UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

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October 26, 2010 F/SER46

Ms. Cindy Bladey, Chief
Rules, Announcements, and Directives Branch
Division of Administrative Services
Mailstop TWB-05-B01M
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

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RULES AND DIRECTIVES BRANCH USNRC

Colonel Alfred A. Pantano, Jr., District Engineer
Department of the Army
Jacksonville District Corps of Engineers
1002 West 23rd Street, Suite 350
Panama City, Florida 32405-3648

8/13/2010
75FR49539
(8)

Dear Ms. Bladey and Colonel Pantano:

Thank you for providing the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS), Southeast Region, Habitat Conservation Division the opportunity to comment on the joint Nuclear Regulatory Commission (NRC)/Department of the Army, Corps of Engineers (COE) draft Environmental Impact Statement (DEIS) and essential fish habitat (EFH) assessment dated August 2010 for the Levy Nuclear Plant (LNP), Units 1 and 2, proposed for construction by Progress Energy Florida. NMFS has concurrently reviewed the COE Jacksonville District's August 13, 2010, public notice concerning permit application SAJ-2008-00490 (IP-GAH) announcing the release and availability of the LNP DEIS. Construction of the LNP requires COE issuance of a permit pursuant to Sections 404 and 10 of the Clean Water and Rivers and Harbors Acts, respectively, to perform construction activities on the site and within the Cross Florida Barge Canal. Construction of the plant would occur in Levy County, Florida, and include additional infrastructure in portions of Citrus, Hernando, Hillsborough, Lake, Levy, Marion, Pinellas, Polk, and Sumter counties, Florida.

Progress Energy Florida proposes to construct and operate the LNP electrical generation facility and associated project components, including electrical transmission lines and substations, access roads, a barge slip, a boat ramp, and a cooling tower make-up water pipeline with a water intake structure in the Cross Florida Barge Canal. In addition, approximately 13 miles of blowdown pipelines would be constructed for discharge of cooling water in the existing discharge canal located at the Crystal River Energy Complex in Citrus County, Florida. Approximately 180 miles of additional electrical

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transmission lines are proposed to be constructed to provide power generated by LNP to the existing Florida electrical grid.

The location for proposed LNP Units 1 and 2 is a "Greenfield" site in Levy County, Florida, located approximately ten miles east of the Gulf of Mexico. Progress Energy Florida specified the nuclear reactor design as a Westinghouse Electric Company, LLC AP1000 pressurized water reactor, with expected output ratings for each unit greater than 1000 electrical megawatts. As proposed, the LNP would withdraw approximately 122 million gallons of water per day from the eastern terminal of the Cross Florida Barge Canal for normal electrical generation operations. A closed-cycle, mechanical draft system employing a re-circulating cooling water system would be used for proposed LNP Units 1 and 2. A barge slip, boat ramp, and dock would be constructed along the northern shoreline of the Cross Florida Barge Canal approximately one mile downstream of the proposed cooling water intake structure. The cooling water intake would be located in the Cross Florida Barge Canal approximately seven miles inland from the Gulf of Mexico. To accomplish plant construction, large project components would be transported by vessel to the barge slip via the Gulf of Mexico thence the Cross Florida Barge Canal. Maintenance dredging within the Cross Florida Barge Canal to accommodate anticipated barge traffic is not proposed because the depth of the canal (approximately 12 feet deep at mean low water) has not appreciably changed since the canal was constructed and the project is not anticipated to increase sediment loads within the canal. Construction of the proposed blowdown discharge cooling water pipeline between the proposed LNP and existing discharge canal at the Crystal River Energy Complex facility would require the filling of approximately 4.5 acres of estuarine emergent marsh habitats.

To determine the abundance of aquatic species within the Cross Florida Barge Canal, four stations in the canal were sampled extending from the Inglis Lock structure (located approximately one-half mile east of the proposed cooling water intake structure site), downstream to the mouth, as well as a station offshore of the mouth in the Gulf of Mexico between October 2007 and November 2008. These stations were sampled for motile macro invertebrates, plankton, invertebrates, and fish. Results from the biological surveys in the area of the proposed cooling water intake structure indicate a biologically depauperate community dominated by sedimentary worms and a few euryhaline fish species (e.g., bay anchovy, gulf menhaden, white and striped mullet, and scaled sardine). However, overall sampling results of fish, plankton, and macro invertebrate sampling in the Cross Florida Barge Canal indicate the presence of biologically diverse and dynamic aquatic communities both at the offshore and nearshore stations. The DEIS further indicates that once the LNP is operational, salinity and dissolved oxygen concentrations would increase in the aquatic environment near the cooling water intake structure, resulting in overall improved water quality that may attract additional fish and invertebrate species into the Cross Florida Barge Canal.

Based upon our review of the DEIS, Progress Energy Florida indicates that cooling water intake velocity for the proposed cooling water intake structure would have a design through-screen velocity of less than 0.5 feet per second (fps), which would comply with U. S. Environmental Protection Agency's Phase I Clean Water Act 316(b) Guidelines (66 CFR 65256). Progress Energy Florida calculated anticipated Clean Water Act 316(b)

impacts of cooling water withdrawal from the Cross Florida Barge Canal at the cooling water intake structure and results indicate the approach velocity for the intake bays would be 0.25 fps at the bar screens and 0.5 fps for through-screen flow. To achieve these velocities, the cooling water intake would need to be larger than 106 square feet in size. The zone of hydraulic influence (i.e., the region of the Cross Florida Barge Canal in which a nonmotile organism in the Cross Florida Barge Canal would be drawn into the intake) would extend five miles from the cooling water intake structure westward toward the mouth of the Cross Florida Barge Canal, or in the vicinity of biological sampling station "3." The Cross Florida Barge Canal is entirely tidally influenced, and beyond the calculated downstream five-mile zone of influence the average current velocity in the remaining downstream two miles is greater than the anticipated cooling water intake structure-induced velocity during 90 percent of the year.

Section 5.2.3 of the DEIS suggests salinities in the Cross Florida Barge Canal would increase only slightly with operation of the intake for LNP Units 1 and 2. Using conservative assumptions that the water characteristics may reflect attributes similar to those observed near sampling station "3" at the mouth of the Cross Florida Barge Canal, Progress Energy Florida estimates that the number and diversity of aquatic species is likely to increase near the cooling water intake structure for the life stages of organisms that are found farther downstream in the Cross Florida Barge Canal. The DEIS further indicates station "3" and the offshore station are not known spawning areas and plankton are likely to drift in and out of these areas under tidal influence. This suggests that the potential for entrainment and impingement of aquatic organisms during operation of the cooling water intake structure would likely increase as a result of the changes induced by LNP operations. The DEIS concludes that the overall impingement and entrainment of aquatic organisms from LNP operation is still expected to be minimal.

NMFS' Habitat Conservation and Protected Resources Divisions, NRC, COE, Florida Department of Environmental Protection, and Florida Fish and Wildlife Conservation Commission staff participated in LNP public scoping meetings and associated field inspections hosted by the NRC and the COE during December 2008, and recent joint NRC and COE public workshops and hearings in Crystal River during September 2010. Based upon our observations during the 2008 field inspection; review of aerial photography utilizing Google® Earth software; review of the proposed blowdown pipeline corridor; review of water depths in the Gulf of Mexico immediately offshore of the Cross Florida Barge Canal; and our analysis of the LNP DEIS and EFH assessment, it appears LNP construction and normal electrical generation operations would result in adverse impacts to estuarine water column and estuarine emergent wetlands.

The 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) require that NMFS, regional fishery management councils, and other federal agencies identify and protect important marine and diadromous fish habitats. The EFH provisions of the Magnuson-Stevens Act support one of the nation's overall marine resource management goals – maintaining sustainable fisheries. Critical to achieving this goal is the conservation and enhancement of the quality and quantity of suitable marine fishery habitat. Marine and estuarine water column, estuarine emergent wetlands, and SAV in the project and adjacent areas are designated as EFH for postlarval, juvenile and subadult shrimp; post larval, juvenile and adult red drum; adult spiny

lobster; juvenile Spanish mackerel, gray snapper, red and gag groupers; juvenile and adult gray, yellowtail, and lane snappers. Detailed information on federally managed fisheries and their EFH is provided in the 2005 Generic Amendment of the Fishery Management Plans for the Gulf of Mexico prepared by the Gulf of Mexico Fishery Management Council (GMFMC). In addition to EFH for federally managed species, estuarine emergent wetlands produce nutrients and detritus, important components of the estuarine food chain, and provide nursery, foraging, and refuge habitat for other commercially and recreationally important fish and shellfish. These species include blue crab, bay scallop, bluefish, flounder, snook, striped mullet, spotted seatrout, and Atlantic croaker, as well as forage species such as pinfish, killifish, and gulf menhaden.

From our review of the DEIS, NMFS is concerned with the potential for entrainment and impingement impacts to limited mobility egg and larval stages of fish and shellfish managed by the GMFMC, as well as other estuarine and marine species of importance, that could result from the continuous withdrawal of approximately 122 million gallons of water per day from the Cross Florida Barge Canal for LNP operations. While NMFS recognizes initial sampling results conducted between 2007 through 2008 in the four Cross Florida Barge Canal stations indicated relatively minor abundance of commercially and recreationally important fish and invertebrate ichthyoplankton, particularly in the vicinity of the cooling water intake structure, we believe additional sampling is necessary following plant construction to determine if the cooling water intake operations are causing significant entrainment and impingement impacts to living marine resources.

Further, while the cooling water intake structure design would conform to the Clean Water Act 316(b) Guidelines of less than 0.5 fps uptake water flow, it can reasonably be assumed based upon the performance of other similar intake structures that fish and invertebrate egg and larval life stages will be drawn into the cooling water intake. Although impingement and entrainment studies are proposed for one year following full operation of proposed LNP Units 1 and 2, NMFS believes to further and more accurately quantify potential impingement and entrainment impacts from cooling water withdrawn from the Cross Florida Barge Canal, a minimum five-year ichthyoplankton monitoring plan be implemented. This plan should be developed in conjunction with NMFS, the Florida Department of Environmental Protection, and the Florida Fish and Wildlife Conservation Commission prior to plant construction.

The DEIS also indicates maintenance dredging is not proposed within the Cross Florida Barge Canal to accommodate necessary construction barge traffic; however, there is no discussion of the potential need to dredge the shallow nearshore portions of the Gulf of Mexico for vessel access to the Cross Florida Barge Canal. NMFS recommends the final environmental impact statement (FEIS) address this issue and, if necessary, describe direct, secondary, and cumulative effects such dredging would have on EFH and dependent fishery resources. Should dredging be required, then results from benthic surveys to determine the presence and abundance of submerged aquatic vegetation (SAV) and hardbottom habitats at and near areas to be dredged, as well as an appropriate mitigation plan, should also be included in the FEIS. Finally, it appears the proposed blowdown pipeline corridor would require the filling of approximately 4.5 acres of estuarine emergent wetlands. Based on our review of the proposed corridor, NMFS

believes alternate pipeline routes exist between the LNP site and Crystal River Energy Complex facility that would not require the filling of tidal wetlands.

Finally, preliminary plans for the Inglis Hydropower LLC project (Federal Energy Regulatory Commission Project Number 12783-000), proposed in the Inglis Bypass Canal Spillway approximately 0.7-mile from the LNP cooling water intake structure location, are currently being coordinated through our office by the Federal Energy Regulatory Commission for that project's effects on diadromous fish historically present in the Old Withlacoochee River. The term "diadromous" refers to fish species that migrate between marine and fresh water to complete their life cycles. Estuarine and coastal marine areas downstream from the Inglis Hydropower project site provide valuable habitat for a variety of fish and invertebrates of ecological, commercial, or recreational importance.

Therefore, NMFS Habitat Conservation Division further recommends that the NRC and COE coordinate with the Federal Energy Regulatory Commission to assess the potential cumulative effects of the Levy Nuclear and Inglis Hydropower plants' operations on diadromous species and their associated habitats and address preliminary measures for protection, mitigation, and enhancement of these resources. The assessment should include examination of the potential for dams and project operations to impact passage of diadromous species to and from upstream habitats via the mouth of the Withlacoochee River. The assessment should also examine the potential for project operations, altered instream flows, and changes in water quality to impact species and their habitats, including EFH downstream from these projects and the horizontal and vertical salinity gradients and water flows at the mouth of the Withlacoochee River and barge canal.

Estuarine emergent marsh impacts expected to occur as a result from blowdown pipeline construction activities would require COE authorization under Section 404 of the Clean Water Act. Consistent with the guidance provided through the *Memorandum of Agreement between the U. S. Environmental Protection Agency and the COE Concerning the Determination of Mitigation under the 404(b)(1) Guidelines*, consideration of mitigation measures should be sequential, with primary consideration given to impact avoidance. NMFS believes that avoidance of adverse impacts to estuarine emergent habitats is the best management practice for the conservation of EFH and various fishery resources. Therefore, in consideration of potential impacts to commercially and recreationally important fish and invertebrate species, estuarine emergent wetlands, SAV and hardbottom habitats, and to ensure the conservation of EFH in the Gulf of Mexico, NMFS recommends that final action on the proposed project require the following:

EFH Conservation Recommendations

1. A minimum five-year baseline survey should be developed and coordinated with state and federal natural resource agencies to determine site-specific, year-round impacts to fish and invertebrate resources present at the cooling water intake site following plant operation. Acquired data can then be used to quantitatively calculate potential impacts of LNP operations on identified fishery resources and, if determined necessary, to develop and implement Best

Management Practices and adaptive management mitigation options to further reduce such impacts.

2. A minimum three-year SAV survey, conducted between June 1 through September 30, should be conducted in portions of the Gulf of Mexico offshore of the cooling water discharge canal at the Crystal River Energy Complex facility to determine if discharge of additional cooling water from LNP operations is resulting in adverse impacts to SAV. Following SAV sampling and if survey results indicate diminished SAV densities are occurring as a result of discharge of LNP cooling water, development of an SAV mitigation plan should be developed in consultation with state and federal natural resource agencies.

3. The filling of approximately 4.5 acres of estuarine emergent marsh habitats for proposed blowdown pipeline corridor routing between the LNP and existing Crystal River Energy Complex facility should not be authorized. Alternatively, necessary pipeline construction should be aligned through available upland areas between these sites.

4. If it is determined there is a need for dredging portions of the Gulf of Mexico immediately offshore from the Cross Florida Barge Canal, then benthic surveys should be conducted. Such surveys should also include benthic habitat assessments to determine the presence and abundance of SAV and hardbottom habitats. Results of these surveys should be provided to NMFS staff for review and comment.

5. Provided unavoidable hardbottom and SAV impacts are expected to occur as a result of Item "4.", above, development of a conceptual compensatory mitigation plan for impacts to marine habitats should include the following elements: 1) description of the mitigation plan; 2) quantification of anticipated impact acreage versus proposed mitigation acreage and justification for the proposed mitigation acreage; 3) scientific criteria for determining mitigation success; 4) a project and mitigation implementation schedule; 5) targeted climax communities expected in mitigation area(s), including their acreage and configurations; 6) materials and methods to be used to achieve the intended mitigation; 7) comprehensive five-year monitoring and reporting schedules; and 8) contingency plans by which equivalent mitigation would be completed if the proposed mitigation fails.

Please be advised that the Magnuson-Stevens Act and the regulation to implement the EFH provisions (50 CFR Section 600.920) require the NRC and the COE to provide a written response to this letter. That response must be provided within 30 days and at least 10 days prior to final agency action. A preliminary response is acceptable if final action cannot be completed within 30 days. The NRC's and the COE's final responses must include a description of measures to be required to avoid, mitigate, or offset the adverse impacts of the activity. If the NRC's or the COE's response is inconsistent with these EFH conservation recommendations, the action agency must provide an explanation of the reasons for not implementing those recommendation(s). We request

that a copy of your final response also be sent to the GMFMC, 2203 North Lois Avenue, Suite 1100, Tampa, Florida 33607-2370.

Thank you for your consideration of these comments. Please contact Mr. Mark Sramek at the letterhead address, through email at Mark.Sramek@noaa.gov or by calling (727) 824-5311 if you have questions regarding these recommendations.

Sincerely,

Miles M. Croom

Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

cc:
David Keys
PPI
NRC, Doug Bruner
PRD
USFWS
USEPA
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FWCCC