



December 13, 2018

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RA-18-103

National Marine Fisheries Service Northeast Region
Protected Resources Division
One Blackburn Drive
Gloucester, MA 01930
Attention: Julie Crocker, Section 7 Coordinator

Oyster Creek Nuclear Generating Station
Renewed Facility Operating License No. DPR-16
NRC Docket No. 50-219

Subject: Annual Sea Turtle Incidental Take Report – 2018

Dear Ms. Crocker:

Enclosed is a copy of the 2018 Annual Sea Turtle Incidental Take Report for the Oyster Creek Nuclear Generating Station. The report is submitted in accordance with Terms and Conditions No. 8 of the Incidental Take Statement of the 2011 Endangered Species Act Section 7 Consultation Biological Opinion.

If you have any questions concerning this submittal, please contact Jerry Chrisman, at (609) 971-4470.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Dostal", written over a horizontal line.

Jeff Dostal
Site Decommissioning Director
Oyster Creek Nuclear Generating Station

Enclosure

c: NRC Document Control Desk
Administrator, Region I
NRC Project Manager
NRC Decommissioning Inspector

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Enclosure to RA-18-103

Annual Report of Sea Turtle Incidental Takes - 2018

Oyster Creek Nuclear Generating Station

Renewed Facility Operating License No. DPR-16

Docket No. 50-219

Exelon Generation

December 2018

Introduction

This Annual Report of Sea Turtle Incidental Takes provides a summary of the incidental takes of all species of sea turtles at the Oyster Creek Nuclear Generating Station (OCNGS) during 2018. The annual report is required by Terms and Conditions No. 8 of the Incidental Take Statement of the 2011 Endangered Species Act Section 7 Consultation Biological Opinion. This report covers all incidental takes and sightings of sea turtles that occurred during 2018.

Incidental Take Reports documenting the circumstances of incidental sea turtle captures were completed following the (4) sea turtle incidental takes at OCNGS during 2018. Details regarding these incidents were provided to the NMFS and USNRC within 30 days of each occurrence. Sea Turtle Incidental Take Reports 2018-1 through 2018-4 are summarized in Attachment 1. Photographs and necropsy information for the four turtles have already been supplied with the individual reports and therefore are not included in this report.

<u>Take</u>	<u>Incidental Take Date /Time (condition and species)</u>	
2018-1	Monday, June 4, 2018/0835	(live Loggerhead)
2018-2	Tuesday, July 17, 2018/0849	(deceased Kemp's Ridley)
2018-3	Thursday, July 26, 2018/2009	(live Loggerhead)
2018-4	Monday, August 6, 2018/1140	(deceased Kemp's Ridley)

Comparison of Annual Sea Turtle Incidental Takes with Prior Years

The (4) incidental takes during 2018 at OCNGS are less than the average of approximately (6) incidental takes per year recorded since 2011, but is comparable with the quantity of sea turtles collected during the past 3-years. The annual abundance of sea turtles in this vicinity appears to be highly variable, unpredictable, and unrelated to the operation of OCNGS.

There are several factors that may influence the number of sea turtle incidental takes that occur at the OCNGS:

- Historically, after the Barnegat Inlet was deepened during dredging operations in the early 1990s, there was a resulting increase in the tidal volume of water entering and exiting the inlet on a single tidal cycle, as well as a slightly greater tidal range at Oyster Creek. Incidental takes of sea turtles also began to occur at OCNGS after the dredging, and may partially explain the occurrence of the turtles. The Barnegat Inlet is the only tidal inlet near Oyster Creek which provides access to the Atlantic Ocean.
- Physical factors, such as an oceanic front or an oceanic eddy occurring closer to Barnegat Inlet, may also play a part in the prevalence of sea turtles near Oyster Creek because oceanic fronts have been shown to be used as a migratory and forage habitat by sea turtles (Polovina et al, 2000).
- Experience has also shown that the passage of a severe storm or pressure system near Barnegat Inlet can cause major increases in winds, waves, tides and tidal prism in shallow estuarine waters such as Barnegat Bay. These events could increase the likelihood of slowly swimming organisms such as sea turtles occurring in the estuary.

- It is likely that the local variability of sea turtle abundance is also related to biological factors including the abundance of organisms on which sea turtles prefer to feed, including crabs such as blue crabs, horseshoe crabs, and calico crabs, as well as sponges and various types of algae.
- The lower than average number of incidental takes in the past 3-years may have been based on unfavorable physical conditions or lack of prey. This recent trend parallels a similar trend of generally decreasing sea turtle strandings reported by the Sea Turtle Stranding and Salvage Network (STSSN) along this portion of the coast.
- Increased regulatory protection of sea turtles under the Endangered Species Act also began in the early 1990's which contribute to the overall abundance of sea turtles in the region.

Many years of environmental sampling conducted near OCNGS have repeatedly demonstrated that the abundance of various marine organisms can vary considerably from year to year. This is particularly true for seasonal migrants, whose abundance in Barnegat Bay is highly dependent upon physical and biological factors along the migratory route. Therefore, the observed annual variation in sea turtle incidental takes at OCNGS is not considered to be significant.

In the most recent OCNGS Biological Opinion and ITS, issued in November 2011, NMFS determined that no more than (71) Kemp's Ridley sea turtles, (6) Loggerhead sea turtles, and (11) Atlantic Green sea turtles are likely to be directly affected by interaction with OCNGS during the remainder of the OCNGS operating license (i.e., through 2029). The cumulative numbers of post-2011 incidental takes are listed below and can be used for comparison with the allowable species totals during the remainder of the OCNGS operating license. Please note that OCNGS surpassed the limit of (6) Loggerhead sea turtles in 2018.

Cumulative Total Sea Turtle Takes To-Date

	Kemp's Ridley	Loggerhead	Green	TOTAL
1992 to 2010	50	11	8	69
2011	6	1	1	8
2012	4	0	1	5
2013	7	2	0	9
2014	7	1	0	8
2015	8	0	4	12
2016	1	1	1	3
2017	2	1	1	4
2018	2	2	0	4
TOTAL (1992 to 2018)	87	19	16	122

As of September 17, 2018, Oyster Creek has terminated operations of OCNGS. Therefore, based on the significant reduction to intake canal flow velocities, incidental sea turtle takes are not anticipated in the future. As a result, a request for re-initiation of the biological opinion has been submitted to the NRC. Although support from the MMSC may not be needed, OCNGS has confirmed ongoing support in 2019 from the MMSC for both transfers of live sea turtles for rehabilitation and as the primary facility for necropsies. Additionally, OCNGS has continued to observe exceptional efforts by the dedicated and capable MMSC staff for the care and rehabilitation of sea turtles transferred to the Brigantine facility.

OCNGS's continuous objective is to protect sea turtles that arrive at the plant and to return as many to safety as possible. OCNGS's program for the protection of threatened and endangered sea turtles has been successful based on the cumulative sea turtles incidentally captured at OCNGS that have been rehabilitated and released as healthy to the Atlantic Ocean.

References

Polovina, J.J., D.R. Kobayashi, D.M. Ellis, M.P. Seki, and G.H. Balazs. 2000. Turtles on the edge: Movement of loggerhead turtles (*Caretta caretta*) along oceanic fronts in the central North Pacific, 1997-1998. *Fish. Oceanogr.*, 9: 71-82.

Enclosure to RA-18-103

ATTACHMENT 1

2018 Incidental Take Reports

	Incidental Take 2018-001	Incidental Take 2018-002	Incidental Take 2018-003	Incidental Take 2018-004
OPERATIONS DEPARTMENT:				
Observer's full name	Scott Radwin	Greg Marshall	Brian Briedinger	Matthew Ross
Reporter's full name	Scott Radwin	Peeter Must	Brian Briedinger	Matthew Ross
Species Identification	Loggerhead	Kemps Ridley	Loggerhead	Kemp's Ridley
Site of Impingement (CWS or DWS):	DWS	DWS	CWS	DWS
Bay Number:	6	5	4	4
Date animal observed:	4-June-18	17-July-18	26-July-18	6-Aug-18
Time animal observed:	08:15	08:49	19:47	11:26
Date animal collected:	4-June-18	17-July-18	26-July-18	6-Aug-18
Time animal collected:	08:35	08:49	20:09	11:40
CONDITIONS AT COLLECTION:				
Tidal Stage:	Outgoing Tide	Outgoing Tide	Incoming Tide	Low Tide
Cloud conditions:	Cloudy	Sunny & Clear	Clear	Clear
Precipitation:	Drizzling	None	None	None/Sunny
Intake water temperature:	18.8°C	27°C	28.2°C	28.8°C
Other conditions	None	None	None	None
Number of CW pumps running:	4	4	4	4
Number of DW pumps running:	2	2	2	2
Reactor power level at observation:	100%	92%	87.6%	70%
Reactor power previous 48-hours:	100%	92%	87.7%	70%
Date of last screen inspection:	4-June-18	17-July-18	26-July-18	6-Aug-18
Time of last screen inspection:	08:00	04:15	16:05	09:00
ENVIRONMENTAL DEPARTMENT:				
Date Brigantine MMSC contacted:	4-June-18	17-July-18	26-July-18	6-Aug-18
Time Brigantine MMSC contacted:	08:43	09:03	20:10	11:50

	Incidental Take 2018-001	Incidental Take 2018-002	Incidental Take 2018-003	Incidental Take 2018-004
Date Animal picked up by MMSC:	4-June-18	17-July-18	26-July-18	N/A
Time Animal picked up by MMSC:	10:25	10:30	22:32	N/A
State of animal when first observed:	Alive	Deceased	Alive	Deceased
State of animal when collected:	Alive	Deceased	Alive	Deceased
State of animal when picked up:	Alive	Deceased	Alive	Deceased
State of animal arriving at MMSC:	Alive. Fractured Right side of carapace in three spots. Fractured plastron on right side in three spots.	Deceased with two puncture wounds on plastron.	Alive with older thoracic injury.	Deceased turtle with cuts to top right and lower left carapace and internal organs exposed
Final disposition of animal:	Alive, taken to MMSC rehab facility.	Deceased, taken to MMSC for necropsy.	Euthanized by MMSC staff due to older thoracic injury	Burial - Offsite
Carapace Length - Curved	46.5 cm	42.0 cm	67.7 cm	12-in
Carapace Length - Straight	38.6 cm	37.25 cm	64.2 cm	11-in
Carapace Width - Curved:	47.0 cm	41.0 cm	67.1 cm	12-in
Carapace Width - Straight:	42.0 cm	34.0 cm	54.3 cm	11-in
Weight - lbs. (kg)	31.4-lbs	12.3-lbs	73-lbs	5-lbs
Existing Tag Number	No tag	No tag	No tag	No tag
Photograph attached	Yes	Yes	Yes	Yes
Diagram of wounds, abnormalities, tag locations attached	Yes	Yes	Yes	Yes
Description of Animal	Loggerhead	Kemps Ridley	Loggerhead	Kemps Ridley

	Incidental Take 2018-001	Incidental Take 2018-002	Incidental Take 2018-003	Incidental Take 2018-004
All information sent to: National Marine Fisheries Service, Northeast Region; Protected Resources Division; Attention: Endangered Species Coordinator; One Blackburn Drive; Gloucester, MA 01930	Yes	Yes	Yes	Yes