW) was used to simulate the withdrawal of 26 MGD to represent the dewatering activities for the power block area. The text states that approximately 50 percent of the dewatering flow was predicted to originate from Biscayne Bay. Please explain the analysis used to determine this volume and provide quantification of the predicted induced seepage from the bay over the duration of the dewatering activities. Was a density dependent model used for the analysis? Please provide the calculations used to derive the rate of dewatering withdrawals. Please provide the aquifer performance test (APT) data that was used to determine the aquifer parameters used for the drawdown evaluation. Please provide the input files used for the dewatering drawdown simulations.
- 45) Please provide the supporting model documentation, including the following:
- Any calibration report or other documentation for the model showing the basis for selection of the parameters used.
 - The error statistics associated with the model.
 - Salinity values and water levels generated by the model, rather than qualitative terms used (i.e., "less saline", "more saline", "negligible impacts on water levels," etc.).

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- 46) Was modeling performed to demonstrate the industrial wastewater facility's capability (cooling canal system) to accept the dewatering volumes from the proposed dewatering efforts? It is understood that the volume of introduced flow is small compared to the volume within the cooling canal system; however, without knowledge of the duration of the dewatering, an assessment of the cumulative impact of adding 26 MGD over an extended period of time cannot be fully evaluated. Please provide all supporting documentation.
- 47) What impact will the potential raised mound associated with the filled area for Units 6 & 7 have on ground water flow?

Section 5.4: Ecological Impacts

- 48) On page 5-22, there is not enough information supplied to justify the conclusion made that "no impacts associated with enlargement of the equipment barge unloading are anticipated". Please provide additional information to justify this conclusion, including data on current aquatic resources in the area.
- 49) Please provide the details of the BMPs proposed to be used (page 5-22).
- 50) On page 5-22, there is not enough information provided to justify the conclusion that "no impacts are expected as a result of construction of radial wells on the Turkey Point peninsula". Please provide additional information to justify this conclusion, including data on wetland and aquatic vegetation in the caisson construction area. How will this area be affected by construction, particularly in the event of storms?

Section 5.4.1.2: Aquatic Systems/Wetlands (also Section 6.1.3)

- 51) What effect will the flux velocities produced by the radial wells have on the normal tidal groundwater fluxes and subsequent potential impacts to benthic communities?

Section 5.4.2: Measuring and Monitoring Programs

- 52) Other than crocodile monitoring, no ecological measuring or monitoring programs are proposed in association with this project (e.g., Biscayne Bay seagrass, sponges, coral, salinity, temperature, turbidity, nutrients, and chlorophyll a concentrations). Monitoring should be initiated prior to construction in order to document the current ecological status and should continue through project completion to document any project-related impacts.

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Section 6.0: Effects of Plant Operation

- 53) Please provide detailed description of the inflows, hydrologic regime, salinity regime, and water quality characteristics of potentially-affected areas adjacent to the project site.
- 54) Please provide a specific definition of "closed cycle, wet cooling system". Does this term preclude all potential interaction with any waters including, but not limited to, surface waters, ground waters, and tidal interchange?
- 55) Please provide data and or analyses that demonstrates that recharge from Biscayne Bay that is induced by the radial collector wells will have no adverse impact on water temperatures and salinities within Biscayne Bay waters adjacent to Turkey Point and within Card Sound.

Section 6.1.3: Biological Effects of Modified Circulation

- 56) Please provide a reference and a definition for the term "Mixoeuhaline".
- 57) Salinity of Biscayne Bay in the vicinity of Turkey Point is not only polyhaline and euhaline as stated, it is also hyper-saline at times (>38 psu). Please provide more recent estimates of groundwater into Biscayne Bay near Turkey Point. Please cite additional more recent references that are more applicable to the Turkey Point area and note the variability in the estimates.
- 58) Please provide additional details concerning the current salinity regime near Turkey Point. What is meant by the term "average salinity" (text states "average salinity of Biscayne Bay near Turkey Point is 34 ppt")? Please verify that correct salinity units are being used. Please describe how this number was derived and calculated. In addition, please address the following:
 - Is this an annual average, a daily average, or something other?
 - How many years of data were used to calculate this average?
 - What stations of data were used to calculate this average?
- 59) On page 6-2, please provide the location on the referenced figure for salinity measurement station BB41.
- 60) Station BB41 is well offshore to the north of Turkey Point and not representative of salinity conditions near the radial well collection area. The near-shore areas (near the collection wells) have been shown to have a different salinity regime than BB41. Please provide salinity regime analyses with additional salinity

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stations near Turkey Point including, but not limited, to BB44, BB45, BB47, and BB48. Please include with the analysis data from Biscayne National Park stations in the near-shore area.

- 61) Not enough information is provided to evaluate the discussion provided on effect of salinity regime to Biscayne Bay from radial well collection data. Please provide a copy of the working model (referenced on page 6-3) used to evaluate potential impacts of radial collector wells on salinity regime of Biscayne Bay and all input and output data, including complete model calibration information. Please provide the error statistics of the model and show this on corresponding Figures 6.1.3-2 and 6.1.3-3.
- 62) The text in the second paragraph on page 6-3 which states salinity “not as quite as low” and “dry periods salinity will be not as quite as high” are very qualitative statements. Please provide quantitative information on the model estimates and state what the salinity change predicted by the model is, including error associated with the model predictions.

Section 6.1.3.1: Salinity Impact Analysis

- 63) The text in this section (pages 6-2 to 6-4) states that the salinity of Biscayne Bay is below that of seawater during the wet season due to freshwater inflow to the bay. A mixing chamber model (also referred to as a control volume analysis) was used to evaluate the impact of the withdrawals from the radial collector wells on Biscayne Bay. The application refers to salinity data from Biscayne Bay Monitoring Station BB41 being used for the salinity impact analysis. Monitoring stations of this type collect data at varying depths using sensors and other data collection equipment. Please provide documentation of the model structure, assumptions, parameter values, input data, and output data for each withdrawal scenario and identify the origin of the salinity data. If a non-standard method or model code was used for the evaluation, please provide a copy of the model software or calculations for peer review and verification, pursuant to Section 1.7.5.2 – Modeling Data, of the BOR. Please note that this analysis may need to be revised based on the response to item 60 in this letter.

Section 6.1.3.3: Wetland Impacts From Radial Collector Wells

- 64) Was groundwater modeling the basis for the conclusion drawn in this section that no adverse impacts to wetlands will occur? As requested elsewhere in this letter, please provide all model input and output data sets so that the assumptions and extent of the landwards impact of radial well operation can be evaluated.

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Section 6.1.4.2: Cooling Tower Deposition.

- 65) Please provide data and analyses showing projected salinity increase to waters including near shore and littoral zone Biscayne Bay, the wetland waters (saline and freshwater wetlands) as a result of cooling tower deposition.
- 66) Please provide data and/or analysis to show potential impacts of soil deposition and quantify potential migration into the subsurface groundwater. Please provide specific information as to where this drift deposited salt goes on an annual basis.
- 67) Will the drift contain any radiological components? If so, please estimate quantity and provide this information. Please also provide the proposed monitoring plan.

Section 6.1.5: Measurement Program

- 68) There is the potential for salinities in nearby waters (including near-shore and littoral zone Biscayne Bay and saline and freshwater wetlands) to increase due to the drift and corresponding salt loads when radial well water is used. Please provide the projected increase based on modeled salt loads to these waters. Please include specific conductivity and temperature (used to calculate salinity) monitoring data in the near shore surface waters of Biscayne Bay and pore waters of all wetlands in the cooling tower deposition zone, as shown in Figure 6.1.4-1. Please define the term "salt deposition" as used in Figure 6.1.4-1 and text within sections Section 6.1.4.2 and Section 6.1.5. Please define the potential ecologic impact to all aquatic biota within the mangrove wetlands and Biscayne Bay.
- 69) Monitoring should be initiated prior to project construction in order to determine pre-existing conditions.

Section 6.3: Impacts on Water Supplies

- 70) In exploring the deep injection well impact, was any analysis of upward migration of lower density effluent under a preferred flow path conducted? If so, please provide the analysis. If not, please explain why such an analysis was not conducted (e.g., due to the geology of the site).

Section 6.3.1: Surface Water

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- 71) Please provide field data that shows the salinity of surficial groundwater that will be withdrawn as a result of the radial well use.
- 72) Please provide the salinity value or range of values that define the term "saltwater aquifer".

Section 6.4: Solid/Hazardous Waste Disposal Impacts

- 73) What are the potential impacts from the proposed wastewater treatment plant, including any proposed sludge drying beds?

Section 10.7.7: Monitoring Programs

- 74) Please provide the geological data that was used to derive the geological contour maps.
- 75) Please provide all pump test and/or slug test data (raw and analyzed) for the wells listed in this section in electronic format.
- 76) Please submit an electronic copy of the Mactec report referenced in this section.
- 77) Please supply the electronic data and time series plot of all water level data collected for this section, in particular, Figures 7 and 8 of this section.
- 78) What was the salinity of the wells used in the contour maps? Please provide all back up field parameters for the wells used in this section.
- 79) What horizontal datum was used for the state plane coordinates in Table 1?
- 80) Are the wells listed in Table 1 screened or open hole? Staff assumes that they are screened. Please confirm. In addition, please provide the slot and gravel pack information.
- 81) Documentation is provided for ten well clusters in the footprint of Units 6 & 7. Well clusters include shallow wells, generally less than 30 feet deep, deep wells, generally 100 to 110 feet deep, and deeper wells, approximately 135 feet deep. Hydrographs are presented for wells completed in the upper and lower zones. Hydrographs show lower zones are typically 1.5 feet higher than water levels in the upper zones, indicating an upward gradient. Both dewatering and radial well pumping present a potential for lowering hydraulic head in upper zones of the aquifer and potential upwelling of lower, potentially hyper-saline, groundwater

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that could have the effect of increasing salinity in Biscayne Bay and the cooling canal system. With respect to the above, please address the following:

- Please provide water quality data, including field measurements and laboratory analysis, from all monitoring wells and test wells constructed for Units 6 & 7.
- Were variable density effects considered when evaluating the data presented in Figure 9, Appendix 10.7.7? If not, how might variable density of groundwater across the site impact water levels and the horizontal hydraulic gradient?
- Does the Modflow modeling conducted provide insight into why there is an apparent upward gradient between the L and U zoned monitoring wells or evaluate the potential impact of an upward gradient of potentially hypersaline water on the adjacent surface water in Biscayne Bay, or salinities in the adjacent cooling ponds. Was variable density modeling performed? As requested elsewhere in this letter, please supply all model input and output files.
- Please justify the usage of a porous media flow model such as MODFLOW or any other groundwater model where there is hypersaline and fresh water density issues.
- Please provide additional geological data or analysis collected from soil boring and well installation including, but not limited to, optical and geophysical logs, photographs of slabbed cores, well development data, including water quality, and correlation of lithology and/or macroporous high flow zones across the study area.
- Please provide a hydrograph or water level data for all wells included in the application.

General

- 82) Please provide an update on the status of the negotiations regarding the agreement between FPL and Miami-Dade Water and Sewer Authority which specifies that FPL will utilize wastewater as the primary source and include any revisions regarding the volume of wastewater that is projected to be provided by Miami-Dade Water and Sewer Authority to FPL on a daily basis.
- 83) Exhibit 30 of the Miami-Dade Water and Sewer Authority SFWMD Water Use Permit (13-00017-W) indicates that the source for the wastewater for the proposed FPL expansion may not be available until 2026. Page 1-5 of the application indicates that the two new reactors may be online in 2018 and 2020.

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Please provide documentation that Miami-Dade intends to speed up their schedule for wastewater supply to the plant or if the radial collection wells are to be used in the interim period.

- 84) Table 4.5-3 indicates a volume of potable water to be supplied to the proposed project at a rate of 2,553 GPM or a volume of 3.68 MGD. Please provide a letter of commitment from Miami-Dade County stating that they will have an uncommitted volume of potable water and the ability to provide service to FPL for the entire duration of the proposed plant operation. Also, please provide a letter of commitment from Miami-Dade County stating that they will have an uncommitted volume of potable water and the ability to provide for the construction water use during those phases of the project requiring such supply.
- 85) Please provide an update on the permit status of the Deep Injection Well at the site.
- 86) Figure 9 in Appendix 10.7.7 shows a reverse gradient towards the FPL cooling ponds on June 29, 2008 which would normally be considered the wet season. Please provide an explanation as to why the reverse gradient exists at the site. Please also provide any water level data from the cooling ponds and the vicinity of the existing intake structure.
- 87) Please provide the input and output model data sets and model documentation, in accordance with current ASTM modeling standards, for the dewatering simulations which show no adverse impacts to adjacent wetland systems or movement of the saline interface.
- 88) Concerning mitigation activities that may be conducted west of the L-31E Canal, between Palm Drive and C-107, how might these activities impact water levels in the L-31E and interceptor ditch, and operation of the interceptor ditch?
- 89) Please provide the input and output model data sets, and model documentation in accordance with current ASTM standards for the radial collection well simulations which show no adverse impacts. Projected drawdown maps westward of the shoreline should be included. Please provide evidence that the operation of the radial collection wells will not induce additional movement of the high chloride water in the cooling ponds further into the Biscayne aquifer. Please provide evidence that the operation of these wells will not significantly reduce the base groundwater inflows to the southern area of Biscayne Bay. Please also provide evidence that adverse drawdowns beneath the wetlands in the model lands area will not occur.

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- 90) What is the mean low tide depth of water in Biscayne Bay directly above the shallowest and deepest arms of the radial collection wells? Please provide any bathymetry data in the vicinity of the proposed wells if available.
- 91) Please address the following concerning the proposed dredging activities for the barge unloading area and issues related to barge traffic:
- What is the nutrient and contaminant (particularly hydrocarbon) concentration of materials to be dredged?
 - It is proposed that the construction area will be isolated with turbidity curtains or silt screens, but this area is subject to wave energy from storms. Not only turbidity, but nutrient release to adjacent waters should be contained. Will sheet piles be used to isolate the area?
 - Will there be a need for dredging of the barge channel in Biscayne Bay proper?
 - Will water quality monitoring of the area be implemented prior to the start of excavation and be sustained throughout the construction period? Will long-term water quality monitoring include periodic sediment hydrocarbon measurements?
- 92) Please address the following concerning the proposed muck excavation and related dewatering:
- What is the expected quantity of nutrient release?
 - Based on knowledge of water exchange rates, what is the expected nutrient loading to Biscayne Bay?
 - Is any water quality monitoring proposed within the Wastewater Treatment Facility or Biscayne Bay waters? If so, please provide the details of the proposed water quality monitoring.
- 93) Please address the following concerning potential construction impacts of Units 6 & 7:
- Please identify potential contaminants and potential effects on Biscayne Bay.
 - Statements are made regarding the treatment of chemical cleaning and construction process water (including grease) and release of these effluents into the Wastewater Treatment Facility or via deep well injection. When will the injection wells be operational for such disposal? What quantity of waste materials will enter the wastewater treatment facility versus the injection wells during construction?
 - How will potential contaminants be monitored on and adjacent to the project site, particularly Biscayne Bay?
- 94) Please address the following concerning atmospheric deposition:

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- Based on expected atmospheric emission rates and wind patterns, what is the expected pattern of atmospheric deposition of materials (e.g. N, P, S, Na, Fe, trace metals, radioisotopes) on an area basis over Biscayne Bay and the Miami-Dade County area? What is the current deposition rate of such materials? Are any changes to existing deposition rates anticipated after Units 6 and 7 commence operation?
- The application states that salt deposition effects on vegetation in saline marshes are unlikely, but what are the expected effects of this deposition on vegetation in freshwater marshes west of Turkey Point?
- What monitoring has been done and will be done to validate deposition estimates and assess potential effects?

FILL SOURCE/ROCK MINE

Section 3.2.2: Surficial Hydrology

- 95) This section concludes that there are no large sinkholes, caverns, or other large scale karst features in the vicinity of the project site. However, other studies by Cunningham, Janzen and others, not referenced in the application, provide information on macroporous high flow zones in the vicinity of the fill source site that may provide a path for saline water intrusion as a result of the excavation of the borrow pit. The results of these studies/findings should be incorporated into the application and considered in the proposed project design.

Section 3.3.3.2: Area Users

- 96) This section (page 3-28) states that, during the dry season, the ground water gradient is reversed to a westward direction due to withdrawals made by existing permitted users. Please provide the following:
- Any data collected that supports (or does not support) this conclusion.
 - The results of the evaluation for the potential of saline water intrusion related to the excavation and other mining activities at the proposed borrow pit.
 - Copies of any monitoring data, calculations, or modeling performed during the evaluation used to reach the conclusions stated in the application document as assurances that the excavation and operation of the borrow pit area will not cause additional saline water intrusion and will not prevent existing permitted users from meeting the criteria for saline water intrusion in Section 3.4 – Saline Water Intrusion, of the Water Use Basis of Review (BOR).

Section 5.4: Ecological Impacts

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- 97) The Application states that "Criteria will be established to ensure that the extraction is in the freshwater portion of the aquifer and that it does not induce saltwater intrusion into the aquifer or the water body." Please define the nature of these criteria, their quantitative basis, and uncertainty.

General

- 98) What is the basis for the expectation of no effect of salt water intrusion? Was this based on hydrologic modeling? If so, please provide the details of the modeling.
- 99) What will be the effect of this mining on the water quality in the area? Are any contaminants from the adjacent Homestead Air Force Reserve Base present in the area and, if so, how will mining affect these contaminants?
- 100) What monitoring will be done prior to mining to ensure the absence of such contaminants?
- 101) What monitoring, including water quality monitoring, will be done to determine the effect of mining if it proceeds?
- 102) Was the ground water model used in examining the impact of dewatering at the Units 6 & 7 project site (or a similar groundwater model) also used to examine the impact of removal of material from the fill source site? Although wet excavation is proposed, the difference in storage (and other losses) between porous media and open water may result in drawdown within the fill site and proximal locations. Please address.
- 103) What hydrogeologic studies have been conducted that evaluate the impacts of excavation of the fill area on salt water intrusion, including water levels and head, freshwater thickness, and potential seasonal effects? Has any modeling been conducted? Please provide.
- 104) A general lithologic description of five boreholes (NE, NW, SE, SW, SWW) is provided in Appendix A of the hydrologic Associates USA, Inc., report entitled: "Summary of Hydrologic, Geologic and Salinity Characteristics of the Florida Power and Light FPL-Owned Fill Source Water Management Project Area" (June, 2009). Please address the following:
- In the description, K is visually estimated, and there are occasional references to what may be high K flow zones, such as "cavernous

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marine limestone” or “very high K; zone of maximum K of Fort Thompson Formation”. Please provide additional geological data or analysis, if collected, from the soil boring and well installation, such as optical or geophysical logs, photographs of slabbed cores, well development data, including water quality, or correlation of lithology and/or macroporous high flow zones across the study area.

- The report references a salinity profile conducted in 2008; however, no supporting data is provided. Please provide all data, including water quality, from the 2008 profiling event. Please provide the following additional data for the 2008 and 2009 events: Details regarding the conductivity survey and sample collection methodology, including well or boring development and/or purging methods prior to each, with dates and time of surveys and time intervals between soil boring and well completion, development, and conductivity surveys and sample collection.
- Screen intervals for the five wells installed are from 10/20 feet to 70 feet bls. Water quality samples were collected at various depths and compared to conductivity surveys. Please discuss the potential impact of the relatively long screen intervals on water quality, salinity, and temperature data collected from the wells.
- Specific conductance measurements and chloride results for five wells are discussed in the text and presented in Appendices A and B. The report references a correlation between specific conductance and chlorides concentrations, and states that “In south Miami-Dade County, this [250 mg/L chloride ion concentration] chloride concentration occurs when the conductivity is approximately 1100 to 1400 micromhos/cm. Field conductivity measurements are laboratory verified”. Please provide all supporting data and analysis. Discuss the ramifications of the 470 mg/L chloride results in FPL NE and corresponding specific conductance of 1130 umhos/cm on this statement.
- The freshwater thickness for FPL NE of 34 feet does not appear consistent with chlorides concentration shown in the conductivity profile for FPL NE (Appendix B) at 20 feet of 470 mg/L. What chloride concentration, if any is used for determination of “freshwater thickness”? Please discuss the relationship between the chloride concentration of 470 mg/L at 20 feet and the freshwater thickness of 34 feet in soil boring FPL NE. What is the basis for the thickness of freshwater listed in the table on page 16?
- Conductivity profiles are shown conducted on February 17, 2009. What are the seasonal effects of water level fluctuations on “thickness of freshwater” presented on page 16?

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ELECTRICAL TRANSMISSION LINE CORRIDORS/ACCESS ROADS/SUBSTATIONS

Section W9.0: West Corridors

- 105) It appears that the Preferred Corridor spans the L-30N/L-31N Canals in the vicinity of the United States Army Corps of Engineers' (USACE) Seepage Management Pilot Project. The SFWMD is a participating partner with the USACE in this project. The work on the USACE project will take place within the western levee of the L-30N and L-31N Canals. While the current pilot project will be under construction this fall, there may be work on the full project when FPL has construction ongoing in this area. Additional information is needed to verify the presence or absence of any conflicts with this work. Please provide figures showing pole locations along the levees of these canals as well as cross sections showing the adjacent canal and levees.
- 106) The application indicates that the canal levees will be used for access by FPL to construct and maintain their facilities; however, portions of the levees may not be designed to accommodate FPL vehicles and equipment. Please provide detailed information concerning the size and weight of equipment to be used and frequency of use.
- 107) For a portion of the L-30, access is proposed without new transmission line facilities. Please describe the type of access, proposed vehicles, and frequency of use for this area.
- 108) The SFWMD has concerns related to the proximity of the corridor to SFWMD-owned communication towers and radio matrix sites. The corridor is located very close to towers at S357, Miami South, S331 Command and Control Center, and S356, and radio matrix sites at ANGL, G211, L31NS, L31NN, and S336. Please provide detailed drawings, figures, documentation, calculations and other appropriate information that show these SFWMD communication sites and any others within a one (1) mile of the corridor. In addition, please provide documentation confirming that no disruptions to SFWMD communications facilities will occur from the location, construction and operation (electromagnetic interference) of the proposed transmission line.
- 109) Please provide additional location/design information on the proposed access road improvements for the Tamiami Trail and Krome Avenue access-only corridors, including detailed plan and profile/elevation drawings showing these proposed facilities in relation to SFWMD's right of way.

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- 110) For the proposed expansion of the existing Levee Substation, which is located in the Lake Belt Area, please provide a site plan drawing showing existing substation facilities, wetlands, surface water management system, preserved wetlands, open spaces, proposed expansion areas, proposed wetland impacts, etc., overlaid on an aerial drawing.
- 111) Reference is made to Resolution No. 2008-640 between the SFWMD and FPL to declare as surplus and convey to FPL a perpetual utility, access and non-native vegetation management easement within the L-29, L-30 and L-31N rights of way and adjoining SFWMD lands both north and south of Tamiami Trail. Is the proposed project consistent with Resolution No. 2008-640? If not, please identify those aspects of the proposed project which may not be consistent and explain how potential inconsistencies will be resolved.
- 112) The proposed corridor spans both sides of L-31N and L-30. Please be advised that the SFWMD must keep one side of the levee clear for emergency and storm-related access, possible canal widening, and maintenance activity. To be consistent with the SFWMD's requirements, the corridor should be located on the west side of the L-31N and the L-30. Please provide revised drawings showing the proposed corridor on the west side of the L-31N and L-30. The corridor extending east of L-30 (Figure W9.1.0-1, Sheet 22 of 38) is about half the width. Why does the proposed corridor involving SFWMD right of way need to be wider? Are future transmission facilities proposed within the corridor along the east side of L-31N and L-30? What is the purpose of the corridor proposed on the east side of the levee? Figures W9.2.0-13 & 14 show alternative configurations W4 & W5 along L-31N. Please provide revised cross-sections showing the full width of the L-31N right of way in relation to the 900-1000' foot wide corridor.
- 113) Figure W9.4.1-1 depicts Pads 4 & 5 connecting to the L-31N right of way. Are those the only structure pads proposed to connect to the SFWMD's levee access road along the corridor? Please provide detailed plan drawings that include the full width of the L-31N right of way in relation to the 900' -1000' wide WPC and a location map for the pad locations.
- 114) Please provide a detailed profile drawing, oriented east-west, showing how the pad access ramps will tie-in to the SFWMD's levee road. What type of fill material will be utilized for the access ramps?

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- 115) Figures W9.4.1-5 & 6 reference culverts in note 1. Are the culverts proposed within the SFWMD's right of way? If so, please revise the drawings to include the culverts. In addition, please provide profile drawings showing the culverts in relation to the SFWMD's right of way. What steps has FPL taken to ensure the culverts are sized correctly to provide adequate flow through the wetlands and prevent damming or damage to the levee?
- 116) Please provide detailed plan and profile drawings showing the full width of the corridor in relation to the SFWMD's C-113 Canal, which takes a 90 degree turn along the proposed corridor.
- 117) Two wood stork colonies south of Tamiami Trail near the proposed corridor were active with successful nesting in 2009. What specific measures are being taken (per the FPL Avian Protection Plan) to prevent disturbance of these colonies? Please provide a copy of this plan and describe how it pertains to this project. What is the current status of this plan with the US Fish and Wildlife Service? Are there any ongoing or unresolved issues?

Section E9.0: East Corridor

- 118) The SFWMD also has concerns related to the proximity of this corridor to SFWMD-owned communication towers and radio matrix sites. Please provide detailed drawings, figures, documentation, calculations and other appropriate information that shows SFWMD communication sites and any others within a one (1) mile of the corridor. In addition, please provide documentation confirming that no adverse impacts will occur to existing SFWMD communication facilities from operation of the proposed transmission line.
- 119) It appears that the East Corridor will be located to the west of the L-31E Canal and the proposed reclaimed water pipeline will be located within this same area. The SFWMD will be commencing construction on culverts within the L-31E Canal on the east side. In addition, other future projects are anticipated in this area. In order to determine if any conflicts will occur, additional details are necessary. Please provide the approximate locations of poles, distance from the canal, location of reuse lines, cross-sections showing the existing canal and associated levees and any other proposed features that may pose a conflict with existing SFWMD facilities.
- 120) Sheets 12 & 13 of 20 depict the corridor very close and parallel to the SFWMD's C-100C Canal. Please provide typical plan and profile drawings showing the

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relationship of the corridor to the C-100C Canal in this area. Are any facilities or access proposed within the C-100C Canal in this area? Please describe.

- 121) Sheet 15 of 20 depicts the corridor very close and parallel to the SFWMD's C-2 Canal. Please provide typical plan and profile drawings showing the relationship of the corridor to the C-2 Canal in this area. Are any facilities or access proposed within the C-2 Canal in this area? Please describe.
- 122) As part of this corridor proposal, are any modifications proposed to Right Of Way Occupancy Permit No.7853 which authorizes FPL to use the L-31E Canal right of way as an emergency evacuation route from Turkey Point?
- 123) The SFWMD's L-31E Canal is proposed as a haul road for construction. Please describe in detail the proposed access use (short and long-term) for the L-31E, including duration, ingress and egress location, type of equipment and activities. The L-31E is not designed as a major haul road and contains a network of 40 culverts for the FPL Mitigation Bank. What steps has FPL taken to ensure the integrity of the levee and protect the culverts? Is FPL proposing to use the L-31E as a haul road for construction of the transmission line, the power plant, the reclaimed water pipeline, or for other purposes?

General

- 124) The proposed transmission line corridors cross many of the SFWMD's canals and levees. Please provide detailed plan and profile/elevation drawings showing each crossing of SFWMD canals or levees in relation to the full width of the SFWMD's right of way. The crossings should depict the power poles and guy wires outside of SFWMD right of way and the minimum vertical clearance of lines from ground/canal labeled to meet the SFWMD's clearance requirement. In the event any crossings do not meet the SFWMD's clearance requirements, FPL will be required to apply for a waiver of the SFWMD's criteria (it should be noted that FPL's response to Section 4.5.5 of the application does not indicate that they are requesting any waivers to SFWMD Right Of Way Occupancy permitting criteria). For those canals that are crossed several times, such as the C-102 (Princeton) Canal, please provide details for each crossing.

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- 125) Please provide a detailed description of FPL's access needs associated with the two corridors. The description should include types of equipment to be utilized, maintenance activities, and frequency of trips on SFWMD levee roads.
- 126) How will the SFWMD's maintenance access roads be maintained and repaired by FPL if damage occurs as a result of FPL's construction and maintenance activities? What maintenance schedule would be followed and how quickly could FPL respond to emergency repairs if the need arose?
- 127) The SFWMD's policy for access uses of the right of way is to require a financial assurance sufficient to cover repair of damages that may occur. The amounts may vary depending on the levee, intensity of use and the potential risk for damage. Please confirm that FPL is agreeable to providing a financial assurance to the SFWMD for repair of the levee road should damage occur.
- 128) The SFWMD's policy for access uses of the right of way is to require insurance sufficient to protect the SFWMD against claims that may occur. Please confirm that FPL is agreeable to providing the SFWMD with liability insurance for the proposed access use.
- 129) How will the proposed corridors impact previous permitted facilities within SFWMD right of way? What steps has FPL taken or how will FPL coordinate relocation of previously permitted facilities, if needed, and obtain the necessary permit modifications?
- 130) Appendix 10.4 (Environmental Resources Permit) provides alignment maps that depict the transmission lines passing through wetland and other environmentally sensitive areas. Will dewatering be required for the construction of the transmission lines? If so, please provide assurances that the activities will not cause harm to wetlands or protected areas.

RECLAIMED WATER SUPPLY PIPELINE CORRIDOR

General

- 131) Please provide detailed plan and profile/elevation drawings showing the proposed facilities in relation to the SFWMD's right of way. Please note that linear transmission lines/facilities proposed parallel to and within SFWMD right of way will require a waiver of SFWMD criteria, as SFWMD criteria prohibits such

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facilities within SFWMD right of way. Is FPL proposing any parallel runs within SFWMD right of way? If so, such requests need to be identified in Section 4.5.5 of the application.

- 132) Will FPL need to access the proposed reclaimed water pipeline by way of SFWMD right of way? Please describe the frequency of access, type of equipment and ingress/egress points for such access use.

ROADWAY IMPROVEMENTS

General

- 133) Please provide aerial photographs showing existing roadway footprints vs. proposed roadway footprints
- 134) Are wildlife underpasses being considered for roadways outside of the plant boundary?
- 135) A bridge crossing is proposed over the SFWMD's L-31E Canal at SW 359th Street. Please provide plan and profile drawings of the bridge that demonstrate the proposed bridge will meet SFWMD permitting criteria (minimum low member, span clearance, access, etc.). Please confirm that the proposed bridge design will not require a waiver of SFWMD criteria.
- 136) Please confirm that no other new facilities are proposed within the L-31E right of way, including water pipelines, other structures, or crossings.
- 137) A comprehensive wildlife management plan should be provided that addresses the continuous use of the proposed SW 359 Street alignment. This area is known to support panthers and is close to known indigo snake habitat.
- 138) Considering that construction activities are likely to occur on a 24-hour basis, are wildlife underpasses and wildlife fencing going to be provided to minimize impacts to wildlife during construction activities?
- 139) Was an analysis done on the hydrologic impacts that may be associated with the potential impacts that may occur as a result of possible turn lanes or flaring required for the intersection at SW 137 Avenue and SW 328 Street, which may impact the agricultural ditch on the south side? These farm ditches are all interconnected and provide flood protection for local residents. Any proposed work activities to the north could potentially interfere with the main canal.

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- 140) Please clarify which roads are to be used for temporary construction purposes and which roads will be permanent.
- 141) The application indicates that FPL is proposing shift changes at the plant to minimize traffic congestion. SW 344 Street is the current main access route to the plant. Why is there no proposal to widen SW 344 Street? Has a traffic analysis been performed? If so, please provide.
- 142) Please specify/provide the minimum design criteria for a typical service road.
- 143) In two areas, both east and west of the Card Sound Road/US1 intersection, the proposed service road alignment bisects the Florida City/Winkeye Slough just north of the Coast Guard property east of Card Sound Road and then again running west from US 1 just south of Florida City. Please provide additional design details for these roadway segments. This information is necessary to determine the environmental and hydrologic impacts the service roads will have on the area.
- 144) Are there any access control measures/plans that are going to be utilized to minimize access by off-road vehicles and illegal disposal of garbage?
- 145) Considering that the proposed fill area for 359th Street will be expanded to more than three times the current width into high quality wetlands, what is the basis for the statement "No adverse changes to vegetation, wildlife, or aquatic systems in the roadway improvement corridors is anticipated"?

POTABLE WATER SUPPLY LINES

General

- 146) Are any temporary or permanent construction activities proposed outside of existing road rights of way? If so, please provide a map identifying specific locations and a description of the proposed work activities.

WETLAND MITIGATION PROPOSALS

Section 10.4: Environmental Resources Permit

Introduction

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- 147) FPL acknowledges that “The following sections do not constitute the final mitigation project list and/or sequence for utilization. FPL is reviewing the availability and technical feasibility of these and other mitigation projects on an ongoing basis, and new information about these options or the identification of new mitigation projects to substitute for individual components of the current plan will be incorporated into the final mitigation plan.” Please provide information describing the criteria or factors that will be used in selecting mitigation measures having the greatest potential of success.

Northwest Restoration Site - Package A

- 148) Please provide information describing:

- The maintenance level of exotic treatment proposed for this mitigation measure (frequency of inspection and re-treatment with herbicides, manual removal, prescribed fire, etc).
- The anticipated funding for long term maintenance of exotic control and hydrology of this property.
- How restoration of the wetlands adjacent to otherwise private in-holdings will be accomplished without adversely impacting these parcels while also achieving the assumed restoration benefits and lift in UMAM score, as the identified parcel is not completely owned by FPL.

Water Management Feature Restoration Site – Package A

- 149) The description provided does not explain how a water management feature (WMF) would functionally be constructed and operated to provide the benefits claimed by the creation of this facility. Provide information describing or clarifying the following:

- Design requirements and construction methods and means for the WMF to isolate this feature from the surrounding aquifer, as well as the detailed cost estimates for design, construction and long term annual operation and maintenance
- The long term risk assessment of the proposed facilities.
- The extent of the proposed infrastructure to move water into the WMF (number and capacity of pumps or size and capacity of the gravity inflow structures)
- How the preserved wetlands as part of the WMF and lying south of the C-103 Canal would be managed as contiguous wetlands, or if some other concept is being considered

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- The long term viability of the WMF to store freshwater and remain isolated from the current and future coastal saltwater wedge intrusion within the groundwater aquifer
- The design criteria for operating levels of the water storage feature and anticipated volume of storage for the WMF
- The proposed infrastructure for moving water out of the storage feature (number and capacity of pumps)
- The proximity of the proposed WMF infrastructure to SFWMD right-of-way on the C-103 canal
- The long term maintenance requirements and methods to be employed for the WMF facility
- How the wetlands located on the east side of the WMF parcel would maintain their hydrologic function and hydroperiod when located in close proximity to a open water feature – what is the proposed setback of the WMF from these wetlands and method of supplemental water delivery to maintain wetland function and quality
- The acres described as occupied by the WMF in proximity to wetlands that would be preserved on-site within the WMF acreage identified on Figure 5 – text is confusing. “The Water Management Feature Restoration Site encompasses a total of 875 acres,” - “The parcels to the south of the water management feature include 577 acres of wetlands dominated by Brazilian pepper, Australian pine, and Carolina willow, as well as additional areas of palm tree nurseries. The eastern portion of the Water Management Feature Restoration Site includes a 250-acre parcel of historical palm tree nurseries currently being restored to freshwater marsh.” – “The 250-acre eastern portion of the Water Management Feature Restoration Site, currently under restoration, would be preserved and transferred to the public trust as part of the overall Water Management Feature Restoration Site mitigation alternative.” Are the acres occupied by the WMF the result of $875\text{ac} - 255\text{ac}$ (preservation from Table A) – 72 ac (preservation from Table A) = 548 acres?
- How the water availability for diversion to the WMF is consistent with the BBCW Project Implementation Report. The BBCW Project Implementation Report does not include a water management feature with water storage features.

S20A/L-31E Hydrologic Enhancement Site – Package A

150) Please provide information describing:

- The land elevations supporting the assumed flow path of water to Biscayne Bay

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- The expected water stages and water budget that are targeted for this mitigation measure on a seasonal and annual basis
- How the hydroperiods of the wetlands west of L-31E would not be impacted by the pumped withdrawal of water from L-31E for this mitigation measure
- The infrastructure (pumps) quantity, size and costs that would be employed to transfer water from the L-31E canal and the mitigation feature. Water levels in the L-31E canal are generally below the surrounding land surface.
- The increase in expected marsh stage inundation compared with the existing conditions and frequency of sustaining these improvements. The environmental lift to the wetlands described in this mitigation measure may not be sustainable due to a lack of water and the uncertain future of new water sources.

Card Sound Canal Weir Hydrologic Enhancement Site – Package B

151) Please provide information describing:

- The control elevation of the proposed weir and construction type for operability.
- The proposed operating entity that will maintain and operate this structure.
- How the response to flood control will be determined and what communications will be maintained on a 24-hr basis.

Model Lands Basin Hydrologic Enhancement Site (Reclaimed Water) – Package B

152) Please address the following:

- The proposed spreader canal for this mitigation measure is located just south of proposed pump stations designed to divert freshwater from the Florida City Canal to this region under the Biscayne Bay Coastal Wetlands CERP Project. Provide information describing how this mitigation facility would be compatible with the CERP project.
- Please provide information describing the anticipated water budget and seasonal water delivery of reclaimed water distributed over time to this region.
- Please provide information describing the targeted hydroperiod for wetlands in this region.
- Reclaimed water will contain significant concentrations of total nitrogen and phosphorus which may alter the ecology of this region due to nutrient loading. Please provide information describing means and methods to reduce concentrations of nutrients and make the reclaimed water marsh ready.

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- Please provide information describing the anticipated depth and cross section of the spreader canal for distribution of reclaimed water and the means of crossing the L-31 canal.
- Please provide costs and anticipated construction means and methods for the spreader canal.
- The anticipated environmental lift ascribed to this mitigation measure is contingent on the long term viability of the wetlands to assimilate nutrients without altering the character of the wetlands. Provide information describing what management measures would be employed to prevent the change in wetland character by addition of reclaimed water.
- Please provide information describing methods and costs related to the monitoring of the water quality associated with the addition of reclaimed water to this region (type of monitoring, frequency and parameters).
- Construction of the spreader canal through the existing wetlands would cause destruction of these wetlands and require mitigation for their loss. The UMAM calculations presented do not take this additional mitigation into consideration. Provide information describing the mitigation replacement for the loss of these wetlands.
- Provide information describing the entity that will be responsible for the long term operation and maintenance of these mitigation features and the expected annual costs of maintenance.

Model Lands Basin Hydrologic Enhancement Site (Culverts) – Package B

153) Please address the following:

- Please provide information describing how the number and placement of the culverts under 359th Street will be determined in order to not cause excessive drainage of wetlands on the north side of the road.
- Please provide information describing the approximate size and costs of culverts (length and diameter).
- Please provide information describing the entity that will be responsible for the maintenance of these culverts and the frequency of inspections between maintenance intervals.
- Please provide information describing why the placement of culverts should not be disallowed as a mitigation action. Please be advised that providing for the normal drainage of improved roads or other linear features within wetlands is typically required and in and of itself would not be considered a mitigation enhancement benefiting wetland function.
- Please provide information describing why the UMAM scores are justified based on the absence of any new water that is being delivered to these wetlands.

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Everglades Mitigation Bank

- 154) Please provide information describing the current status of available and already allocated Everglades Mitigation Bank (EMB) credits.

Hole in the Donut Mitigation Bank

- 155) Please provide information describing the current status of available and already allocated EMB credits.

Pipeline Restoration – Common Package

- 156) Exotics control on disturbed natural areas is generally a progressive process of periodic inspections and treatments until such time that native flora are effectively capable of competing with invasive species. Please provide information describing the documentation of recovery of these disturbed sites, frequency of inspections, associated costs and documentation methods to define when further treatment is no longer required.

Potential ENP Seepage Management Study Area – Common Package

- 157) Please provide the following:
- Information describing the proposed infrastructure (new levees, pumps, culverts, seepage control barriers, etc.) and their costs associated with this proposed mitigation feature.
 - Information describing the expected water stages and water budget that are targeted for this mitigation measure on a seasonal and annual basis.
 - Information describing how the hydroperiods of the wetlands west of this mitigation feature would not be impacted by water storage within the mitigation feature.
 - Information describing the source water for this mitigation feature and associated water quality that would be diverted to this mitigation feature
 - Information describing what entity would be responsible for the long term maintenance and operation of this mitigation feature.
 - Information describing the anticipated annual operating costs for this mitigation measure.
 - Information describing any limitations that FPL would impose for dual use of any FPL easements associated with this mitigation feature.

Success Criteria

- 158) Please provide the following:

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- Information describing the process and criteria FPL will use to select which combination of mitigation projects will be implemented and how long is this selection process expected to take.
- Information describing how FPL will document and report implementation of the proposed mitigation projects as well as results showing achievement of required mitigation.

HURRICANES/CLIMATE CHANGE/SEA LEVEL RISE

159) Sea level rise is already a reality. During the last century, the sea level in the vicinity of South Florida has risen about 9-12 inches. The Miami-Dade Climate Change Task Force has predicted that, by 2050, sea level rise could be in the range of 1.5 to 5 feet. The elevation of the proposed location is almost at the mean sea level. Storm surges under increased ocean levels will be much larger and it is likely that the storm characteristics will also be altered under climate change scenarios. Although the application includes an Appendix on climate change, there is little or no information on Climate Change impacts on the proposed facility.

The proposed building pad elevations for the power block area range from 19.0' NAVD to over 25' NAVD. In order to provide an appropriate review of the building pad elevations, additional calculations and background data are needed, as wave run-up and wind set-up in Biscayne Bay may affect the facility, considering its close proximity to the Bay. During Hurricane Andrew, storm surges approached 15.0 – 15.5 feet NAVD a little further north and further inland.

With respect to the above, please address the following:

- Please provide calculations that show wave and wind action during Probable Maximum Precipitation and Probable Maximum based on the following four cases:
Case 1: 100 year wind speed combined with a Probable Maximum Precipitation Event.
Case 2: 100 year rain event combined with a Category 5 Hurricane Wind event
Case 3: Probable Maximum Wind event at the highest tide
Case 4: Storm Specific Wind and Rain Event (Hurricane Easy 1950).
- With a 3-5 foot rise in sea level, the proposed project, including the transmission line facilities, reclaimed water pipeline, industrial wastewater facility, roads and other features could be under water. How is FPL going to address these issues for the plant design life and beyond?

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- The application provides a FEMA map showing that the 100-year flood elevation is just outside the project site. How recent is this map? Did FPL consider the new FEMA maps that were published last year?
- What is the probable maximum storm surge under conditions of projected sea level rise? Is the facility designed for such a possibility? What is the probable maximum hurricane force used for this analysis? Is it conservative? If sea levels rise beyond MSE design specs, are there concerns related to the structural integrity of the reactor buildings? Will the associated facilities be protected?
- The power block area has a pad elevation ranging from 19-26 feet and includes a containment wall. However, it is not clear how the facility would be protected from saltwater intrusion due to sea level rise of 3-5 feet. The aquifer is extremely porous and the increased sea levels are likely to raise the general groundwater levels in the regions. How will the facilities be protected from storm surge when the entire plant may be surrounded by ocean waters under a sea level rise scenario?
- The proposed Radial Collector Well area is even closer to Biscayne Bay. What are the potential impacts of sea level rise on this facility?
- What are the implications of accelerated saltwater intrusion on the stormwater management system and the associated facilities?
- Sea level rise may have significant implications for the industrial wastewater facility. Were they considered in the sustainability of the existing plant as well as proposed expansions?
- What are the implications of accelerated saltwater intrusion on the proposed fill source/rock mine?
- The plant site and general vicinity would become more vulnerable to storm surge with sea level rise. What preparations are being made for this risk and vulnerability?
- Did the current design consider the potential impact of sea level rise on wet and dry storage sites for spent fuel?

GENERAL/OTHER

- 160) The application does not contain adequate information for SFWMD staff to evaluate potential impacts to SFWMD-owned lands, works, and projects. Please submit GIS data in ERSI compatible format (i.e., shapefiles or geodatabases) for the proposed facilities, including the transmission line corridors and access roads, critical energy infrastructure, the reclaimed water pipeline corridor, the roadway improvements, the potable water supply lines, any associated areas needed for temporary access or temporary construction activities, and any other project feature running over or adjacent to SFWMD-owned property.

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- 161) Please update all maps that show the 100-Year Flood Zone, including those for the associated facilities, to show the extent of the 100-Year Flood Zone on adjacent lands.
- 162) Please provide the results from the Real Estate Risk Assessments (Hazardous Materials Evaluations) that confirm that demucked soils will not contaminate the spoil storage areas and adjacent water bodies (cooling canals, existing wetlands, adjacent canal systems, etc.).
- 163) Although Section 8.0 (Site and Design Alternatives) is an optional chapter of the Site Certification Application, given the sensitive location of the proposed project and associated facilities, particularly the linear facilities, FPL should respond to the questions in the section.
- 164) Please be advised that the SFWMD retains priority access across its works and lands. Please confirm that the proposed uses will not interfere with SFWMD access across its rights of ways at any time and that FPL will remove temporary facilities and equipment from the right of way within 24 hours notice in the event of emergency situations such as a storm.
- 165) Appendix 10.2.2 (FDEP form 62-620.910(4)2CG) is missing from the PDF version of the application (following page 2CG-19). Most values regarding the concentration of materials (including nutrients, metals, volatile organic compounds, hydrocarbons, and radioisotopes) in intake and effluent waters are missing in this table. Please provide.

TABLES

Table 3.3.1-2

- 166) Please provide the sources of the stated porosity values.

Table 3.3.4-2

- 167) The information provided is incomplete. Please provide the following:
- A map that shows the location of the stated water quality data.
 - There is a profile sample referenced. Please provide sample collection date, methodology, lab analysis methodology, and all supporting documentation. Was this sample collection consistent with QAQC requirements under 62-160 F.A.C.?

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- Please provide radioisotopes and organic and as well as any other known constituent in the waste stream.

Tables 3.3.6-1 & 3.1.6-2

168) The land based list provided is incomplete. Please provide. In addition, please provide a threatened and endangered species list for species within Biscayne Bay.

Table 4.5-1

169) This table indicates that a volume of reclaimed water will be supplied to the FPL reclaimed water treatment facility by Miami-Dade County at a rate of 50,187 gallons per minute (GPM) or 72.27 million gallons per day (MGD). Please provide a letter of commitment from Miami-Dade County stating that they will have an uncommitted volume of reclaimed water and the ability to provide service to FPL for the entire duration of the proposed plant operation.

Table 4.5-3

170) Since the reclaimed water facility is not yet in place, please provide the source, estimation technique, and calculations used to estimate the reclaimed water quality. In addition, please provide the missing data.

171) Please provide an explanation concerning the lack of estimated chlorine residual for reclaimed water.

Tables 4.6.2 & 4.6.3

172) Please add a column to Tables 4.6-2 and 4.6-3 that documents the appropriate regulatory standard that the estimated water quality from these tables has to meet in order to be in compliance.

FIGURES

Figure 3.1.6-1

173) How recent is this information and the land elevation data on which it is based? Please provide documentation confirming that the location of the 100-year Flood Zone is accurate.

Figures 3.2.1-2, 3.2.1-3, and 3.2.1-4

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- 174) Property north of SW 328th Street/North Canal Drive that is shown as part of the Biscayne Bay Coastal Wetlands area is actually part of the Model Land Basin. Please revise.

Figure 3.3.1-1

- 175) Is 27 percent of the muck sample "gravel"? Please clarify.

Figure 3.3.4-1

- 176) Please revise to show the C-102 Canal.

Figure 4.5-1

- 177) Please provide a tabulated electronic spreadsheet of all the inflows and out flows of the water budget diagrams. Please make sure the water quantities balance and equal 100 percent. Please make sure the labels in the spreadsheet correspond to the diagrams. Once operational, will any operating water be discharged into the existing cooling canal system? If so, please provide back up.

Figures 4.5-2 & 4.5-3

- 178) These figures are too conceptual to confirm the physical extent of the radial wells and evaluate the potential extent of impacts from the proposed wells. Please provide detailed drawings, overlaid on an aerial drawing, showing the proposed locations and extent (length) of the radial collector wells beyond the area where the caissons for each of the radial wells will be located, including screen length. Please include on the drawings the following boundaries: FPL Turkey Point property, Biscayne Bay Aquatic Preserve, and Biscayne National Park.

Figure 5.1-1

- 179) According to Chapter 5, a 5-foot layer (1.8 million cubic yards) of muck is proposed to be removed from the construction area. A 200-acre fill plot is shown in Figure 5.1-1, next to the cooling ponds. Please describe procedures to prevent runoff and seepage from the muck pile into cooling canal system or adjacent environment. Please provide laboratory or other data for potential contaminants in the muck.

Figure 6.1.3-1

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180) Please revise to show the boundary of Biscayne National Park.

Figure 6.1.3-2

181) The black line (historical salinity) obscures predicted salinity for the scenarios. Please modify the plot to better show the differences.

182) Please specify the location of salinity measurement in time series graphic on the graph. Please qualify the term "Biscayne Bay" to specify the area that the data shown represents. Please verify that proper salinity units are used on the axis.

183) Please qualify the term "Biscayne Bay" to specify the area that the data shown represents. Please verify that proper salinity units are used on the axis.

Figure 6.1.4-1:

184) Please show the G-3 boundary and explain its significance. Please indicate the environmental relevance of the Plant property boundary or remove it.

If you have any questions concerning the above, please do not hesitate to contact me at (561) 682-6862.

Sincerely,



James J. Golden, AICP
Lead Planner
Environmental Resource Regulation Department

/jjg

c: See Attached Distribution List