III. Florida Fish and Wildlife Conservation Commission

III-1)a In Section 3.3.6.1 of the SCA, under Threatened and Endangered Species, a statement is made that while not seen during the field surveys, manatee are known to occur in the vicinity of the Port Everglades Plant. The applicant should provide more detailed information in this section about the amount of manatee use at the warm-water refuge created by the Port Everglades plant's discharge. FPL has long term manatee aerial survey data at this site. The Port Everglades' warm-water discharge is considered a primary winter aggregation area and the background information in this chapter should reflect that.

RESPONSE:

Both FPL and Broward County conduct manatee surveys in the area of the Port Everglades Plant, with FPL's efforts being focused on wintertime cold fronts. FPL's aerial survey data contained in Mote Marine Laboratory Technical Report No. 1535 indicate that the maximum number of manatees sighted in a single event in the winter at the Port Everglades Plant is 454, and the lowest maximum number from a single winter survey in the past 10 years is 155. Please refer to Responses III-6)a and III-6)c regarding manatee protection plans.

III-1)b Similar comment as was made above can be made for Plant and Animal Surveys under Section 3.3.6.1. FPL collects winter survey data of manatees for all their coastal power plants where manatees aggregate. It seems incorrect to state that surveys were not needed. It also seems inaccurate to state under this section that no endangered or threatened species occur within the property or site.

RESPONSE:

As stated in Response III-1)a above, manatees are well-documented as occurring in the cooling water discharge canal, particularly in the winter. Therefore, separate surveys are not required to document this activity. The statement regarding wildlife surveys was primarily focused on the upland areas where construction activities will occur. These previously developed areas lack suitable habitat for listed species.

III-2) Figure 3.3.6-1 incorrectly identifies the manatee aggregation site as being in the northern section of the port. The correct location is in the discharge canal within the project area.

RESPONSE:

The manatee aggregation site identified on SCA Figure 3.3.6-1 is from the FNAI database, as are all occurrences shown on the figure, because this data source includes the state and federally listed species required in the SCA Guidelines. It is well-documented that manatees occur in the cooling water discharge canal, particularly in the winter. Please refer to Response III-1)a above.

III-3) In Section 4.8.2 of the SCA we note that additional permits for drainage will be required per 62-621.300(4)(a). We thought all required permits needed to be addressed under the site certification. Does this only apply if FPL plans to use existing drainage system? If not, can additional conditions be added to the site certification for these activities?

RESPONSE:

Federally delegated NPDES permits for industrial and stormwater discharges must be acquired outside the PPSA process. The Notices of Intent for the Construction General Permit (CGP) stormwater discharges and for the Multi-Sector General Permit (MSGP) for stormwater associated with industrial activity will be submitted post-certification when the detailed designs are available.

III-4)a In Section 5.1.1 of the SCA it indicates that explosives may be used to dismantle existing plant facilities. Due to the proximity of these structures to the Intra Coastal Waterway and the discharge canal, what precautions will be used to insure debris will not reach the waters in these areas since both could have manatees in close proximity?

RESPONSE:

Plant demolition using explosives is one of the options for dismantlement. Should implosion be selected as a method, it would be planned to occur after March 31, 2013 and before November 15, 2013 which is outside the Manatee Protection Plan season. The stacks will be dismantled in directions away from the intake canal due to space. Additionally the stacks are not tall enough to reach the discharge canal. The dismantlement contractor will be required to remove all materials from the Site and must fell the stacks in a manner that allows removal of all debris. In the event that debris is expected to land in the discharge or intake canals, additional screening may be used. Debris is not expected to reach the Intracoastal Waterway (ICW) as it is over 3,500 feet from the nearest stack.

Please note that these dismantlement methods have been successfully used at RBEC and CCEC with no known adverse impacts to manatees.

III-4)b Will all explosives occur on the uplands, or are in-water detonations possible?

RESPONSE:

No in-water detonations will occur.

III-4)c This section indicates that in-water construction will be required within the intake and discharge canals. Please describe the type of work that will take place in these areas and what type of on-water access may be needed (vessels, divers, and timing of activities-day/night, etc.).

RESPONSE:

There will be minimal, if any, in-water work to support the installation of stop logs at the intake and discharge structures prior to the removal of old equipment and installation of new pumps and screens. Stop logs would be installed for dewatering purposes during circulating water pipe removal and installation. Permanent closure of the Units 1 & 2 intake structures may also require minimal in-water work**.** FPL anticipates a Condition of Certification in regard to in-water work. If in-water work is required, FPL will seek a permit from the Army Corps of Engineers, if necessary.

III-4)d This section also indicates that maintenance dredging may be performed at the intake and barge canals. When will this activity be performed in reference to the deconstruction and construction phases of the repowering?

RESPONSE:

No dredging is anticipated for the deconstruction and construction phases of this Project. The potential for maintenance dredging was described in the SCA for the operational life of the Project. FPL will implement the 2011 Manatee Construction Conditions should in-water work be required.

III-4)e Please provide site plans of the areas expected to be dredged and what type of dredge will be used (cutter head, clam shell, hopper)?

RESPONSE:

No dredging is anticipated for the dismantlement and construction phases of this Project.

III-5) Section 5.4.1.2 - The Manatee Construction Conditions for In-water work dated 2005 have been revised the new 2011 Manatee Construction Conditions are attached.

RESPONSE:

Comment acknowledged. FPL will implement the 2011 Manatee Construction Conditions should in-water work be required.

III-6)a Section 5.4.1.3 - As with the conversions of the Cape Canaveral Energy Center (CCEC) and The Riviera Beach Energy Center (RBEC), during the 3-year period that the Port Everglades facility will be offline, the Manatee Thermal Heating System (MTHS) will operate under Environmental and Biological Monitoring plans to avoid potential adverse impacts to manatees. These plans will be part of the Site Certification and will be developed in cooperation with the Florida Fish and Wildlife Conservation Commission and the U.S. Fish and Wildlife Service.

RESPONSE:

The Manatee Protection Plan (MPP) is issued through the FDEP in consultation with the state [Florida Fish and Wildlife Conservation Commission (FWC)] and federal [U.S. Fish and Wildlife Service (FWS)] agencies overseeing threatened and endangered species. FPL anticipates Conditions of Certification similar to those for manatees at RBEC, including a requirement to develop and implement Environmental and Biological Monitoring Plans in consultation with the agencies. Please also refer to Broward County Response VI-C.9.

The 50 percent reduction in discharge volume described in the SCA will not translate into a 50 percent reduction in temperature within the discharge canal. Due to the narrow width of the discharge canal, the temperature of the water within the canal will not change with the reduced flow. The effect of the reduced flow (volume) will be a smaller thermal plume within the (ICW). Therefore, the cooling water discharge canal will continue to provide a warm water refuge for manatees in the winter months.

III-6)b It is stated in this section that the permit for the heater will be done outside the site certification. More information needs to be added regarding the heater and why it is needed so there is a connection between the new power plant construction and the need for provisions to

address manatee concerns in the site certification, even if done as a separate permit. The application mentions that units 1-4 will be out of commission for 3 years, please provide a timeline for demolition, construction and timing of the heater placement and testing.

RESPONSE:

A manatee temporary heating system (MTHS) will be installed so that the Port Everglades Site can continue to provide a warm water refuge during the modernization Project. The schedule for the MTHS is planned as follows:

MTHS Engineering:	March 2012 through July 2012
MTHS Construction:	September 2012 through November 2012
MTHS Commissioning and Testing:	November 2012 through December 2012
Units 1 through 4 Shutdown:	January 31, 2013

This MTHS will be used according to the Conditions of Certification until PEEC begins operation in mid-2016. FPL will coordinate the initial testing of the system with existing operations.

III-6)c Additional information regarding the MTHS, including the maximum temperature and volume of discharge, is needed. Also, modeling of the thermal plume will be necessary to determine the area of the warm-water refuge that will be created by the MTHS. As with the Siting Certifications for the CCEC and RBEC, details of operations will be determined in consultation with FPL, U.S. Fish and Wildlife Service and the Florida Fish and Wildlife Conservation Commission and included in an Environmental Monitoring Plan.

RESPONSE:

FPL has designed, installed, and successfully operated a MTHS at both RBEC and CCEC. FPL is in the process of designing a MTHS for the Port Everglades Plant. The design criteria and performance standards from these previously installed systems will be used to customize a system for the Port Everglades Plant. The final MTHS plan will be designed in consultation with FWS and FWC and included in an Environmental and Biological Monitoring Plans as was the case with the two previous plants. In consultation with FWC and FWS, FPL is designing the MTHS system to create 68º Fahrenheit (F) water in an area of about 0.4 acres when the ambient temperature falls below a threshold of 65ºF, providing adequate space to accommodate about 600 manatees (more than documented). Preliminary modeling has determined the heater size and water volumes needed to maintain a 68ºF temperature during a cold front where the dew point temperature falls to 32ºF.

III-7) Section 5.4.2.2 - Is FPL-Port Everglades currently collecting ambient and discharge water temperatures? If so, how often are these temperatures collected? Please provide a site map with locations of water temperature stations.

RESPONSE:

Yes, FPL currently collects ambient and once-through cooling discharge water temperatures as required by Industrial Wastewater Facility Permit No. FL0001538. FPL has temperature measurement equipment located both upstream (representing ambient water temperatures) and downstream (representing once-through cooling water temperatures) of the condensers that are capable of collecting data continuously. Pursuant to the permit conditions FPL records the once-through cooling water temperature every two

weeks and reports the maximum temperature on the monthly Discharge Monitoring Reports submitted to FDEP. The current temperature monitoring station locations are shown in Figure FWC-III-7.

III-8) Section 6.1.1 - As at CCEC and RBEC the plant modifications that will occur due to the conversion process will result in a substantial reduction in the volume of warm water being discharged at the Port Everglades facility. This reduction may change the nature of the warm-water habitat that currently occurs at the Port Everglades facility, because of this, FWC believes water temperature monitoring should be conducted in various locations throughout the discharge canal to document pre and post construction temperature regimes.

RESPONSE:

The 50 percent reduction in discharge volume described in the SCA will not translate into a 50 percent reduction in temperature within the discharge canal. Due to the lack of mixing within the narrow discharge canal, the temperature of the water within the canal will not change with the reduced flow. The effect of the reduced flow (volume) will be a smaller plume within the ICW. Therefore, the cooling water discharge canal will continue to provide a warm water refuge for manatees in the winter months post-construction.

Please also refer to response III-11 below for more information on the thermal modeling of the existing Units 1 through 4 and PEEC.

III-9) Section 6.1.2 describes the use of the refuge by manatees. It is noted that no permit is needed for in-water work for repairs to a seawall, structures and maintenance dredging. What measure will be taken to be sure manatees are not affected during this in-water work if work is needed in the winter period? Pursuant to the current NPDES Manatee Protection Plan inwater work within the discharge canal requires FWC approval between November 15 and March 31.

RESPONSE:

Minimal, if any, in-water work is anticipated for the Project. If in-water work is required, FPL will seek any federal permits as necessary. All in-water work will be conducted under the Standard Manatee Conditions for In-Water Work (2011).

III-10) Section 6.9.2 - Each year, lights from the area of the FPL-Port Everglades plant are reported to have impacted female and hatchling sea turtles on sandy Atlantic nesting beaches along the Broward County shoreline. Although the Plant is inland from the nesting beaches, the taillights on the areas facilities are visible for some distance to the east. Please describe the process by which all exterior lighting will be reviewed to ensure that the potential for impacts to sea turtle nesting habitat on adjacent and more distant beaches will be addressed.

RESPONSE:

As described in SCA Section 6.9.2, the need for lighting is directly associated with plant personnel safety. In this section, FPL has committed to reducing light pollution and light trespass using the guidelines from the Illuminating Engineering Society of North America to the extent possible while meeting Occupational Safety and Health Administration (OSHA) and security requirements. The incorporation of those light reduction features identified in SCA Section 6.9.2 will result in lower lighting impacts from PEEC and much lower visibility of PEEC than the existing Port Everglades Plant. The use of the light reduction

measures, coupled with the much lower profile of PEEC than the existing Units 1 through 4, is not expected to have adverse impact on sea turtle nesting. Please also see Figure VI-B.32-1.

III-11) Appendix 10.2.1 - We have reviewed the temperature modeling that was included and noted that this was completed under the worst case scenario of warmest ambient temperatures and maximum load. To understand the current situation and the changes to the volume of water discharged after conversion (50% reduction) we request modeling of pre and post conversion of the thermal plume conditions in the discharge canal under a winter scenario. We suggest modeling the thermal plume under a 61 degree ambient water temperature when the plant is at maximum load both pre and post conversion.

RESPONSE:

The observation that the thermal plume analysis provided in SCA Appendix 10.2.1 was completed under a worst-case scenario of warm ambient temperatures and the maximum load is correct. This is standard procedure for thermal impact studies because thermal stresses on aquatic organisms are usually greatest in the summer. Manatees are an exception to the rule.

After PEEC becomes operational, the cooling water flow and the power plant heat rejection rate will both decrease by approximately 50 percent. Therefore, the temperature rise across the condensers (discharge temperature minus intake temperature) will remain approximately the same. The table below shows the results of the thermal analysis for the discharge canal for existing Units 1 through 4 and PEEC under the winter conditions requested. It should be noted that based on the most recent 13 years of intake temperature data at the plant, an ambient water temperature of 61°F would be extremely unusual. Using the same temperature rise across the condensers, the water temperature in the discharge canal at the ICW under these winter conditions will decrease by approximately 0.1°F. This small decrease after PEEC is operational is because the velocities in the discharge canal will decrease by approximately 50 percent, which will allow additional time for heat exchange with the atmosphere. Most of the heat will still be dissipated in the ICW, where the plume surface area can increase and mixing with ambient water from below and along the sides of the plume can occur.

Thermal Analysis of Discharge Canal, Winter Conditions (Ambient Water Temperature 61°F)		
	Existing Units 1-4	**PEEC**
Flow Rate (MGD)	1295	635
Ambient Water Temperature (°F)	61.0	61.0
Temperature Increase Through Power Plant (°F)	13.7	13.7
Discharge Temperature at the Power Plant(°F)	74.7	74.7
Temperature in the Discharge Canal at the ICW (°F)	74.6	74.5

III-12)a Manatee monitoring plans will be required in this permit with specific requirements to be agreed upon by FWC, USFWS and DEP. Monitoring plans need to encompass the time frame beginning from the month of November prior to the discontinuation of the warm-water discharge, throughout each winter during the construction phase and a post construction period to be determined. Monitoring efforts shall include aspects of manatee behavior, health and distribution during the repowering effort. Parameters by which the interim warm-water refuge will be operated shall be included as part of the Environmental Monitoring plan, which will be agreed upon by FPL, USFWS and FWC prior to commencement of construction.

RESPONSE:

Comment acknowledged. FPL has both Biological and Environmental Monitoring Plans for RBEC and CCEC. The specific monitoring parameters and timeframes from these previously-approved plans will be used to customize plans for the Port Everglades Plant. The final plans will be designed in consultation with FWS and FWC.

III-12)b Long Term Plan - Post-construction, and within an agreed upon time frame, FWC, USFWS and FPL will develop a plan to minimize adverse affects to manatees that provides for the weaning of manatees from the repowered FPL-Port Everglades -warm-water discharge and/or establishing an alternative warm-water resource area prior to the plant significantly reducing operations or permanently being retired.

RESPONSE:

Comment acknowledged. FPL anticipates that FWC will request Conditions of Certification similar to those developed for RBEC and CCEC that address the development of a long-term manatee strategy.

III-13)a Terrestrial Wildlife There does not appear to be much open space within the assessment area; the open lands within the assessment area are adjacent to the cooling towers and appear to be disturbed. Per figure 3.1.1-3, these lands will be used as construction parking and lay down areas for the project.

Least terns have been observed nesting on rooftops adjacent to the facility, but not within the facility boundary. These observations were from 1995, 1998, 1999 and 2000. Page 3-32 of the report says, "no threatened or endangered species were observed at or adjacent to the Port Everglades Plant Property and Site during field surveys ... " What were the time and dates of the FPL wildlife surveys? It is also unclear whether or not the wildlife surveys rooftops for nesting shorebirds, please identify if these areas were included during the FPL surveys.

RESPONSE:

A wildlife reconnaissance survey was conducted on 29 September 2011 to review the upland habitats within the proposed footprint of PEEC. This survey was not conducted during least tern nesting season, but there are no documented occurrences of this species within the proposed certified Site.

Only those structures within the Site to be certified will be dismantled, with the exception of the existing administration building. None of these structures, such as stacks, boilers, tanks, etc. have roofs that could potentially be used for least tern nesting. The existing administration building for the Port Everglades Plant does have a flat, gravel-topped roof, but the roof of this building will remain without modification. Therefore, the PEEC Project will not impact any potential least tern nesting areas**.**

III-13)b During the construction phase, will the number of trips to and from the site by heavy equipment adversely affect foraging or low-flying birds? Also, it was not noted in the permit documents whether vehicles would be hosed-down prior to entry/exiting the work area. Several projects in the past have documented construction vehicles trucks bringing in nuisance/exotic plants such as cogon grass that were then spread through the work area. Does FPL have plans to address this issue?

RESPONSE:

FPL does not anticipate that the number of heavy equipment trips to and from the PEEC Site during the construction phase will adversely affect foraging or low-flying birds. Avian species utilizing the area can reasonably be assumed to have adapted to the large volume of tractor trailers and other vehicles associated with the Port and surrounding industrial activities. Lack of suitable foraging or nesting habitat for avian species within the limits of construction will also prevent any adverse effects from heavy equipment on-site.

FPL's Environmental Control Plan for the PEEC Project will include management of potential nuisance/exotic plant issues associated with construction traffic to and from the Site.