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RULES AND DIRECTIVES
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Florida Fish and Wildlife Conservation Commission

Cindy Bladey, Chief
Rules, Announcements, and Directives Branch (RADB)
Office of Administration
Mail Stop: TWB-05-B01M
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

RECEIVED

RE: Draft Supplement to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants for Crystal River Unit 3 Nuclear Generating Plant, U.S. Nuclear Regulatory Commission Report Number NUREG-1437, Docket ID NRC-2009-0039, Progress Energy Florida, Citrus County, Florida

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Dear Ms. Bladey:

The Division of Habitat and Species Conservation, Habitat Conservation Scientific Services Section of the Florida Fish and Wildlife Conservation Commission (FWC) has coordinated our agency's review of the U.S. Nuclear Regulatory Commission (NRC) Draft Supplement to the Generic Environmental Impact Statement (GEIS), and provides the following comments and recommendations in accordance with the National Environmental Policy Act.

Project Description

Progress Energy Florida proposes to renew the facility operating license for the Crystal River Energy Complex (CREC) Unit 3 Nuclear Generating Plant (CR-3) for an additional 20 years beyond the expiration of the current operating license. The proposed action would include the continued use and maintenance of existing plant facilities and transmission lines. The Crystal River site occupies approximately 4,738 acres consisting of salt marsh, hardwood hammock, pinelands, freshwater swamps, and 1,062 acres in industrial use. The transmission corridors connecting CR-3 to the electric grid are owned and operated by Progress Energy Florida, are approximately 134 miles long, and occupy approximately 2,440 acres. The 500-kilovolt (kv) transmission lines share the first 5.3 miles of corridor, then diverge into the Central Florida line, which continues east; and the Lake Tarpon line, which angles southeast, turns directly south, then turns southwest toward Tarpon Springs.

Issues and Recommendations

Section 2.0 AFFECTED ENVIRONMENT

Section 2.1.6 (Facility Description: Cooling and Auxiliary Water System) describes the cooling and auxiliary water systems of CR-3. This design includes a north dike and a south dike that parallel the dredged canal for miles into the Gulf of Mexico. The FWC's Fish and Wildlife Research Institute (FWRI) notes that for some species, particularly oysters and scallops, the ability for their pelagic larvae to move along a north-south axis may be critical (S. Geiger – FWC Biologist, *pers. comm.*, July 7, 2011). Although the impact of the canal and its associated dikes on the north-south movement of these larvae is difficult to document or quantify, we would like to suggest the inclusion of these invertebrates into Progress Energy's mariculture center to reduce the potential for impacts. In addition, the dikes could be used as nesting sites for least terns and American oystercatchers and should be protected, possibly as part of a larger avian protection plan.

Executive Staff
Nick Wiley
Executive Director

Greg Holder
Assistant Executive Director

Karen Ventimiglia
Chief of Staff

Office of the
Executive Director
Nick Wiley
Executive Director

(850) 487-3796
(850) 921-5786 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

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Section 2.2.5 (Affected Environment: Aquatic Resources): We note that sections 2.2.5.3 (Affected Environment: Aquatic Biota near Crystal River Unit 3 Nuclear Generating Plant) and 2.2.5.4 (Affected Environment: Selected Important Species near Crystal River Unit 3 Generating Plant) contain a number of statements that are not current with regard to nomenclature, research, and species life cycles. Please refer to Enclosure 1 for updated information.

In addition to the updates identified in Enclosure 1, we request that the following information be noted in the final EIS:

In section 2.2.5.4, the studies citing temperature ranges for the bay anchovy were conducted in Mississippi and it is unlikely that they are applicable to Florida. Unpublished data collected by FWRI (E. Matheson-FWC Biologist, *pers. comm.*, July 8, 2011) indicate that water temperatures do not usually get that low in the area around Crystal River during any part of the year. The statement about offshore movement is also more appropriate for more northerly localities.

Section 2.2.7 (Affected Environment: Threatened and Endangered Species) and Table 2-6 reference the listing status of threatened and endangered species. The final EIS should reflect current state listing designations, which was modified in November of 2010. Current listing information can be obtained at the following link:
http://myfwc.com/media/214168/Threatened_Endangered_Species.pdf.

Section 2.2.7.2 (Affected Environment: Threatened and Endangered Terrestrial Species) discusses wood storks, bald eagles, and whooping cranes. Large bird species like the storks and the cranes are known to be subject to collisions with transmission lines that can result in severe injuries or death, particularly in areas where nesting or foraging areas occur in close proximity (J. Rodgers-FWC Biologist, *pers. comm.*, July 5, 2011). According to available data, at least three bald eagle nests and three wading bird nesting locations occur within 1000 meters of the transmission lines (see Enclosure 2). In areas along the transmission corridor where these bird species may nest nearby and cross the transmission corridor to access foraging areas, we recommend the development of an avian protection plan which utilizes diversion devices to reduce the likelihood of collision. We suggest additional surveys be conducted to identify any other potential nesting locations, foraging areas, or flyways. An avian protection plan was required as part of Florida's Conditions of Certification for the Levy nuclear plant and transmission lines, which are in close proximity to CR-3 transmission lines.

Section 4.0 ENVIRONMENTAL IMPACTS OF OPERATION

Section 4.5.2 (Aquatic Resources: Entrainment) Table 4.5.2 contains a notation that all Sciaenidae eggs and prolarvae were assumed to be spot (*Leiostomus xanthurus*). FWC believes this assumption to be incorrect (E. Matheson-FWC Biologist, *pers. comm.*, July 8, 2011), and that Sciaenidae eggs or early larvae found inshore are more likely to be that of other species, such as the spotted seatrout (*Cynoscion nebulosus*).

Section 4.5.3 (Aquatic Resources: Impingement) addresses impingement and the stocking program. The release of first-feeding larvae of striped mullet (*Mugil cephalus*) may not be appropriate as part of the stocking program. First-feeding larval striped mullet are not generally found inshore. They are typically pelagic offshore fish and make a long migration from offshore spawning grounds to inshore nursery habitats. Settled, juvenile mullet would be much more appropriate for inshore stocking. For assistance in developing adequate monitoring protocols that would help ensure an effective stock enhancement program, please consult Ed Matheson (contact information below) with FWC – FWRI for more information and coordination.

Section 4.5.4 (Aquatic Resources: Heat Shock): Page 4.27, lines 11 – 13 refer to the National Pollution Discharge Elimination System (NPDES) permit requirements for a seagrass monitoring and planting program to mitigate for thermal effects to seagrass, which serves as habitat for aquatic organisms. We recommend that the final EIS identify whether the referenced program was implemented, the extent to which it was successful, and any recommended modifications to the monitoring and mitigation requirements.

Page 4-28, lines 16-20 indicate that the applicant must conduct a study to demonstrate that a balanced indigenous community of aquatic organisms will be maintained and protected in the project vicinity regardless of a variance from applicable thermal limitations to surface waters. The GEIS states that at the time of submission of the GEIS, the applicant had proposed a plan of study to assess the potential impacts of the thermal plume from current operation of the CREC on seagrasses, benthic macro-invertebrates, and other aquatic species, but that it had not yet been approved by FDEP. The plan of study is a condition of the current draft NPDES permit.

Seagrass studies have been conducted in Crystal Bay for the Crystal River Energy Complex since the 1980s. These studies, as referenced in the GEIS, 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 near shore areas have been severely impacted as well. The CR-3 thermal discharge will be combined with the Levy Nuclear thermal discharge and as such, we recommend that the final EIS contain references to Florida's Levy Nuclear Conditions of Certification (COCs) and the draft NPDES permit conditions regarding these habitats. Florida's COCs for the proposed Levy Nuclear Plant require the survey and monitoring of oysters, scallops, and submerged aquatic vegetation (SAV) within the combined Levy-Crystal River Complex discharge area.

In addition, the NRC developed a Finite Volume Coastal Ocean Model to evaluate the discharge plume effects. While the NRC modeling shows minimal impacts, it is our understanding that accurate hydrographic-current data that would be used in modeling are not available. The collection of hydrographic-current data is a condition of Florida's Levy Nuclear Conditions of Certification under the Florida Power Plant Siting Act (sections 403.501 - .519, Florida Statutes). In order to assist with accurately evaluating plume effects, we recommend that the final GEIS reflect that Florida's Levy Nuclear Conditions of Certification require the collection of hydrographic-current data to more accurately assess potential impacts. This will also provide the information that the GEIS has indicated will be useful in refining or modifying the impact level of heat shock (page 4-29).

Page 4-28, table 4.5-6, provides Projected Post-Upgrade Summer Operational Discharges and Temperatures for the CREC based on high summer design values for August. Manatees, however, use the discharge canal as a thermal refuge during the winter when the cooling tower is not operating, and while Section 4.5.4 (page 4-23, lines 46-48) states that the average discharge temperature in winter at the Point Of Discharge (POD) is 78.1°F, it does not include the same extent of information for winter temperatures as Table 4.5-6 does for summer temperatures. For purposes of clarification and to assess use by manatees, we recommend that the final EIS provide an analogous Table with change in temperature (ΔT) data based on winter temperatures (specifically January and February).

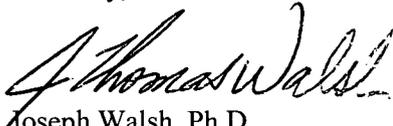
Section 7.0 ENVIRONMENTAL IMPACTS OF DECOMMISSIONING

Section 7.1 (Decommissioning): Page 7-1, lines 26-27, state that there are no site-specific issues related to decommissioning the reactor. However, manatee behavioral changes related to their

use of warm-water sites in this region (including CREC) may occur if there is a significant reduction of the thermal refuge at CREC. Less discharge of warm water is also likely to benefit seagrass and oyster resources through a decrease in the presence of the thermal plume. We believe these issues should be included in any discussion of site specific issues related to decommissioning.

We appreciate the opportunity to review this project. If you or your staff would like to coordinate further on this review, please contact me at 850-413-6966 or by email at joe.walsh@myfwc.com, and I will be glad to help make the necessary arrangements. If there are any specific questions regarding our comments, I encourage your staff or the applicant's representatives to contact James McLaughlin at 863-647-4000, Extension 1135, or by email at james.mclaughlin@myfwc.com. For specific questions regarding aquatic resources impingement and/or entrainment, please contact Ed Matheson at (727) 896-8626, Extension 2223, or by email at eddie.matheson@myfwc.com.

Sincerely,



Joseph Walsh, Ph.D.
Sub-section Leader
Habitat Conservation Scientific Services Section

jw/jdg/jm
Crystal River Unit 3 Supplement to GEIS_3469_072211
ENV 1

Enclosures (2)

cc: Progress Energy Florida
ATTN: Jon Franke – Site Vice President
15760 West Powerline Street
Mail Code: NA2C
Crystal River, FL 34428
Jon.franke@pgnmail.com

Ed Matheson, FWC-FWRI, St. Petersburg
Jim Rodgers, FWC, Gainesville

Enclosure 1

Draft Supplement to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants for Crystal River Unit 3 Nuclear Generating Plant, U.S. Nuclear Regulatory Commission Report Number NUREG-1437, Docket ID NRC-2009-0039, Progress Energy Florida, Citrus County, Florida

Section 2.2.5.3, Aquatic biota near Crystal River Unit 3 Nuclear Generating Plant, lists Sciaenidae and Gerreidae as fish having pelagic larvae. However, larvae of Sciaenidae and Gerreidae are not pelagic.

In section 2.2.5.4, Selected Important Species near CR-3, the correct name for the polka-dot batfish is *Ogcocephalus cubifrons*.

Also in section 2.2.5.4, pigfish are a member of the perciform family, Haemulidae, not Congiopodidae, which is an unrelated family of scorpaeniform fishes.

Also in section 2.2.5.4, larval pinfish begin moving into estuarine waters in winter and spring, rather than spring and early summer.

Also in section 2.2.5.4, statements made on line 28 about the spotted seatrout seem to indicate that these fish can spawn upstream in the freshwater portion of coastal rivers. This is not accurate (E. Matheson- FWC Biologist, *pers. comm.*, July 8, 2011) and contradictory to statements made in lines 36 and 37 on page 2-55.

Also in section 2.2.5.4, it is indicated that striped mullet are catadromous fish. On the contrary, Florida populations of striped mullet are not considered catadromous, rather, they are euryhaline estuarine fish that only enter freshwater on occasion (E. Matheson- FWC Biologist, *pers. comm.*, July 8, 2011). This is supported by the information in lines 25-28 on page 2-56.

In section 4.5.3 discussing abundant impinged species, the blueback herring (*Alosa aestivalis*) is included as one of the species; however, *Alosa aestivalis* does not occur in the Gulf of Mexico, and it is likely that either of the two Gulf species of *Alosa*, *A. chrysochloris* and *A. alabamae*, are either totally absent from the study area or very rare (E. Matheson- FWC Biologist, *pers. comm.*, July 8, 2011). These specimens were probably another member of the family Clupeidae.

Crystal River Unit 3 Supplement to GEIS 3469 - Transmission Lines Wading Bird and Eagle Nest Locations (within 1000m buffer)

