

February 10, 2003

Dr. Roy Crabtree
Regional Administrator
National Marine Fisheries Service
Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, FL 33702

SUBJECT: INFORMAL SECTION 7 CONSULTATION FOR ST. LUCIE NUCLEAR PLANT

Dear Dr. Crabtree:

In a letter dated August 23, 2002, the NRC staff requested reinitiation of consultation for the green turtle (*Chelonia mydas*) and the loggerhead turtle (*Caretta caretta*) under Section 7 of the Endangered Species Act of 1973 for the St. Lucie nuclear plant, located on Hutchinson Island, St. Lucie County, Florida. The St. Lucie plant is owned and operated by the Florida Power and Light Company (FP&L, the licensee). The request for reinitiation of consultation was based on the reported causally related mortality rate for these two species during calendar year 2001. In our August 23, 2002, letter, we committed to provide you with the facts surrounding the 2001 green and loggerhead turtle mortalities attributed to plant operation. Additionally, we agreed to provide you with the details of FP&L's plans to modify the St. Lucie intake canal and the 12.7-cm (5-inch) turtle block (barrier) net.

Concurrent with our request for reinitiation of consultation, the NRC staff requested information from the licensee related to the 2001 causally related mortalities of green and loggerhead turtles as well as details related to the modification of the intake canal and turtle block net. The licensee provided the requested information in a letter dated September 20, 2002. A copy of the licensee's September 20, 2002, letter is enclosed for your information. In 2001, the licensee recovered 592 green and loggerhead (321 green and 271 loggerhead) sea turtles from the intake canal. Of the 592 total recoveries, the licensee reported six turtle mortalities (five green and one loggerhead) in the intake canal, attributable to plant operations. Details of the six mortalities, provided in the licensee's September 20, 2002, letter are summarized below.

On March 30, 2001, a moribund green turtle was recovered from the 12.7-cm (5-inch) block net. Although a necropsy was performed, the results were inconclusive. The circumstances of the recovery did not indicate a cause of death. Because no obvious cause of death was apparent, the licensee conservatively attributed the mortality to plant operation. In early November 2001, four moribund turtles (three green and one loggerhead) were recovered from the 12.7-cm (5-inch) net. The four mortalities occurred over two days, during a period of high algae and debris loading of the barrier net caused by the passage of Hurricane Michelle south of the plant. The licensee attributed net deformation and increased flow rates through the net, due to the high levels of debris in the water column, as the possible cause of the turtle mortality. The debris loading of the net became so severe that the net had to be lowered for a period of time to avoid destruction of the net. In late November 2001, an additional weakened, underweight turtle (green) was recovered from the Unit 1 intake well near the plant. The turtle died within

hours after recovery. The licensee believed that this turtle bypassed the block nets during the period of high debris flow and could have bypassed the net when it was lowered. Once beyond the block nets, there was no opportunity for escape from the intake canal and the turtle was eventually drawn into the plant intake structure. Five out of the six turtle mortalities in 2001 were associated with the November debris event. The NRC staff finds that the high turtle mortality during 2001 was substantially related to the condition and design of the block net system.

In 2002, the licensee initiated additional activities in the intake canal to further reduce the possibility of future turtle mortalities. The intake canal was dredged between the easternmost headwall region and the Route A1A Bridge. By increasing the cross-sectional area of the canal, the water flow rate was reduced in the area of the turtle block nets. The lower flow rate in the vicinity of the block net should reduce the likelihood of turtles being trapped against the nets. The 12.7-cm (5-inch) mesh net was replaced with a new 12.7-cm (5-inch) net made of a more durable material with a UV-resistant coating that has a smooth surface resistant to fraying. These qualities should reduce net deformation and fouling by debris and algae. A sediment removal system was installed at the base of the net to reduce sediment buildup. The system uses a pump and eductor to transfer silt to a location west of the second block net and the Route A1A Bridge. The licensee also installed two new concrete intermediate posts in the canal and a new net guy system to minimize net deformation and ballooning. This is expected to be particularly effective in reducing net deformation during periods of high debris flow. The modifications to the barrier net and the dredging of the intake canal were completed by the end of November 2002.

The improvements that the licensee made to the net and canal is expected to reduce the likelihood of future mortalities, particularly those associated with periods of high debris flow such as the conditions associated with Hurricane Michelle. We believe the losses sustained in 2001 were unusual and the result of a combination of bad weather, old net design, and a shoaling intake canal.

The turtle capture data for 2002 support the conclusion that the mortalities in 2001 were an unusual occurrence. The annual environmental operating report for 2002 will not be available before April 2003. However, the NRC staff requested the turtle capture information for 2002 from the licensee to assist us in this consultation. A total of 632 turtles [629 greens and loggerheads and 3 hawksbill sea turtles (*Eretmochelys imbricata*)] were recovered from the intake canal. During calendar year 2002, two green turtle mortalities were attributed to plant operation. One was recovered against the old 12.7-cm (5-inch) block net and one was determined to have drowned in one of the capture (drift) nets. A total of 18 turtles were determined to be injured or diseased from causes not attributable to plant operation. One additional mortality was determined not to be causally related to plant operation. The moribund turtle was badly tangled in fishing line and believed to have died due to the entanglement. Although a greater number of green and loggerhead turtles were recovered in 2002, there were significantly fewer casually related mortalities. We expect that this low rate will continue in the future, particularly after the significant improvements to the canal and block net. Therefore, the staff believes that the incidental take statement contained in the current Biological Opinion issued on May 4, 2001, as modified by letter dated July 30, 2002, remains appropriate and valid and no modifications to the Biological Opinion are necessary at this time. The staff does not

plan to initiate formal consultation at this time; however, should the design improvements installed in 2002 perform as expected or better, then the NRC may, in the future, revisit consultation to reduce the incidental take limits. The staff believes that the elevated mortality rate during 2001 was an unusual occurrence resulting from severe weather and a block net system that could not cope with the debris loading present in association with a hurricane. Modifications to the canal and block net system should minimize or prevent future episodes of higher than expected mortality.

We will provide you with a copy of the 2002 annual environmental operating report after we receive it from the licensee in late April. This report will contain detailed data and analyses concerning turtle captures in 2002. If you have any comments or questions, please contact Dr. Michael Masnik at 301-415-1191 or MTM2@NRC.GOV.

Sincerely,

/RA/

Pao-Tsin Kuo, Program Director
License Renewal and Environmental Impacts
Division of Regulatory Improvement Program
Office of Nuclear Reactor Regulation

Docket Nos.: 50-335 and 50-389

Enclosure: As stated

cc: w/encl.: See next page

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Accession nos.:

1. Letter to Dr. Roy Crabtree: **ML030420130**
2. Letter from FPL, Re: St. Lucie Units 1 & 2, Request for Information, Reinitiation of ESA Section 7 Consultation, September 20, 2002: **ML022680524**
3. Pkg. **ML030310607**

*See previous concurrence

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