



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

February 9, 2018

Mr. David Bernhart  
Assistant Regional Administrator for Protected Resources  
National Marine Fisheries Service  
Southeast Regional Office  
263 13th Avenue South  
St. Petersburg, FL 33701

SUBJECT: REQUEST TO REINITIATE ENDANGERED SPECIES ACT SECTION 7  
FORMAL CONSULTATION FOR ST. LUCIE PLANT, UNITS 1 AND 2

Dear Mr. Bernhart:

With this letter, the U.S. Nuclear Regulatory Commission (NRC, the staff) requests to reinstate formal consultation with the National Marine Fisheries Service (NMFS) under the provisions of Section 7 of the Endangered Species Act of 1973, as amended (ESA), for the St. Lucie Plant, Units 1 and 2 (St. Lucie).

The NMFS issued a biological opinion<sup>1</sup> for the continued operation of St. Lucie on March 24, 2016, that exempts from the prohibitions of ESA Section 9 the incidental take of smalltooth sawfish (*Pristis pectinata*) and five species of sea turtles<sup>2</sup> subject to compliance with the reasonable and prudent measures and terms and conditions of the incidental take statement. In November 2017, the holder of the NRC renewed facility operating license for St. Lucie, Florida Power and Light Company (FPL), notified the NRC that the smalltooth sawfish capture<sup>3</sup> limit had been exceeded.<sup>4</sup> Subsequently, in January 2018, FPL notified the NRC that the capture limit for Kemp's ridley sea turtles (*Lepidochelys kempii*) had also been exceeded. The NMFS's and the U.S. Fish and Wildlife Service's joint regulations at Title 50 of the *Code of Federal Regulations* (50 CFR) 402.16, "Reinitiation of formal consultation," include criteria that require reinitiation of formal consultation where discretionary Federal involvement or control over the action has been retained or is authorized by law. The first criterion for reinitiation is "[i]f the amount or extent of taking specified in the incidental take statement is exceeded" (50 CFR 402.16(a)).

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<sup>1</sup> National Marine Fisheries Service. Biological Opinion for Continued Operation of St. Lucie Nuclear Power Plants, Units 1 and 2 in St. Lucie County, Florida. March 24, 2016. Agencywide Documents Access and Management System (ADAMS) Accession No. [ML16084A616](#).

<sup>2</sup> The five species of sea turtles are: loggerhead (*Caretta caretta*), green (*Chelonia mydas*), leatherback (*Dermochelys coriacea*), hawksbill (*Eretmochelys imbricata*), and Kemp's ridley (*Lepidochelys kempii*).

<sup>3</sup> In the biological opinion, the NMFS explains that "capture" means the take of smalltooth sawfish and sea turtles through entrainment of individuals into the St. Lucie intake pipes and subsequent entrapment in the intake canal.

<sup>4</sup> Letter from FPL to NRC. St. Lucie Units 1 and 2 Environmental Protection Plan Report, November 2, 2017, Unusual or Important Environmental Event – Capture of a Smalltooth Sawfish. November 28, 2017. ADAMS Accession No. [ML17340A340](#).

This letter describes the smalltooth sawfish and Kemp's ridley sea turtle incidental takes that led to the incidental take limit exceedances and requests that the NMFS amend the St. Lucie biological opinion's incidental take statement. Additionally, this letter provides the NMFS with information related to FPL's testing of excluder devices for the St. Lucie intake pipe velocity caps, which are required as terms and conditions of the biological opinion. The staff requests that the NMFS consider alternatives to constructing and implementing the excluder devices in the amended incidental take statement based on the results of FPL's excluder device testing. Finally, and for the NMFS's awareness, this letter describes FPL's recent intake canal dredging project and associated protocol to ensure the protection of smalltooth sawfish and sea turtles during dredging activities.

## I. Smalltooth Sawfish Incidental Takes

The NMFS's biological opinion allows for the non-lethal capture (regardless of injury) of one smalltooth sawfish every five years from the date of the biological opinion, March 24, 2016, through March 1, 2036. Smalltooth sawfish have a relatively narrow profile, and individuals can easily swim into the St. Lucie intake canal and become entangled in the free-floating sea turtle nets. Since the issuance of the biological opinion, FPL has captured two smalltooth sawfish in the St. Lucie intake canal. On September 17, 2017, FPL staff biologists retrieved a smalltooth sawfish from the plant's intake canal.<sup>5</sup> The individual was 11 feet in length and weighed approximately 300 pounds. FPL staff biologists retrieved a second smalltooth sawfish from the plant's intake canal on November 2, 2017.<sup>4</sup> The individual was 12.2 feet in length and weighed approximately 400 pounds. Both captured individuals were in good condition and released without injury. Processing and release activities were directed by a scientist from the Florida Atlantic University-Harbor Branch Oceanographic Institute. Additionally, FPL staff biologists had received smalltooth sawfish handling training by the Florida Fish and Wildlife Conservation Commission on June 2, 2016, in accordance with biological opinion term and condition 5.

Following each of these incidental takes, FPL staff biologists monitored a 3-mile stretch of the beach along the release site for any possible delayed impacts on the captured smalltooth sawfish for seven consecutive days. No delayed impacts were reported. The various turtle barriers and nets were also inspected and were found to be in working order.

Although no historic or current abundance trends or estimates exist for the smalltooth sawfish, available data indicate that the population has declined dramatically in U.S. waters over the last century.<sup>6</sup> Carlson et al. (2013) reports that the species has likely been extirpated from large portions of its historic range and that the remaining populations are small and fragmented.<sup>7</sup> Nevertheless, capture and sighting data indicate that the species is currently reproducing, and data from a fisheries-dependent monitoring program in Everglades National Park indicate an increasing trend in abundance over the past decade.<sup>8</sup> Simpfendorfer (2000) published the most

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<sup>5</sup> NRC Headquarters Operations Officer Notification of Smalltooth Sawfish Capture at St. Lucie. September 17, 2017. ADAMS Accession No. [ML17261B134](#).

<sup>6</sup> National Marine Fisheries Service. "Smalltooth Sawfish (*Pristis pectinata*)." Available at <http://www.nmfs.noaa.gov/pr/species/fish/smalltooth-sawfish.html>.

<sup>7</sup> Carlson JK, Wiley T, Smith K. 2013. "*Pristis pectinata*." The IUCN Red List of Threatened Species 2013: e.T18175A43398238. Available at <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T18175A43398238.en>.

<sup>8</sup> Carlson JK, Osborne J, Schmidt TW. 2007. Monitoring the recovery of smalltooth sawfish, *Pristis pectinata*, using standardized relative indices of abundance. *Biological Conservation* 136:195-202.

recent estimated intrinsic rate of natural population increase for the species, which is an estimated 8 to 13 percent increase per year with population doubling likely occurring every 5.4 to 8.5 years.<sup>9</sup> Although this rate of increase is low, the NRC staff believes that additional captures of smalltooth sawfish in the St. Lucie intake canal within the 5-year period specified in the biological opinion are likely given that two captures occurred within a 6-week period this year and that the current population is estimated to double in roughly the same time period.

## II. Kemp's Ridley Sea Turtle Incidental Takes

The NMFS's biological opinion allows for the capture of 8 Kemp's ridley sea turtles annually. Kemp's ridley sea turtles are relatively small sea turtles, and juveniles can be pulled into the St. Lucie intake pipe and subsequently become entrapped in the intake canal. In January 2018, FPL captured 9 Kemp's ridley sea turtle individuals in the St. Lucie intake canal. All individuals were alive and healthy, and FPL staff biologists released the turtles back to the Atlantic Ocean in accordance with the terms and conditions of the biological opinion.

Of the seven extant species of sea turtles, the Kemp's ridley sea turtle has declined to the lowest population level. Nesting primarily occurs on the beaches of Rancho Nuevo, Tepehuajes, and Barra del Tordo in Tamaulipas, Mexico, although some nesting also occurs in Veracruz, Mexico, and at Padre Island National Seashore in Texas, but on a much smaller scale. When nesting aggregations were discovered on the Rancho Nuevo beaches in the mid-1900s, adult female populations were estimated to be in excess of 40,000 individuals. By the mid-1980s, however, the estimated number of nesting females had plummeted to fewer than 250. The population began to slowly rebound in the 1990s with nest numbers increasing by roughly 15 percent each year through 2009. Although declines in nest numbers have been observed in some recent years (2010, 2013, and 2014), the general trend in nest numbers over the past decade remains positive.<sup>10</sup>

The capture of 9 Kemp's ridley sea turtles in January 2018 may be the result of inter-annual variation or it may be correlated more broadly with the upward trend in the species' population. In either case, the NRC staff believes that additional captures of Kemp's ridley sea turtles in the St. Lucie intake canal within calendar year 2018 are possible.

## III. Excluder Device Testing Results

The terms and conditions of the biological opinion require FPL to design, test, construct, and implement excluder devices for the intake pipe velocity caps at St. Lucie. As part of the design process, FPL must consult with the NMFS and the NRC on the design and test results. The design must minimize the number of nesting or egg-bearing female sea turtles that enter the intake pipelines, and the device must be tested onsite before in-water construction. In-water construction must begin no later than the first half of 2018. The terms and conditions allow for reasonable deviations from the schedule in the event of human safety concerns, such as severe weather or plant operational issues.

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Carlson JK, Osborne J. 2012. Relative abundance of smalltooth sawfish (*Pristis pectinata*) based on the Everglades National Park Creel Survey. NOAA Technical Memorandum NMFS-SEFSC-626.

<sup>9</sup> Simpfendorfer CA. 2000. Predicting population recovery rates for endangered western Atlantic sawfishes using demographic analysis. *Environmental Biology of Fishes* 58(4): 371-377.

<sup>10</sup> Information in this paragraph is derived from the NMFS's biological opinion and from the following reference: National Marine Fisheries Service. "Kemp's Ridley Turtle (*Lepidochelys kempii*)." Available at <http://www.nmfs.noaa.gov/pr/species/turtles/kemp Ridley.html>.

In 2016, FPL constructed a salt water test tank adjacent to the intake canal that used recirculation pumps to simulate the flow parameters of the intake canal. The tank was equipped with a mock velocity cap and the proposed excluder device grating to mimic field conditions at the offshore structure. The tank included several video cameras and two Plexiglass viewing windows from which observations of sea turtles interacting with the excluder device were made. Ten loggerhead and green sea turtles were tested between December 2016 and February 2017. On February 20, 2017, a loggerhead turtle “failed” the test and became wedged between the top of the excluder device grating and the bottom of the mock velocity cap and was unable to remove its appendages for over two minutes. At that time, the pumps were turned off, the test was terminated, and the turtle was removed without harm and released into the ocean. Following the failure, the NMFS directed FPL to suspend further testing until the issue that caused the testing failure could be reviewed and appropriately resolved.

In May 2017, FPL provided the NMFS, the NRC, and the Florida Fish and Wildlife Conservation Commission with an interim report on the excluder device testing. In June 2017, FPL provided the parties with access to video files of the turtle testing. Since that time, FPL has been evaluating the causes of the testing failure and potential redesign options for the excluder devices. FPL has indicated to the NRC staff that it will submit a final report on the excluder device testing to the agencies for their review and comment in the first quarter of 2018. Although FPL submitted a construction schedule for the excluder devices to the NMFS in March 2017, the NMFS has acknowledged that the testing failure will necessitate re-evaluation of and changes to the excluder device design as well as associated delays in the construction schedule.

Given the testing failure and the lack of effective design modification options, the NRC requests that the NMFS consider alternatives to the excluder device as part of the reinitiated consultation and that the NMFS make any associated amendments to the terms and conditions of the incidental take statement, as appropriate. The proposed alternatives and justification for those alternatives will be included in FPL’s final report on the excluder device testing.

#### **IV. Intake Canal Dredging Project**

In the first quarter of 2018, FPL plans to initiate dredging in the St. Lucie intake canal. FPL will undertake dredging from the headwall to 25 yards beyond the 5-inch net. Once the dredging approaches the 5-inch net, FPL will remove the net and replace it with a new 5-inch net. A second stage of dredging may continue past the 8-inch net if FPL determines it to be necessary during the initial stage of the project.

FPL submitted a brief project description as well as protocol for turtle and smalltooth sawfish safety to the NMFS for its review in November 2017. During dredging activities, the protocol states that FPL personnel, staff biologists, and contractors will:

- conduct dredging activities only during daylight hours,
- maintain a cage over the dredge suction at all times to prevent wildlife injury,
- monitor the canal for turtle and smalltooth sawfish activity,
- use an underwater camera to detect sea turtles or smalltooth sawfish within 50 feet of the suction hose,

- immediately stop dredging activities if a turtle or smalltooth sawfish is detected until the individual is greater than 50 feet away or captured by Inwater Research Group biologists,
- proactively dip net turtles to reduce the resident population in the intake canal during dredge activities, and
- initiate hand captures of sea turtles in the intake canal when visibility allows.

FPL expects that the dredging project will occur over a period of six to seven months. If any sea turtles or smalltooth sawfish are injured or killed as a result of the dredging, the biological opinion's terms and conditions would require FPL to report those incidents to the NMFS and the NRC.

## **V. Request to Revise Incidental Take Statement**

As previously referenced, the NMFS issued a final biological opinion and incidental take statement for continued operation of St. Lucie on March 24, 2016. The biological opinion exempts from the prohibitions of ESA Section 9 the incidental take of smalltooth sawfish and five species of sea turtles subject to compliance with the reasonable and prudent measures and terms and conditions of the incidental take statement. With this letter, the NRC requests the reinitiation of formal consultation with the NMFS and that the NMFS revise the incidental take statement of the biological opinion to address the following:

- the level of allowable captures of smalltooth sawfish,
- the level of allowable captures of Kemp's ridley sea turtles, and
- the terms and conditions related to the testing and implementation of excluder devices.

Information supporting these requests appears in Sections I through III of this letter. The NRC staff requests that the NMFS work with the staff to complete the reinitiated consultation and issue the revised incidental take statement within the 135-day timeframe set forth at 50 CFR 402.14(e). If such a timeframe cannot be met, please contact Ms. Briana Grange of my staff to discuss an alternative timeframe at your earliest convenience. Ms. Grange's contact information appears below in Section VI.

## **VI. Conclusion**

Should you need to discuss the requests made in this letter or any other matters related to St. Lucie and ESA Section 7 consultation, please contact Briana Grange, Aquatic Biologist, by phone at 301-415-1042 or by e-mail at [briana.grange@nrc.gov](mailto:briana.grange@nrc.gov).

Sincerely,

*/RA/*

Benjamin Beasley, Chief  
Environmental Review and NEPA Branch  
Division of Materials and License Renewal  
Office of Nuclear Reactor Regulation

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FORMAL CONSULTATION FOR ST. LUCIE PLANT, UNITS 1 AND 2

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