



**Florida Fish
and Wildlife
Conservation
Commission**

Commissioners

Rodney Barreto
Chair
Miami

Brian S. Yablonski
Vice-Chair
Tallahassee

Kathy Barco
Jacksonville

Ronald M. Bergeron
Fort Lauderdale

Richard A. Corbett
Tampa

Dwight Stephenson
Delray Beach

Kenneth W. Wright
Winter Park

Executive Staff

Kenneth D. Haddad
Executive Director

Nick Wiley
Assistant Executive
Director

Karen Ventimiglia
Deputy Chief of Staff

**Office of Policy and
Stakeholder
Coordination**

Mary Ann Poole
Director

(850) 410-5272
(850) 922-5679 FAX

*Managing fish and wildlife
resources for their long-
term well-being and the
benefit of people.*

620 South Meridian Street
Tallahassee, Florida
32399-1600
Voice: (850) 488-4676

Hearing/speech impaired:
(800) 955-8771 (T)
(800) 955-8770 (V)

MyFWC.com

December 10, 2008

Mr. Mike Halpin, Administrator
Siting Coordination Office
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 48
Tallahassee, Florida 32399

RE: Site Certification Application, Progress Energy Florida Levy Nuclear Plant and
Associated Facilities, Levy County, Florida; Agency Report and Recommended
Conditions

Dear Mr. Halpin:

The Division of Habitat and Species Conservation, Habitat Conservation Scientific
Services Section, of the Florida Fish and Wildlife Conservation Commission (FWC) has
coordinated agency review of Progress Energy's Levy Nuclear Plant and Associated
Facilities application and provides the attached Agency Report and Recommendations for
Conditions to be included in the project certification.

The applicant will need to comply with State of Florida's listed species requirements
found in Chapter 68-27, Florida Administrative Code (F.A.C.), prior to construction of
the Plant and Associated Facilities. This also includes requirements specified in the Bald
Eagle Management Plan.

We recommend approval of the Progress Energy Florida Levy Nuclear Plant and
Associated Facilities certification with the inclusion of recommended conditions related
to A. listed species and their habitats; B. biological survey and monitoring (pre- and post-
construction); and C. mitigation for impacts.

If you or your staff would like to coordinate further on the recommendations contained in
this report, please contact me at 850-410-5272, or email me at
maryann.poole@MyFWC.com, and I will be glad to help make the necessary
arrangements. If your staff has any specific questions regarding our comments, I
encourage them to contact Mr. Theodore Hoehn (850-488-3831); email
ted.hoehn@myFWC.com.

Sincerely,

Mary Ann Poole

Mary Ann Poole, Director
Office of Policy and Stakeholder Coordination
map/tsh

Progress Levy Nuclear_1452_Dec 2008
ENV 2-11-2/3

Enclosure

cc: Mr. Jamie Hunter, Progress Energy

Agency Report and Recommendations for Conditions to be Included in the State Certification

Project Description

Progress Energy Florida proposes to build and operate two 1154 (nominal electrical) megawatt electrical (MWe) advanced passive light water nuclear reactors (proposed Levy Nuclear Plant Unit 1 [LNP 1] and proposed Levy Nuclear Plant Unit 2 [LNP 2]). LNP 1 and 2 would be located in Levy County, Florida. The project also would include several new and expanded 500-kilovolt (kV) and 230-kV electrical transmission lines and substations, new site access roads, and new offsite cooling water disposal pipelines that would connect the Levy Nuclear Plant site to the existing Crystal River Nuclear Energy Complex. The site is located adjacent to and north of the Cross Florida Barge Canal approximately seven miles from the coast.

Affected Resources

Effects on State-Listed Species

The Levy Nuclear Power Plant and its associated facilities would likely impact state-listed species, as described in the application. A listing of all the state- and federally listed species potentially impacted by the proposal and their listing status is enclosed as Table 1.

The entire project is within a Florida scrub-jay federal consultation area. Florida scrub-jays have been documented within 1000 meters of the proposed Levy Nuclear Plant. The area is also within a red-cockaded woodpecker (RCW) federal consultation area. The area around the proposed Levy Nuclear Power plant is known to contain the bald eagle, gopher tortoise, gopher frog, little blue heron, and Florida manatee. The Florida manatee is known to use the Cross Florida Barge Canal up to the Inglis Lock and Dam. Monitoring and mitigative measures will likely be needed to avoid impacts to the Florida manatee during construction and operation of the cooling water intake and trash rake structures. In addition, there is the potential for the eastern indigo snake, short-tailed snake, Florida pine snake, Florida mouse, white ibis, and Sherman's fox squirrel to occur there.

On a case-by-case basis, either a re-location or incidental take permit may be required for each impacted species. Accordingly, if there is evidence that any individuals of these species are present, then the applicant must report the findings to the FWC. If impacts to these species cannot be avoided, then the applicant must contact the FWC before taking any action that might result in an impact to those species. The applicant should review our permit application requirements online at <http://myfwc.com/permits/Protected-Wildlife/contacts.htm> and contact the Wildlife Permit Coordinator within the Division of Habitat and Species Conservation with specific permitting questions.

Baseline Biological and Hydrological Data

1. Cross Florida Barge Canal

Based upon Progress Energy's modeling information, changes in water quality and, therefore, fauna will occur over seven miles of Cross Florida Barge Canal (Barge Canal). There is also the possibility of affecting the water quality and ecology of the Withlacoochee River. The baseline data for the Withlacoochee River encompasses an area from the Inglis Dam to the Barge Canal only and is derived from a single sampling event. There were no stations or samples taken in the lower Withlacoochee River on the north side of the Barge Canal.

The baseline data for the Cross Florida Barge Canal are from a single sampling season during drought conditions. The existing data provide a faunal inventory, but by itself such an inventory is not sufficient for determining the potential effects of this project. The temporal sampling of the Barge Canal, only once in late spring/early summer, provides a very limited picture of the fish and plankton community in this area and would almost entirely miss the recruitment periods of species such as red drum, striped mullet, and spotted seatrout. The sampling did not provide an adequate representation of biological conditions toward the outer portions of the Barge Canal in the area of the outer water quality stations.

Ideally, sampling should be conducted monthly for a least of a couple of years in order to determine seasonality and inter-annual variability (in at least a rudimentary manner) for the fish community. Site selection is crucial for determining structure and function within a fish community. Sites should be selected in a stratified-random manner to properly characterize the entire system. In order to adequately determine a more accurate baseline for both the Barge Canal and the Withlacoochee River, including both sections of the river, it will be necessary to sample over multiple years, over variable climatic conditions, and with the changes to the sampling protocols recommended herein.

2. Discharge via the Crystal River Energy Complex

Progress Energy proposes to discharge the new plant's effluent to the existing Crystal River Energy Complex's discharge canal. There is not much information on the environmental baseline conditions and biological effects at the existing Crystal River Energy Complex. Depending on the extent of change in discharge volume, alterations in temperature and salinity may affect the aquatic biological resources present; however, the hydrological modeling may not adequately represent the temperature and salinity plumes that could be expected. There may also be a nutrient component to be addressed.

Impacts to Aquatic Species and associated mitigation

1. Cross Florida Barge Canal

The anticipated flows into the cooling water intake structure, located near the Inglis Lock and Dam, are expected to result in changes for at least seven miles down the Cross Florida Barge Canal and in the Withlacoochee River. It is uncertain what the potential impacts to aquatic organisms will be due to

impingement and entrainment through the intake structure. Additionally, there are no mitigation plans to address the impacts that may occur to organisms in the Barge Canal or to the Withlacoochee River. While no state agency currently has plans for restoration of the Withlacoochee River, it should be noted that the siting of the cooling water intake structure and barge slip, near the Inglis Lock and Dam, will likely preclude restoration plans that could be developed in the future. It is also uncertain how much the increased inflow into the Barge Canal will reduce or impact the southward flow of freshwater from the mouth of the Withlacoochee River.

2. Marine and Estuarine Environment

Seagrass studies have been conducted for the Crystal River Energy Complex since the 1980s. These studies indicate that there has been no improvement in the seagrass coverage over time from the initial damage and decline in the seagrass coverage caused by the thermal discharge plume. Although the extent of impacts to marine fauna is unknown, it can be assumed that changes in the seagrass coverage have impacted the associated faunal community. Oyster habitats in the nearshore areas have been severely impacted as well. Overall there appears to have been a change in the amount and circulation of freshwater moving toward the south into the near shore areas. No mitigation plans have been proposed to address the cumulative impacts of the combined discharge to the seagrasses, nearshore oyster habitats, or fauna that would be covered under this certification and the new National Pollutant Discharge Elimination System (NPDES) permit.

Recommended Conditions

The FWC recommends the following conditions be included in the special conditions as part of the certification process to address specific wildlife species, biological survey and monitoring, and mitigation.

A. Listed-Species Conditions

General Listed-Species Surveys

1. The applicant will coordinate with the FWC to obtain and follow the current survey protocols for all listed species that may occur within the plant and associated facilities area or could be affected by the plant and associated facilities prior to final design and prior to conducting detailed surveys.

The results of those detailed surveys will be provided to the FWC and coordination will occur with the FWC on appropriate impact mitigation methodologies, as authorized by Article IV, Sec. 9, Fla. Constitution; Section 379.2291, Florida Statutes (F.S.); and Rule 68A-27, Florida Administrative Code (F.A.C.).

Gopher Tortoise

Information on the gopher tortoise and permitting can be found on our agency's website at <http://myfwc.com/permits/Protected-Wildlife/permits.html#gophertortoise>.

1. The applicant will conduct surveys for gopher tortoises (*Gopherus polyphemus*), in accordance with the FWC-approved Gopher Tortoise Management Plan (adopted in 2007) and current Gopher Tortoise Permitting Guidelines. A burrow survey covering a minimum of 15% of the potential gopher tortoise habitat to be impacted by development is required in order to apply for a relocation permit. Immediately prior to capturing tortoises for relocation, a 100% survey is required to effectively locate and mark all potentially occupied tortoise burrows and to subsequently remove the tortoises. Burrow survey methods are outlined in Appendix 4, Methods for Burrow Surveys on Development (Donor) and Recipient Sites. Surveys must be conducted within 90 days of when an application is submitted to the FWC; however, surveys shall not be conducted within 30 days of any ground disturbance or clearing activities on the donor site. All surveys completed by authorized agents or other permittees are subject to field verification by the FWC. The gopher tortoise surveys should be conducted during the months of April through October.
2. A permit is not required for activities that occur more than 25 feet from a gopher tortoise burrow entrance, provided that such activities do not harm gopher tortoises or violate rules protecting gopher tortoises. Examples of such violations noted in the past by the FWC include, but are not limited to, killing or injuring a tortoise more than 25 feet away from its burrow; harassing a tortoise by blocking access to its burrow, and altering gopher tortoise habitat to such an extent that resident tortoises are taken.
3. The applicant will coordinate with and provide the FWC a completed gopher tortoise relocation permit application in accordance with the FWC-approved Gopher Tortoise Management Plan and Gopher Tortoise Permitting Guidelines. This permit application will provide information on the location for on-site recipient areas and any off-site FWC approved recipient site, as well as, appropriate mitigation contributions.
4. Any commensal species observed during the burrow excavations that are listed by the U.S. Fish and Wildlife Service (USFWS) or FWC will be relocated in accordance with the applicable guidelines for that species.
5. All staging and storage areas will be sited to avoid impacts to gopher tortoise burrows and habitat.

Citations: Article IV, Sec. 9, Fla. Const.; Section 379.2291, F.S.; and Rule 68A-27.004, F.A.C.

Bald Eagle

1. The applicant will avoid impacts to bald eagle (*Haliaeetus leucocephalus*) nests where possible. If impacts cannot be avoided within the 660-foot nest buffer

zone, construction activities will be conducted consistent with the FWC Eagle Management Guidelines, outlined in the FWC Bald Eagle Management Plan, dated April 9, 2008, or any subsequent versions. In areas where bald eagle nests are present, efforts will be made to avoid construction activities during the nesting season (October 1 – May 15) or when eagles are present before October 1 or after May 15.

2. In accordance with the FWC Eagle Management Guidelines, for construction areas that fall within 330 feet of an active or alternate bald eagle nest, construction activities will be conducted only during the non-nesting season (May 16 – September 30). Any construction activities that fall within 660 feet of the nest during the nesting season will be conducted following USFWS Bald Eagle Monitoring Guidelines, dated 2007, or subsequent versions.
3. In areas where adverse impacts to nests cannot be avoided, resulting in nest disturbance, the information required for an FWC Eagle Permit will be obtained from the FWC, as authorized by Section 379.2291 F.S., and Rule 68A-16.002, F.A.C., and minimization and conservation measures outlined in the FWC Bald Eagle Management Plan will be followed, as applicable.

Citations: Article IV, Sec. 9, Fla. Const., Section 403.5113(2), F.S., Rule 62-17.191, F.A.C., Section 379.2291, F.S., 68A-27 F.A.C. and Rule 68A-16.002, F.A.C.

Florida Scrub-Jay

1. The applicant will coordinate with the FWC prior to final site plan design and construction to insure that surveys for Florida scrub-jays (*Aphelocoma coerulescens*) are in accordance with FWC- and USFWS-approved protocols (Fitzpatrick et al. 1991)*.
2. The applicant will provide the FWC with the Florida scrub-jay survey results and identify where impacts to Florida scrub-jays cannot be avoided.
3. The applicant will coordinate with the FWC to determine mitigative measures for areas where impacts to Florida scrub-jays cannot be avoided.

Citations: Article IV, Sec. 9, Fla. Const., Section 403.5113(2), F.S., Rule 62-17.191, F.A.C., Section 379.2291, F.S., 68A-27 F.A.C. and Rule 68A-16.001 F.A.C.

* Fitzpatrick, J.W., G.E. Woolfenden, M.T. Kopeny. 1991. Ecology and development-related requirements of the Florida scrub-jay (*Aphelocoma c. coerulescens*). Nongame Wildl. Prog. Tech. Rep. No. 8, Fla. Game Fresh Water Fish Comm., Tallahassee.

Red-Cockaded Woodpeckers

1. The applicant will coordinate with the FWC prior to conducting surveys for red-cockaded woodpeckers (*Picoides borealis*) to insure that surveys are in accordance with the FWC-approved Red-Cockaded Management Plan, adopted in 2003 and the USFWS Red-Cockaded Recovery Plan.

2. The applicant will provide the FWC with the red-cockaded woodpecker survey results and identify where impacts to red-cockaded woodpeckers cannot be avoided.
3. The applicant will coordinate with the FWC to determine mitigative measures for areas where impacts to red-cockaded woodpeckers cannot be avoided.

Citations: Article IV, Sec. 9, Fla. Const., Section 403.5113(2), F.S., Rule 62-17.191, F.A.C., Section 379.2291, F.S., 68A-27 F.A.C. and Rule 68A-16.001 F.A.C.

Avian Protection Plan

1. The applicant will coordinate with the FWC in the development of an Avian Protection Plan that delineates a program designed to reduce the operational and avian risks that result from avian interactions with electric utility facilities with the goal of reducing avian mortality. Guidelines for the Avian Protection Plan can be found on the USFWS website at:
<http://www.fws.gov/migratorybirds/issues/APP/AVIAN%20PROTECTION%20PLAN%20FINAL%204%2019%2005.pdf>

Citations: Article IV, Sec. 9, Fla. Const., Section 403.5113(2), F.S., Rule 62-17.191, F.A.C., Section 379.2291, F.S., 68A-27 F.A.C. and Rule 68A-16.001 F.A.C..

Florida Manatee

1. The Standard Manatee Conditions for In-Water Work (revision 2005) shall be followed for all in-water activity. These are enclosed as Attachment 1.
2. At least 60 days prior to the beginning of construction, the applicant shall contact the FWC to determine which phases of the project will require observers, how many observers will be needed for each of those phases and who those observers will be. The permittee may provide the FWC with a list of prospective observers or the FWC will provide a list. Observers must be approved by the FWC and 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. Observers shall maintain a log detailing manatee sightings, work stoppages, and other protected species-related incidents. A report, summarizing all activities noted in the observer logs, the location and name of project, and the dates and times of work shall be submitted within 30 days following project completion to the FWC's Imperiled Species Management Section at: 620 South Meridian Street, 6A, Tallahassee, Florida 32399-1600, or e-mailed at fcmpmail@myfwc.com.
3. If a cofferdam is used to minimize release of sediment to the Cross Florida Barge Canal, the area inside (behind) the cofferdam must be checked for the presence of manatees during and after installation of the barrier before further work occurs to determine that manatees have not been entrapped.

4. At the earliest point in the draft and final design phase of the project and prior to construction, the applicant must submit a complete final description and final design of the Cooling Water Intake Structure (CWIS) plan to be approved by the FWC with regard to manatee safety issues. The description should include the width of proposed vertical bar screens and the means by which they will be secured to the structure, the location and type of material proposed for screens and the method of securing the screens, the location of the pump and pump house, and a complete explanation of how access by manatees to the pump mechanism will be prevented. A final plan approved by the FWC must be implemented prior to the facility operation and maintained for the life of the facility.
5. At the earliest point in the draft and final design phase of the project and prior to construction, the applicant must submit a complete description and final design of the trash rack/rake plan, which must be approved by the FWC. The description must include the type (brand) of trash rack proposed, the proposed rack installation angle, and if a rake/rake gripper (or other moving element for cleaning or straining) is proposed as part of the mechanism, a description of the rake gripper, the size (in inches) of the rake gripper opening, the proposed descent velocity of the rake or other straining mechanism, the proposed type of operation of the rake (automated or manual), and the proposed location of the trash rack relative to the CWIS forebay. A final plan must not pose risks to manatees, must be approved by the FWC, implemented prior to the facility operation and maintained for the life of the facility.
6. To reduce the risk of entrapment and drowning of manatees, grating shall be installed over any existing or 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.

Citations: Article IV, Sec. 9, Fla. Const., Section 403.5113(2), F.S., Rule 62-17.191, F.A.C., Section 379.2291, F.S. and 68A-27 F.A.C.

B. Biological Survey and Monitoring Conditions

Cross Florida Barge Canal and Withlacoochee River Survey and Monitoring

Field data are needed in order to determine impacts of the proposed withdrawals in the Cross Florida Barge Canal and the Withlacoochee River. The current Plan of Study needs revisions in order to calculate accurate baseline conditions and develop monitoring plans to determine deviations from baseline once operations begin.

- A. Within 180 days following certification of the Levy County Nuclear Facility, Progress Energy will submit to the Department of Environmental Protection (DEP),

FWC, and Southwest Florida Water Management District (SWFWMD) a Cross Florida Barge Canal and Withlacoochee River Monitoring Plan (Canal and River Monitoring Plan). The Canal and River Monitoring Plan shall include, at a minimum, the following components:

1. Nekton monitoring should be based on a stratified-random sampling design, with a minimum of 12 samples per month in the Cross Florida Barge Canal, a minimum of 6 samples per month in the Withlacoochee River downstream of Lake Rousseau, a minimum of 30 samples per month in the “lower Withlacoochee River” between the Cross Florida Barge Canal and the Gulf, and a minimum of 6 samples per month in the area just off the mouths of the Withlacoochee River and Cross Florida Barge Canal. Ideally the sampling effort would be divided between bag seines and otter trawls, with a ratio of two seine hauls to one trawl haul. This effort is comparable to current monitoring in the Hydrobiological Monitoring Program (HBMP) of the Alafia River-Tampa Bay Bypass Canal-Hillsborough system and is necessary to detect change in nekton communities. Ideally the number of samples necessary per month would be based on preliminary sampling and subsequent power analysis (to determine power to detect change), as was done in designing the HBMP. If additional gear is deemed more appropriate, these should be provided in the nekton monitoring study design.
2. Plankton monitoring should be based on a stratified-random sampling design, with a minimum of 12 samples per month in the Cross Florida Barge Canal, a minimum of 6 samples per month in the area just off the mouths of the Withlacoochee River and Cross Florida Barge Canal, and in the Withlacoochee River. The surveys should employ standard plankton sampling gear. Ideally the number of samples necessary per month would be based on preliminary sampling and subsequent power analysis (to determine power to detect change). The plankton monitoring should, at a minimum, include sampling at night.
3. Additional hydrographic survey sites will be needed to characterize circulation and flow from the Withlacoochee River south to the Barge Canal, across and into the Barge Canal, and south towards the Crystal River Energy Complex.
4. Specific survey and monitoring locations, sampling frequencies and methods, and specific parameters to be surveyed and monitored.
5. Pre-construction surveys should be conducted for at least 3 to 5 years in order to establish seasonal/climatological baseline, biological and water quality conditions.
6. An impingement and entrainment study should be developed and implemented for use during operations to validate the assumptions of limited or no impingement and entrainment of organisms.
7. Construction and post-construction monitoring should be conducted for at least 3 years each utilizing the same pre-construction survey methodologies in order to identify and characterize biological and water quality impacts associated with the project.
8. This Canal and River Monitoring Plan, including survey and monitoring locations, shall be approved prior to implementation. The DEP, FWC, and

SWFWMD (the Agencies) approval or disapproval of the submitted plan within 90 days of the originally submitted information. In the event that the Agencies require additional information for the licensee to complete and approve the Plan, the Agencies shall make a written request to the licensee for additional information no later than 30 days after receipt of the submitted information.

9. Upon approval, Progress Energy will start implementation of the Plan.
- B. Progress Energy will prepare yearly progress reports, including all data and statistical analyses resulting from the survey and monitoring requirements, hydrographic analysis documenting the flow and circulation patterns in the nearshore areas, and a summary report at the end of the baseline monitoring period and submit the report to the Agencies for review. If the Agencies, in their review of the yearly progress reports, determine inadequacies or the need to modify the Canal and River Monitoring Plan, they will notify Progress Energy and a joint meeting will be held to discuss the findings. At the end of the baseline monitoring period, Progress Energy will hold a joint meeting with the Agencies to discuss the results. At that time, the Agencies and Progress Energy will determine what, if any, modifications need to be made to the Canal and River Monitoring Plan for monitoring once the Plant begins operations.
- C. If the Canal and River Monitoring Plan is determined to need modifications for monitoring during the operation of the Plant, Progress Energy will submit, within 180 days after notification of needed modifications, a revised Canal and River Monitoring Plan to the Agencies for review. The Agencies shall indicate its approval or disapproval of the submitted plan within 90 days of the submitted information. In the event that the Agencies require additional information for the licensee to complete and approve the Canal and River Monitoring Plan, the Agencies shall make a written request to the licensee for additional information no later than 30 days after receipt of the submitted.
- D. Progress Energy will submit, after initiation of operations at the Levy Plant, an annual report, including all data and statistical analyses resulting from the monitoring requirements and an analysis comparing the current data to the pre-construction monitoring (baseline) data to the Agencies. If the DEP, in consultation with SWFWMD and FWC, determines that the pre- and post-monitoring data are insufficient to evaluate changes, indicate harm or potential harm to the waters of the State including ecological resources of the Cross Florida Barge Canal and the Withlacoochee River; and/or exceed State or County water quality standards, then additional measures shall be required to evaluate or to abate such impacts. Additional measures include but are not limited to:
 - a. Enhanced monitoring and/or modeling, and mitigative measures;
 - b. Operational changes in the cooling water intake system to reduce any such impacts;
 - c. Other measures to abate impacts as may be described in the Canal and River Monitoring Plan.
- E. Progress Energy will submit a summary report, including all data and statistical analyses from the baseline monitoring and an analysis comparing the current data to the baseline data, to the Agencies. The summary report should be submitted to the Agencies a minimum of 6 months before renewal of the NPDES permit.

Levy Nuclear and Crystal River Energy Complex Discharge Survey and Monitoring

The current seagrass and faunal monitoring data do not appear to provide the necessary information to be able to assess the potential impacts from the combined discharge from the Levy Nuclear Complex (LNC) and Crystal River Energy Complex (CREC). The current Plans of Study for both the thermal plume monitoring and seagrass-faunal monitoring need revisions in order for the Agencies to be able to determine deviations from baseline once combined operations begin.

- A. Within 180 days following certification of the Levy County Nuclear Facility, Progress Energy will submit to the Agencies an LNC and CREC Discharge Survey and Monitoring Plan (Discharge Monitoring Plan). The Discharge Monitoring Plan shall include, at a minimum, the following components:
1. A broad-based, pre-construction survey and a monitoring plan, for a minimum of 3-5 years, that include sites outside of the existing or predicted plume areas to allow for a comparison of the plume area sites to a "control site."
 2. Specific survey and monitoring locations, sampling frequencies and methods, and specific parameters to be surveyed and monitored.
 3. The survey and monitoring will include, at minimum, protocols to monitor seagrass, oyster and hardbottom resources. Monitoring of physical parameters shall include, at minimum, surface and bottom temperature, salinity, dissolved oxygen (DO), total nitrogen, total phosphate, and transparency data collection.
 4. Intensive survey and monitoring of the central areas of the existing and future/predicted plume areas during the first and second summers of the combined discharge. This should include measurements of DO at the surface and at the bottom measured on a regular schedule (quarterly at minimum, monthly if possible), and, within the zone of plume impact, DO at the bottom measured overnight 3 to 4 times during each summer.
 5. An adaptive mitigation plan that outlines remedial action options if the CREC/LNC effluent has adverse impacts on water quality and physical parameters, seagrasses, oysters, or other marine organisms.
 6. The Discharge Monitoring Plan, including survey and monitoring locations, shall be approved prior to implementation. The Agencies shall indicate its approval or disapproval of the submitted plan within 90 days of the originally submitted information. In the event that the Agencies require additional information for the licensee to complete and approve the Plan, the Agencies shall make a written request to the licensee for additional information no later than 30 days after receipt of the submitted information.
 7. The Discharge Monitoring Plan shall be implemented and replace the existing seagrass monitoring plan within one year following the certification of the LNC.

- B. The draft Discharge Monitoring Plan and results of monitoring data collected over the course of the previous and current CREC operating period and NPDES permits will be presented to the Agencies and to Citrus and Levy county staffs at a 1-day workshop in the Crystal River area. Information from this workshop will also provide a basis for developing the Levy Nuclear and Crystal River Energy Complex Discharge Mitigation Plan.
- C. Progress Energy will prepare yearly progress reports, including all data and statistical analyses resulting from the survey and monitoring requirements, and a summary report at the end of 5 years after site certification of the Levy County Nuclear facility and submit the report to the Agencies for review. If the Agencies, in their review of the yearly progress reports, determine inadequacies or the need to modify the Discharge Monitoring Plan, they will notify Progress Energy and a joint meeting will be held to discuss the findings. At the end of the baseline monitoring period, Progress Energy will hold a joint meeting with the Agencies to discuss the results. At that time, the Agencies and Progress Energy will determine what if any modifications need to be made to the Discharge Monitoring Plan for monitoring once the Plant begins operations.
- D. If the Discharge Monitoring Plan is determined to need modifications for monitoring during the operation of the Plant, Progress Energy will submit, within 180 days, a revised Discharge Monitoring Plan to the Agencies for review. The Agencies shall indicate its approval or disapproval of the submitted plan within 90 days of the submitted information. In the event that any of the Agencies requires additional information for the licensee to complete and approve the Discharge Monitoring Plan, the Agencies shall make a written request to the licensee for additional information no later than 30 days after receipt of the submitted information.
- E. Progress Energy will submit, after initiation of operations at the Levy Plant, a yearly progress report, including all data and statistical analyses from the baseline monitoring and an analysis comparing the current data to the baseline data, to the Agencies. If the DEP, in consultation with SWFWMD and FWC, determines that the pre- and post-monitoring data are insufficient to evaluate changes, indicate harm or potential harm to the waters of the State including ecological resources of the Cross Florida Barge Canal and the Withlacoochee River; and/or exceed State or County water quality standards, then additional measures shall be required to evaluate or to abate such impacts. Additional measures include but are not limited to:
1. Enhanced monitoring and/or modeling, and mitigative measures;
 2. Operational changes in the discharge or water cooling system to reduce any such impacts;
 3. Other measures to abate impacts as may be described in the Plan.
- F. Progress Energy will submit a summary report, including all data and statistical analyses from the baseline monitoring and an analysis comparing the current data to the baseline data to DEP and the Agencies. The summary report should be submitted to the Agencies a minimum of 6 months before renewal of the NPDES permit.

C. Mitigation

The siting of the cooling water intake structure and the operations of the plant may have an effect on the Withlacoochee River and the Cross Florida Barge Canal (Barge Canal). Additionally, the existing discharge from the Crystal River Energy Complex (CREC) has been documented to have impacted the seagrasses and associated fauna in the nearshore areas. The combined discharge from the Levy Plant and the CREC may continue to impact the near shore areas and possibly additional acreage. Previous mitigative measures at the CREC site have not resulted in enhancement or re-establishment of the seagrass community in the disturbed area of the discharge plume.

Cross Florida Barge Canal and Withlacoochee River

- A. Within 180 days following certification of the Levy County Nuclear Facility, Progress Energy will submit to the Agencies a Withlacoochee River and the Cross Florida Barge Canal Mitigation Plan (CFBCWR Mitigation Plan). The CFBCWR Mitigation Plan shall include, at a minimum, the following components:
- 1) Plans to alleviate changes in flow, water quality, or biology, as determined from the survey and monitoring, in the Withlacoochee River south of Lake Rousseau and in the lower Withlacoochee River.
 - 2) Funding for an FWC aquatic reconnaissance program to address impacts from impingement and entrainment of marine organisms and any changes in the Barge Canal. The funding will provide support to acquire various types of physical and biological aquatic data. This data will be used to assist in determining the potential for effects and necessary mitigation for projects proposed for development using aquatic resources or proposed to be located in waters of the State of Florida.
 - 3) Possible operational changes in the cooling water intake system to reduce any such impacts.
 - 4) The CFBCWR Mitigation Plan shall be approved prior to implementation. The Agencies shall indicate its approval or disapproval of the submitted plan within 90 days of the submitted information. In the event that any of the Agencies requires additional information for the licensee to complete and approve the CFBCWR Mitigation Plan, the Agencies shall make a written request to the licensee for additional information no later than 30 days after receipt of the submitted information.
 - 5) Upon approval, Progress Energy will start implementation of the CFBCWR Mitigation Plan.
 - 6) Progress Energy will prepare yearly progress reports, including all data and statistical analyses resulting from the implementation of the CFBCWR Mitigation Plan, and a summary report at the end of 5 years or a minimum of 6 months before renewal of the NPDES permit, and submit the report to the Agencies and to Citrus and Levy counties for review. If the Agencies or Citrus or Levy county in their review of the yearly progress reports determine inadequacies or the need to modify the CFBCWR Mitigation Plan, they will notify Progress Energy and a

joint meeting will be held to discuss the findings. If the hydrographic monitoring from the Canal and River Monitoring Plan indicates changes to the circulation and flow, a proposal will be developed to restore circulation patterns.

Crystal River Combined Discharge

- A. Within 180 days following certification of the Levy County Nuclear Facility, Progress Energy will submit to the Agencies a Levy Nuclear and Crystal River Energy Complex Discharge Mitigation Plan (LNCREC Mitigation Plan). The Plan shall include, at a minimum, the following components:
1. Remedial action options if the CREC/Levy Nuclear effluent has adverse impacts on water quality and physical parameters, seagrasses, oysters, or other marine organisms.
 2. Development of a hydrologic model for restoring flows and circulation if deemed necessary from the Canal and River Monitoring Plan.
 3. If the hydrologic modeling, from item 2 above, indicates positive changes, then consideration should be given to re-establishing the "flow-through cuts" along the Barge Canal spoil piles.
 4. Operational changes in the discharge or water cooling system to reduce any such impacts.
 5. The LNCREC Mitigation Plan shall be approved prior to implementation. The Agencies shall indicate its approval or disapproval of the submitted plan within 90 days of the originally submitted information. In the event that any of the Agencies require additional information for the licensee to complete and approve the LNCREC Mitigation Plan, the Agencies shall make a written request to the licensee for additional information no later than 30 days after receipt of the submitted information.
 6. Upon approval, Progress Energy will start implementation of the LNCREC Mitigation Plan.
- B. Progress Energy will prepare yearly progress reports, including all data and statistical analyses resulting from the implementation of the LNCREC Mitigation Plan, and a summary report at the end of 5 years or a minimum of 6 months before renewal of the NPDES permit, and submit the report to the Agencies and to Citrus and Levy counties for review. If the Agencies or Citrus or Levy counties in their review of the yearly progress reports determine inadequacies or the need to modify the LNCREC Mitigation Plan, they will notify Progress Energy and a joint meeting will be held to discuss the findings

Table 1. State- and federally listed species known or potentially occurring in the project area

Common Name	Scientific Name	Fl- status	Fed status
Gopher frog	<i>Rana capito</i>	SSC	
Eastern indigo snake	<i>Drymarchon couperi</i>	T	T
Florida pine snake	<i>Pituophis melanoleucus mugitus</i>	SSC	
Short-tailed snake	<i>Stilosoma extenuatum</i>	T	
Gopher tortoise	<i>Gopherus polyphemus</i>	T	
Florida scrub-jay	<i>Aphelocoma coerulescens</i>	T	T
Little blue heron	<i>Egretta caerulea</i>	SSC	
White ibis	<i>Eudocimus albus</i>	SSC	
Southeastern American kestrel	<i>Falco sparverius paulus</i>	T	
Florida sandhill crane	<i>Grus canadensis pratensis</i>	T	
Bald eagle	<i>Haliaeetus leucocephalus</i>	**	
Red-cockaded woodpecker	<i>Picoides borealis</i>	SSC	E
Florida mouse	<i>Peromyscus floridanus</i>	SSC	
Sherman's fox squirrel	<i>Sciurus niger shermani</i>	SSC	
Florida black bear	<i>Ursus americanus floridanus</i>	T	
Florida manatee	<i>Trichechus manatus latirostris</i>	E	E

*SSC = Species of Special Concern; T = Threatened; E = Endangered; **While the bald eagle has been both state and federally delisted, it is still governed by the state bald eagle management plan.

Attachment 1

STANDARD MANATEE CONDITIONS FOR IN-WATER WORK

2005

The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

- a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.
- b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.
- d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.
- e. Any collision with or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-FWCC. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-232-2580) for north Florida or Vero Beach (1-561-562-3909) for south Florida.
- f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Awareness signs that have already been approved for this use by the Florida Fish and Wildlife Conservation Commission (FWC) must be used. One sign measuring at least 3 ft. by 4 ft. which reads *Caution: Manatee Area* must be posted. A second sign measuring at least 8 1/2" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities.

FWC Approved Manatee Educational Sign Suppliers

ASAP Signs & Designs

624-B Pinellas Street
Clearwater, FL 33756
Phone: (727) 443-4878
Fax: (727) 442-7573

Wilderness Graphics, Inc.

P. O. Box 1635
Tallahassee, FL 32302
Phone: (850) 224-6414
Fax: (850) 561-3943
www.wildernessgraphics.com

Cape Coral Signs & Designs

1311 Del Prado Boulevard
Cape Coral, FL 33990
Phone: (239) 772-9992
Fax: (239) 772-3848

Municipal Supply & Sign Co.

1095 Fifth Avenue, North
P. O. Box 1765
Naples, FL 33939-1765
Phone: (800) 329-5366 or
(239) 262-4639
Fax: (239) 262-4645
www.municipalsigns.com

Vital Signs

104615 Overseas Highway
Key Largo, FL 33037
Phone: (305) 451-5133
Fax: (305) 451-5163

Universal Signs & Accessories

2912 Orange Avenue
Ft. Pierce, FL 34947
Phone: (800) 432-0331 or
(772) 461-0665
Fax: (772) 461-0669

New City Signs

1739 28th Street N.
St. Petersburg, FL 33713
Phone: (727) 323-7897
Fax: (727) 323-1897
www.NewCitySigns.com

United Rentals Highway Technologies

309 Angle Road
Ft. Pierce, FL 34947
Phone: (772) 489-8772
or (800) 489-8758 (FL only)
Fax: (772) 489-8757

CAUTION: MANATEE HABITAT

All project vessels

IDLE SPEED / NO WAKE

**When a manatee is within 50 feet of work
all in-water activities must**

SHUT DOWN

Report any collision or injury to:

1-888-404-FWCC (1-888-404-3922)

Florida Fish and Wildlife Conservation Commission