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By dalton_j at 4:13 pm, Aug 06, 2012

August 6, 2012

Ms. Cindy Mulkey
Program Administrator
Siting Coordination Office
Department of Environmental Protection
2600 Blair Stone Road, Mail Stop 48
Tallahassee, FL 32399-2400

Re: FPL Port Everglades Energy Center Project, Broward County

Dear Ms. Mulkey:

The Division of Habitat and Species Conservation, Imperiled Species Management Section, of the Florida Fish and Wildlife Conservation Commission (FWC) has coordinated agency review of the referenced application for site certification in accordance with the Florida Electrical Power Plant Siting Act, Sections 403.501 - 403.518, Florida Statutes.

The existing Florida Power & Light (FPL) Port Everglades Plant consists of four oil and gas fired power generating units that were installed in the 1960s. The four generating units provide a combined nominal 600-megawatts of power. These 1960 era units will be converted into a "modern, highly efficient, lower-emission next-generation energy center" (FPL Siting Certification application submittal). The project will use existing plant site boundaries, cooling water intake and discharge infrastructure, and transmission right-of-way. During the plant conversion an interim warm-water heating system will be used to maintain warm-water in the current location of a Florida manatee warm water refuge. Construction parking and laydown will be staged on FPL-owned land adjacent to the existing Port Everglades Plant. The existing FPL Port Everglades Plant property is located on 92.5 acres of FPL property located within the City of Hollywood in Broward County. The site is highly urbanized, surrounded by Port Everglades ship facilities as well as other industrial facilities. The project has access to State Road 84 and Interstate 595 from several local roadways. The Intracoastal waterway and Everglades Inlet are located approximately 0.5 miles east of the FPL property. The property is located in Section 32, Township 50 South, Range 42 East.

Due to the dependence of numerous manatees on the warm-water habitat provided by the Port Everglades Energy Center, we recommend permit conditions to address the interim heating system and the temporary warm-water refuge. In addition, we recommend that FPL provide for monitoring of environmental and biological indicators that will play a substantial role in determining the status of the interim heating system during the conversion. These monitoring conditions will assist FWC's efforts to monitor the health

status of manatees and provide an early warning system for cold stress complications and contingency planning to mitigate the potential loss of significant numbers of manatees if there is a failure in the interim warm-water heating system.

Please refer to the staff report and three attachments enclosed with this letter for more detail regarding our agency's recommendations to minimize impacts to the manatee. FWC works closely with the U.S. Fish & Wildlife Service (USFWS) in management of the manatee. In its letter to FPL dated December 16, 2011 (attachment A), the USFWS provides guidance for acceptable actions and monitoring efforts that FPL could take to address any potential "take" of manatees during the plant's conversion. In addition, the USFWS along with FWC have worked with FPL in the last seven months to develop the conditions in our report. We believe that the recommendations in our report support the USFWS letter and significantly lower the risk of manatee loss due to cold stress during the plant's conversion. We recommend approval of the application with the inclusion of the attached conditions.

We look forward to working with FPL regarding protection measures, mitigation options, and habitat management for the proposed Port Everglades Energy Center Project. If you or your staff have any questions regarding our comments, or would like to coordinate further on this issue please contact Carol Knox or Ron Mezich at (850) 922-4330 or by email at Carol.Knox@myfwc.com or Ron.Mezich@myfwc.com.

Sincerely,



R. Kipp Frohlich, Section Leader
Imperiled Species Management Section

rkp/rm

Port Everglades Energy Center_080612_coverltr

Enclosures

cc: Ann Seiler, DEP
Kalani Cairns, USFWS
Kelly Samek, FWC, Tallahassee

FWC STAFF REPORT FOR FLORIDA POWER AND LIGHT COMPANY – PORT EVERGLADES ENERGY CENTER (PEEC)

Prepared by Carol Knox and Ron Mezich, Fish and Wildlife Biologists, August 6, 2012

This report summarizes the fish and wildlife resources that could be affected by the modernization of the existing power plant. It includes general recommendations for addressing these issues during the modernization process. If you have any questions regarding the information in this report, please do not hesitate to contact Carol Knox or Ron Mezich at phone (850) 922-4330 or email at Carol.Knox@myfwc.com or Ron.Mezich@myfwc.com.

PROJECT DESCRIPTION

The existing Florida Power and Light (FPL) Port Everglades Plant consists of four oil and gas fired power generating units that were installed in the 1960s. The four generating units provide a combined nominal 600-megawatts of power. These 1960 era units will be converted into a “modern, highly efficient, lower-emission next-generation energy center” (FPL Siting Certification application submittal). The project will use existing plant site boundaries, cooling water intake and discharge infrastructure, and transmission right-of-way. During the plant conversion an interim warm-water heating system will be used to maintain warm-water in the current location of a Florida manatee warm water refuge. Construction parking and laydown will be staged on FPL-owned land adjacent to the existing Port Everglades Plant. The existing FPL Port Everglades Plant property is located on 92.5 acres of FPL property located within the City of Hollywood in Broward County. The site is highly urbanized, surrounded by Port Everglades ship facilities as well as other industrial facilities. The project has access to State Road 84 and Interstate 595 from several local roadways. The Intracoastal waterway and Everglades Inlet are located approximately 0.5 miles east of the FPL property. The property is located in Section 32, Township 50 South, Range 42 East.

POTENTIALLY AFFECTED RESOURCES

Terrestrial wildlife

The Port Everglades Energy Center (PEEC) proposal does not require any permanent increase of the footprints of the associated facilities. The proposed location for these activities is highly urbanized; contains flat, sandy soils and no threatened or endangered species occur within the upland Port Everglades Plant Property. The FNAI database review did not result in any occurrences of listed animal species at the Port Everglades Plant Property and Site however, several species on the State’s Imperiled Species list could occur near the project area including the least tern and the eastern indigo snake. The attached survey conditions will address our concerns in regards to those species if they are determined to be present.

Marine Turtles

The sandy beaches in Broward County support nesting by threatened loggerhead (*Caretta caretta*), endangered green (*Chelonia mydas*) and endangered leatherback (*Dermochelys coriacea*) turtles. Nesting habitat at John U. Lloyd State Park and to the north and south are in direct line-of-sight of structures at Port Everglades, including the power plant. Lights from Port

Everglades have caused hatchling sea turtles from nests on these beaches to become disoriented as they head towards the bright lights at the Port; light management efforts such as shielding, lowering, and installation of long wave length light sources are necessary to minimize these negative impacts. The attached condition to coordinate on reducing lighting impacts will help address our concerns for marine turtles.

West Indian manatee

The manatee is listed by the U.S. Fish and Wildlife Service (USFWS) as Endangered and as Federally Endangered in Florida by the state. Manatee use of the area surrounding the PEEC is well documented by aerial survey, mortality, and satellite telemetry data. The project site is characterized as a primary warm-water manatee refuge due to the presence of a warm-water effluent from power plant operations. Between January 1974 and January 2011, 61 manatees have died from watercraft-related causes within a five-mile radius of the project location. In addition to the watercraft-related deaths, there have also been four human-other, 25 perinatal, 11 cold-stress, nine natural (other), and 43 undetermined manatee deaths within the same radius.

Historically speaking, the majority of manatees on the east coast of Florida are believed to have been limited in their distribution during cold winters to the warmer sub-tropical waters south of the St. Sebastian River (Moore 1951). Because of their limited ability to conserve heat, manatees cannot survive exposure to water temperatures below approximately 68° F (20°C) for extended periods of time (Marine Mammal Commission 1988). In north and central Florida, water temperatures in winter periodically drop below 68° F. During these periods, manatees seek out warm-water sources and migrate to southern Florida. The power plants and other industries that discharge large volumes of warm water into Florida's coastal bays and estuaries provide manatees with warm-water refugia (Campbell and Irvine 1981, O'Shea et al. 1985).

The winter distribution of manatees in Broward County is heavily influenced by the presence of the FPL Port Everglades Plant. Winter aerial surveys have documented as many as 454 manatees during a single flight at the Port Everglades Plant (Reynolds 2009). Countywide winter counts conducted by Broward county have recorded more than 900 on several surveys (conducted in winters from 2008-2012). Aside from providing thermal refugia, the plant is situated near the FPL Lauderdale Plant, which also provides a warm-water refuge and foraging habitat can be found within the Intracoastal waterway and northern Biscayne Bay. Manatees will often move from thermal refugia during mild winter periods to nearby seagrass beds to feed (Deutsch et al. 2003). This occurs in Broward and Dade County, where large numbers of manatees have been observed during synoptic surveys utilizing seagrass habitat in the vicinity of the FPL facility. Other areas of the County may also be used during opportunistic foraging excursions in the winter. Manatees were relatively abundant within the north and south New River canals and near the mangrove mitigation area at Port Everglades south of the discharge canal.

Manatees will often use other sites as temporary thermal refugia during the winter (USFWS 2001). These secondary sites are typically deep canals or boat basins where warm water temperatures persist due to thermoclines or other physical conditions. Minor winter aggregations of manatees (at least four animals) may be found in residential canals along the North Fork and South Fork of the New River and in the C-10 canal.

The conversion of the PEEC would result in the temporary discontinuation of the existing thermal discharge and manatee warm-water refuge; however, the construction of an interim heating system will allow for continuation of a warm-water refuge at its existing location. Due to the dependence of numerous manatees on the warm-water habitat provided by the PEEC, permit conditions addressing the interim heating system, that will be used to maintain the warm-water refuge are being recommended. In addition, the Florida Fish and Wildlife Conservation Commission (FWC) also recommends that FPL provide for monitoring of environmental and biological indicators that will play a substantial role in determining the status of the interim heating system during the conversion. These monitoring conditions will assist FWC's efforts to monitor the health status of manatees and provide an early warning system for cold stress complications and contingency planning to help mitigate the potential loss of significant numbers of manatees, if there is a failure in the interim warm-water heating system.

Conclusion - Manatees

Florida manatees have used the Port Everglades Plant's thermal discharge during the winter months for decades. The thermal discharge from this plant has been consistent and reliable, thereby allowing manatees to become dependent on it as a winter refuge. At the time the Manatee Power Plant Protection Plan (MPPPP- required for the National Pollution Discharge Elimination System permit) was developed for this plant, the FWC, USFWS, and FPL agreed upon a 61°F ambient water trigger temperature based on a negotiation of several factors. This trigger temperature requires the plant to operate at least one unit to create a warm-water refuge for manatees during the winter months when ambient water temperatures reach the trigger temperature. The ambient water temperature that was selected was based on several criteria: 1) Base Load Operation, with the Port Everglades Plant operating as a base load unit (running consistently and creating a dependable warm-water refuge); 2) economics (potential costs to FPL); and 3) manatee biology (how often and how long would manatees be subjected to temperatures between 68°F and 61°F). Two of these three factors have recently changed and will change even further during the conversion process. The warm water discharge at the Port Everglades Plant has been less consistent in recent years, and the interim refuge may be even less dependable for manatees if operated at a 61° F trigger temperature. The reduced dependability of the warm-water refuge may increase the frequency of exposure of manatees to cold water and escalate the risk of disease and death due to cold stress since the proposed interim heating system has not been implemented previously.

The USFWS advised the licensee in December 2011 of measures that could be taken to eliminate the risk of take of manatees. (See Attachment A). As a result FWC has attempted to develop appropriate measures and conditions to prevent take of manatees during reconstruction of the plant, which includes the interim refuge and various monitoring efforts. We have worked as closely as possible with the licensee and USFWS to develop conditions that are acceptable to all parties.

IV. FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

A. West Indian Manatee

1. Interim Warm-Water Refuge Heating System

In order to prevent an increased risk of manatee cold stress death during the PEEC modernization construction period, adaptive management protocols for the interim warm-water refuge heating system shall be included in the Environmental and Biological Monitoring Plans and the following provisions:

a. Testing, monitoring, and evaluation of the interim heating system shall take place pursuant to the conditions found in Sections 2 Environmental Monitoring and Section 3 Biological Monitoring.

b. The trigger temperature and operational details shall be agreed upon by Florida Fish and Wildlife Conservation Commission (FWC) in consultation with U.S. Fish and Wildlife Service (USFWS) and FPL and included in the Environmental Monitoring Plan. The interim heating system shall be maintained and operated to achieve the results specified in the Environmental Monitoring Plan in accordance with best management practices (BMP) established by Licensee, unless otherwise authorized by FWC and USFWS, or unless the safety of employees or reliability of the electric power system would be compromised. The Licensee shall develop a BMP manual for the interim heating system that shall include details related to maintenance, operations, agency notifications, logbooks requirements and troubleshooting plans.

c. The Licensee (Florida Power & Light Company) shall submit its BMP manual to FWC for review and comment. Except for those specific details described herein which must be reviewed and approved by FWC, Licensee will review, consider, and incorporate if practicable, all other comments from FWC. An approved BMP manual will be in place prior to the operation of the interim heating system and prior to cessation of operations of the existing Port Everglades Plant and discontinuation of the current warm-water discharge and PEEC conversion commences. A copy of the Licensee's BMP manual for the interim heating system shall be maintained at all times at the PEEC site and shall be made available upon request to authorized representatives of FWC and DEP.

d. If through the biological monitoring or daily visual assessments of manatee health, or scientific data it is indicated, that the interim heating system's operational trigger protocol should be modified to maintain a sufficient warm-water refuge, then FWC will consult with DEP, USFWS, and FPL to assess the information and develop a new strategy that can be agreed upon by the Licensee, FWC, DEP and USFWS and amended in the Environmental Monitoring Plan.

e. The interim warm-water refuge will consist of a segment of the current warm-water refuge that is created by the plant's thermal discharge. The location, configuration and dimensions of the interim warm-water refuge will be illustrated in the Environmental Monitoring Plan.

f. The Licensee may request modification of applicable FWC conditions upon issuance by the DEP, in consultation with the FWC, of final NPDES permit modification No. FL0001538 if such requested modifications to the conditions herein have been adopted into the final NPDES permit.

g. The Licensee anticipates taking the Port Everglades Plant off line on January 31, 2013. The Licensee will notify FWC seven days in advance of the plant ceasing operations for the duration of the modernization, before, or on this anticipated date. In addition, FWC will be notified 24 hours in advance of any operation of the interim heater before January 31, 2013.

[Section 403.507, F.S.; Section 379.1025, F.S.; Section 379.2291, F.S.; Section 379.2431 (2), F.S.; Section 20.331, F.S.]

2. Environmental Monitoring

The following monitoring requirements are applicable to the operation of the interim heating system during the modernization of the PEEC.

a. The evaluation of the interim heating system which is intended to determine its ability to provide a sufficient manatee warm-water refuge as described in Environmental Monitoring Plan during the winter months shall take place prior to the discontinuation of operations at the existing Port Everglades Plant and use of the current warm-water discharge system. Additional evaluation of the system shall include empirical temperature data that will be collected and compared to the thermal modeling results to evaluate the performance of the interim heating system prior to February 15, 2013 if it cannot be completed before January 31, 2013 due to continued use of the Port Everglades Plant's existing power generating units.

(1) Prior to cessation of operations of the existing Port Everglades Plant and discontinuation of the current warm-water discharge, the interim heating system must be operational. After the initial monitoring tests of the interim warm-water heating system have been conducted at the Port Everglades Plant, the Licensee will contact FWC to provide and discuss the results. At that time, FWC, in consultation with the DEP, USFWS, and the Licensee, will determine what, if any, modifications need to be made to the operation of the interim heating systems. If necessary, FWC will require a revision to the Environmental Monitoring Plan.

b. Prior to cessation of operations of the existing Port Everglades Plant and discontinuation of the current warm-water discharge, an approved Environmental Monitoring Plan shall be in place. The Licensee shall submit to the FWC, DEP Siting Office, and the a final Environmental Monitoring Plan. The final Environmental Monitoring Plan shall include, at a minimum, the following components:

(1) Monitoring of the interim heating system and warm-water refuge during the modernization process (as described in Interim Heating System and Environmental Monitoring conditions. and the Licensee's Thermal Modeling Study) shall take place during the winter months of 1 December through 31 March .

(2) Monitoring of the PEEC's interim warm-water refuge during the modernization shall consist of ambient air and water temperatures measured at multiple locations within the interim warm-water refuge. The number and configuration of temperature monitoring stations must be sufficient to provide a three-dimensional view, over time, of the thermal refuge. Temperature monitoring stations will be deployed in the interim refuge prior to the modernization phase of the Port Everglades Plant.

(3) As part of this Environmental Monitoring Plan the Licensee shall include a plan to convey the data from the temperature monitoring stations to the appropriate agencies on a daily basis when the trigger is on and the heaters are running, and on a weekly basis when the trigger protocols have not been met.

(4) Specific locations for the temperature monitoring station(s), sampling frequencies, station depths, data collection methods, and reporting frequencies must be identified and may be subject to further revision depending on receipt of any required permits, licenses and approvals.

c. The Licensee will prepare an Environmental Monitoring Report that includes all data (made available in electronic form) and statistical analyses completed as a result of the requirements set forth in the Environmental Monitoring Plan. This report will be submitted yearly by the date designated in the Environmental Monitoring Plan, while the interim warm-water system is in operation during the construction period of the PEEC. A summary report including information collected throughout the modernization process shall be completed and submitted to the FWC and DEP Siting Office for review. All annual reports shall be submitted as directed in the Environmental Monitoring Plan.

[Section 403.507, F.S.; Section 379.1025, F.S.; Section 379.2291, F.S.; Section 379.2431 (2), F.S.; Section 20.331, F.S.]

3. Biological Monitoring

The following monitoring requirements for manatee distribution and abundance are applicable to the operation of the interim heating system during the modernization of the PEEC:

a. Prior to cessation of operations of the existing Port Everglades Plant and discontinuation of the current warm-water discharge the Licensee shall submit to FWC, a Biological Monitoring Plan. The Biological Monitoring Plan shall be reviewed and approved by FWC and the Licensee shall submit the final Biological Monitoring Plan to FWC and the DEP Siting Office. The Biological Monitoring Plan shall include at a minimum the following components:

(1) Monitor the winter months of 1 December through 31 March distribution and abundance of manatees during the time frame that includes the operation of the interim warm-water heating system.

(2) Biological monitoring shall be conducted through aerial surveys during the winter months of 1 December through 31 March beginning the first winter of the plant's modernization and continuing through the completion of the PEEC modernization process and 2 years post-commercial operation of PEEC. After the first year of post modernization aerial survey monitoring, FWC will discuss the results with the Licensee and the parties will determine if the second year's monitoring can be eliminated. FPL will consult with FWC to determine the status of other aerial survey data collection efforts to determine if FPL will need to conduct any of the surveys (i.e., either during or post-modernization).

(3) Specific aerial survey paths, sampling frequencies, and methodologies for aerial surveys must be identified and described in the Biological Monitoring Plan. Aerial survey flight paths will be consistent with those established by the Broward County

Environmental Resource Management Office and shall encompass the winter months as established in the Biological Monitoring Plan.

(4) Aerial survey data shall be analyzed and summarized after each winter season to provide an evaluation of manatee abundance and distributional changes within the survey area.

(5) The Licensee shall provide one or more manatee observers who have been trained by an approved FWC trainer so they can detect indications of cold stress in manatees. The monitoring protocols and information requirements will be described in the Biological Monitoring Plan.

(6) The manatee observer will be required to conduct a daily visual assessment of the condition and general distribution of manatees using the interim warm-water refuge during the winter months of 1 December through 31 March. The visual assessments shall be conducted for a sufficient length of time to assess most of the manatees present at the plant and accessible to the observer on that day.

(7) Telemetry monitoring shall be accomplished by the Licensee through the use of an entity with experience in manatee telemetry tracking, and data analysis in Florida. This condition will coincide with the use of the interim heating system and 2 years post-commercial operation of PEEC. After the first year of post modernization telemetry monitoring, FWC will discuss the results with the Licensee and the parties will determine if the second year's monitoring can be eliminated. The tags will be attached to manatees captured at, or near the PEEC site to document their movements to alternative secondary warm-water sites, their general health, habitat use, behavioral response to changes in the operation of the interim refuge and thermal regime experienced by manatees during the modernization of PEEC. The details of the telemetry effort and required reports will be provided in the Biological Monitoring Plan.

(8) The Licensee will prepare a Biological Monitoring Report that includes all data (made available in electronic form) and statistical analyses completed as a result of the requirements set forth in the Biological Monitoring Plan. This report will be submitted yearly by the date designated in the Biological Monitoring Plan. A summary report including information collected throughout the modernization process shall be completed and submitted to the FWC and DEP Siting Office for review. All annual reports shall be submitted as directed in the Biological Monitoring Plan.

[Section 403.507, F.S.; Section 379.1025, F.S.; Section 379.2291, F.S.; Section 379.2431 (2), F.S.; Section 20.331, F.S.]

4. Standard Environmental and Biological Monitoring Plan Conditions

a. The Biological and Environmental Monitoring Plans, including the proposed monitoring techniques and monitoring locations that will be used to assess manatee health, distribution and habitat during the modernization process, shall be approved by FWC prior to implementation and prior to cessation of operations of the existing Port Everglades Plant and discontinuation of the current warm-water discharge. Final Biological and Environmental monitoring plans shall be in place at least 90 days prior to cessation of operations of the existing Port Everglades Plant and discontinuation of the current warm-water discharge and PEEC modernization commences.

b. If, in the review of the annual biological or environmental monitoring reports, FWC, in consultation with the DEP and USFWS, determines the need to modify the Biological or Environmental Monitoring Plans, FWC will notify the Licensee to discuss the findings. At that time, FWC, in consultation with the DEP, USFWS and the Licensee, will determine what, if any, modifications need to be made to the Biological or Environmental Monitoring Plans.

c. If the Licensee determines the Biological or Environmental Monitoring Plans are in need of modifications during the operation of the interim heating system, the Licensee will contact the agencies to discuss the proposed modifications. At that time, FWC, in consultation with the DEP, USFWS and the Licensee, will determine what if any modifications need to be made.

d. The Licensee will provide personnel from the FWC, USFWS, USGS Sirenia Project, or a designee of these agencies, access to the PEEC property to conduct manatee monitoring activities. Reasonable notice shall be given to the Licensee by the agencies. Access would be limited to normal weekday business hours (8:00 a.m. - 5:00 p.m.) unless arrangements are made in advance with the Licensee.

e. All visitors to PEEC will be required to comply with FPL's safety and security requirements. Personnel will receive an orientation from FPL or its contractor prior to commencing observations or other activities.

f. *[Section 403.507, F.S.; Section 379.1025, F.S.; Section 379.2291, F.S.; Section 379.2431 (2), F.S.; Section 20.331, F.S.]*

5. Contingency Plan

FWC and USFWS' Letter of Authorization (LOA) network responders will be responsible for all efforts related to manatee rescues, rehabilitation activities, and carcass recovery during the PEEC modernization. In order to effectively implement contingency plans during the plant modernization and to address manatee health-related issues, the following conditions are required:

a. If the observer (pursuant to Biological Monitoring Plan) identifies manatees with apparent signs of cold stress disease, digital photographs should be taken of the animal(s) and the FWC shall be called as soon as possible on the day of the observations through the protocols described in the Biological Monitoring Plan

b. The Licensee will notify FWC and USFWS immediately if there is a mechanical failure of the interim heating system, or if, for any other reason the interim heating system is not operating in a manner that will provide warm-water sufficient to keep the warm-water refuge at a temperature of 68° F or greater.

c. The Licensee shall provide in-kind services and financial assistance, not to exceed \$100,000 in total value, to FWC for manatee rescue or recovery in the event that there is a failure of the interim heating system resulting from Licensee's failure to comply with Final Order # PA12-57 that causes death or identifiable cold stress to manatees in Broward County. This condition would apply during the winter months of 1 December through 31 March. The in-kind assistance and funds would only be used to address manatee-related cold stress issues in the area that the interim system affects.

[Sections 403.507 F.S., Section 379.1025 F.S., Section 379.2291 F.S., Section 379.2431 (2) F.S., Section 20.331 F.S.]

6. Development of a Long-Term Manatee Strategy

It is expected that at some point in the future the warm-water habitat created by the PEEC will diminish or be terminated; in that event the FWC and USFWS believes it is in the best interest of the Licensee, FWC, USFWS, DEP, and the Florida manatee population to begin strategic long term planning to reduce the adverse effects to the Florida manatee population before this occurs.

a. Within two years of the formal approval by FWC and USFWS of a Warm-Water Action Plan (Plan), inclusive of a future-oriented Management Policy for Warm-Water Manatee Habitat, the Licensee shall host and chair a workshop designed to: (a) articulate a strategy for achieving the goals of that Plan, (b) develop a timetable for implementing the strategy, (c) review progress to date in achieving the strategy, and (d) identify impediments and solutions.

b. Within one year of the workshop held pursuant to Final Order # PA 12-57, the Licensee shall provide the FWC with a formal report of the workshop, including findings, conclusions, and recommendations.

c. Over the course of the operating life span of the PEEC, the Licensee shall develop an exit strategy for the PEEC that prevents significant losses to the manatee population when the Licensee determines to reduce or eliminate the PEEC's thermal discharge to the extent that a dependable warm-water refuge is no longer present. The Licensee's strategy shall consider FWC and USFWS's statewide Warm-Water Action Plan approved by FWC and USFWS.

d. The Licensee shall work closely with the FWC and USFWS to evaluate progress toward achieving the vision and goals of the Warm-Water Action Plan and to develop adaptive changes to the Plan as needed to promote manatee recovery through participation in periodic workshops and/or conferences designed to accomplish such evaluation and adaptive changes.

e. The FWC must be notified, in writing, within 30 days of any sale, conveyance, or other transfer of the facility.

[Section 403.507, F.S.; Section 379.1025, F.S.; Section 379.2291, F.S.; Section 379.2431 (2), F.S.; Section 20.331, F.S.]

7. Manatee Construction Conditions for In-Water Work

a. The current Standard Manatee Conditions for In-Water Work are required for all in-water work in or adjacent to waters accessible to manatees. If the licensee is unsure if a certain activity qualifies as in-water work, it will contact the FWC to discuss and determine applicability of these conditions for the proposed activity. Blasting or pile hammering activities to break rock shall be prohibited in waters accessible to manatees. If no other alternative exists, a modification of these conservation measures can be requested. An adequate Blast and Protected Species Watch Plan must be submitted to and approved by the Imperiled Species Management Section of the FWC prior to these methodologies being used.

b. To reduce the possibility of injuring or killing a manatee during construction, in-water work shall not be performed between November 15 and March 31 unless essential to support the PEEC project's schedule or the safety of employees or reliability of the electric power system would be compromised. If in-water work during the winter cannot be avoided the Licensee will contact the agencies to determine alternative conditions that will be implemented to address the proposed activity.

c. At least one person shall be designated as a manatee observer when in-water work is being performed. That person shall have experience in manatee observation be equipped with polarized sunglasses to aid in observation. The manatee observer must be on site during all in-water construction activities and will advise personnel to cease operation upon sighting a manatee within 50 feet of any in-water construction activity. Movement of a work barge, other associated vessels, or any in-water work shall not be performed after sunset, when the possibility of spotting manatees is negligible.

d. The Licensee will include as part of its safety orientation manatee awareness training for full-time permanent construction personnel at the PEEC site. This training will be designed to educate the construction work force about the legal requirements to avoid manatees and to provide them with contact information if they should spot an injured manatee.

e. To reduce the risk of entrapment and drowning of manatees, grating shall be installed over any proposed pipes or culverts greater than 8 inches, but smaller than 8 feet in diameter that are submerged or partially submerged and reasonably accessible to manatees. Bars or grates no more than 8 inches apart shall be placed on the accessible end(s) during all phases of the construction process and as a final design element to restrict manatee access.

[Section 403.507, F.S.; Section 379.1025, F.S.; Section 379.2291, F.S.; Section 379.2431 (2), F.S.; Section 20.331, F.S.]

8. Force Majeure

If there is an act of God, terrorism, or war that prevents Licensee from providing the requisite warm water conditions, Licensee will notify FWC expeditiously and coordinate efforts to resume compliance with the certification conditions.

[Sections 403.507, F.S.; Article IV, Sec. 9, Fla. Const.; Section 20.331, F.S.]

9. Access to Manatee Protection Zones

For all activities necessary to perform essential operations, including in-water maintenance and inspection of equipment, emergency operations, and environmental monitoring within a No Entry or Motorboats Prohibited Manatee Protection Zone as defined by 68C-22, F.A.C., the following requirements are applicable. These requirements supplant the need for Licensee to obtain a permit to access these zones pursuant to 68C-22.003, F.A.C.

a. Vessels used to access the zone should be of the smallest size and horsepower needed to accomplish the required tasks, and all vessels should be clearly marked as belonging to the Licensee or authorized contractor performing the work on behalf of the Licensee. Whenever practicable, vessels should be equipped with a propeller guard. Vessel operation within the zone must be at no greater than Idle Speed.

b. At least one person on each vessel must be designated as a manatee observer. Said observer must have experience in manatee observation and be equipped with polarized sunglasses to aid in observation. The observer must be on the vessel at all times, maintain a vigilant watch, and advise all personnel as to the presence and location of nearby manatees.

c. Except in emergency situations, no in-water activity may be performed within 50 feet of a manatee. Manatees may not be approached, pursued, fed, watered, touched, or otherwise interacted with in any manner that causes disruption of their normal behavior. If one or more manatees are observed within 50 feet, all in-water activities must be stopped and may only be resumed after all manatees have moved away of their own volition.

d. Except in emergency situations, no in-water work may be performed before sunrise or after sunset (when the ability to see manatees is minimal).

e. All personnel entering the zone must be informed of the possible presence of manatees, the characteristics used to identify the presence of manatees, and the conditions and requirements set forth herein. All personnel must be advised that there are civil and criminal penalties for harming, harassing, or killing manatees, which are protected under the Marine Mammal Protection Act of 1972, the Endangered Species Act of 1973, and the Florida Manatee Sanctuary Act.

f. Any collision with and/or injury to a manatee must be reported immediately to the FWC Division of Law Enforcement (888-404-3922) and the FWC Imperiled Species Management Section (850-922-4330; fax: 850-922-4338).

g. The Licensee maintain records onsite detailing the nature and scope of all activities conducted within the restricted area during the previous year, including dates of activity and the number of vessels involved as well as the type and configuration of the vessels, by date. These records will be made available to FWC upon request.

[Section 403.507, F.S.; Rule 68C-22.003, F.A.C.; Section 20.331, F.S.]

B. Terrestrial Wildlife

1. All undeveloped habitat onsite shall be surveyed for the presence of state- and federally listed species no more than six months before land clearing and the results shall be reported to the FWC. We recommend that the report includes methodology, results, discussion, and references to all survey protocols and documents used. If there is evidence that any state-listed species are present, then the licensee must report the findings to the FWC at least 60 days prior to the commencement of clearing. If impacts to those species cannot be avoided, then the licensee must contact the FWC before taking any action that might result in an impact to those species.

[Section 403.507, F.S.; Article IV, Sec. 9, Fla. Const.; Chapter 68A-27, F.A.C.; Section 20.331, F.S.]

C. Marine Turtles

1. FPL shall consult with the FWC Imperiled Species Management Section on the development of a Light Management Plan to reduce the adverse effects of PEEC's exterior lighting on nesting marine turtles and their hatchlings. The plan should evaluate the use of lighting management methods that include shielding, lowering mounting heights, and use of long wavelength fixtures.

[Section 403.507, F.S.; Section 379.2431(1), F.S., Section 379.2431(1)(g), F.S.; Section 20.331, F.S.]

REFERENCES

- Campbell, H.W., and A.B. Irvine. 1981. Manatee mortality during the unusually cold winter of 1976-1977. Pages 86-91 in R.L. Brownell, Jr. and K. Ralls, eds. The West Indian manatee in Florida. Proceedings of a workshop held in Orlando, Florida, 27-29 March 1978. Florida Department of Natural Resources, Tallahassee, Florida, USA.
- Deutsch, C. J., J. P. Reid, R. K. Bonde, D. E. Easton H. I. Kochman and T. J. O'Shea. 2003. Seasonal movements, migratory behavior, and site fidelity of West Indian manatees along the Atlantic coast of the United States. Wildlife Monographs, 151: 1-77.
- Marine Mammal Commission. 1988. Preliminary Assessment of Habitat Protection Needs for West Indian Manatees on the East Coast of Florida and Georgia. Rept. of the Marine Mammal Commission in Consultation with its Committee of Scientific Advisors on Marine Mammals. pp.1-107.
- Moore, J.C. 1951b. The Range of the Florida Manatee. The Quarterly Journal of the Florida Academy of Sciences. Volume 14, No. 1. pp.1-18.
- O'Shea, T. J., C.A. Beck, R.K. Bonde, H.I., Kochman, and D.K. Odell. 1985. An analysis of manatee mortality patterns in Florida, 1976-1981. Journal of Wildlife Management 49:1-11.
- Reynolds, J.E., III. 2009. Distribution and Abundance of Florida Manatees (*Trichechus manatus latirostris*) Around Selected Power Plants Following Winter Cold Fronts. 2008-2009. Final Report Prepared For FP&L Company, Juno Beach, FL. Order Number 45000074487: 50 pp.
- United States Fish and Wildlife Service 2001. Florida Manatee Recovery Plan, (*Trichechus manatus latirostris*), Third Revision. Atlanta, Georgia. 144 pp. + appendices.