



AmerGen Energy Company, LLC
Oyster Creek
US Route 9 South, P.O. Box 388
Forked River, NJ 08731-0388

www.exeloncorp.com

An Exelon Company

January 3, 2005
2130-04-20334
2120-042-2872

National Marine Fisheries Service Northeast Region
Protected Resources Division
One Blackburn Drive
Gloucester, MA 01930
Attention: Pasquale Scida

Dear Mr. Scida:

Subject: OYSTER CREEK GENERATING STATION (OCGS)
DOCKET NO. 50-219
ANNUAL SEA TURTLE INCIDENTAL CAPTURE REPORT - 2004

Enclosed is a copy of the 2004 Annual Sea Turtle Incidental Capture Report for the Oyster Creek Generating Station. The report is submitted in accordance with Condition 10 of the Incidental Take Statement of the OCGS Endangered Species Act Biological Opinion.

If you have any questions concerning this submittal, please contact Mr. David Fawcett, Licensing Engineer at 609-971-4284 or Mr. Malcolm Browne, Environmental Specialist, at 609-971-4124.

Sincerely,

A handwritten signature in black ink, appearing to read "C. N. Swenson". The signature is written in a cursive style with a large, looping initial "C".

C. N. Swenson
Vice President, Oyster Creek Generating Station

CNS/MEB/dif

Enclosure: Annual Sea Turtle Report Incidental Captures - 2004

cc: NRC Document Control Desk
Samuel J. Collins, Administrator, Region 1
Peter Tam, NRC Project Manager
Robert Summers, Senior Resident Inspector

JE23

ANNUAL REPORT OF SEA TURTLE INCIDENTAL CAPTURES - 2004

OYSTER CREEK GENERATING STATION

LICENSE NO. DPR-16

DOCKET NO. 50-219

Prepared by:

AMERGEN ENERGY COMPANY

December 2004

Introduction

The Annual Report of Sea Turtle Incidental Captures provides a summary of the incidental captures of all species of sea turtles at the Oyster Creek Generating Station (OCGS) during the past year. The report is required by Condition 10 of the Incidental Take Statement of the OCGS Endangered Species Act, Section 7 Consultation, Biological Opinion. This report covers all incidental captures which occurred during 2004.

Incidental Capture Reports documenting the circumstances of incidental captures of sea turtles are completed following any OCGS sea turtle incidental capture and are provided to NMFS and USNRC. A complete summary of the incident reports concerning the capture of endangered sea turtles entitled "Sea Turtle Incidental Capture Report 2004-1 through 2004-8" is provided herein. The circumstances surrounding the incidental captures that occurred during 2004 are described below. In all cases the incidental captures were reported to the Nuclear Regulatory Commission and the National Marine Fisheries Service within 24 hours of capture. Inspections and cleaning of cooling water intake trash bars continue to be conducted in accordance with Conditions 1 and 4 of the Incidental Take Statement.

Annual Summary of Sea Turtle Incidental Takes – 2004

Incidental Capture Report 2004-1 - July 4, 2004

At approximately 12:15 PM on Sunday July 4, 2004, an OCGS Operator performing a routine cleaning of the trash racks noticed a sea turtle among the vegetation and debris removed from Bay # 4 of the dilution water intake structure. The turtle appeared to be either comatose or dead. In accordance with OCGS procedures, Operators initiated resuscitation of the sea turtle but were unable to revive it. OCGS Environmental personnel who took custody of the turtle confirmed it to be a juvenile Kemp's ridley sea turtle. The water temperature at the time of the incidental capture was approximately 25.6°C (78.1°F) and the OCGS was operating at 100 percent power with four circulating water pumps and two dilution pumps in operation. Although it is impossible to say precisely how long the turtle had been on the trash bars prior to removal, the dilution water trash racks had been inspected earlier the same day at 8:00 AM. The turtle was not observed during that trash rack inspection.

The turtle measured 26.5 cm (10.4 in) carapace length straight line and weighed 5.4 kg (11.9 lb). Some small scrapes were observed on the ventral surface of the carapace. It was not possible to determine definitively whether the turtle had died prior to arriving at OCGS or as a result of interaction with the OCGS intake. No tags were present on the turtle when captured.

The turtle was taken to the MMSC in Brigantine, NJ at approximately 3:00 PM on July 4, 2004. At the MMSC, the turtle was examined, measured and a necropsy was performed. MMSC personnel indicated that the necropsy indicated that the lungs were compressed, but that the cause of death was indeterminate. The turtle was buried by MMSC personnel at Brigantine, NJ.

Incidental Capture Report 2004-2 - July 11, 2004

At approximately 2:22 PM on Sunday July 11, 2004, an OCGS operator preparing to perform a routine cleaning of the trash racks noticed a sea turtle swimming in the water immediately upstream of the trash racks in Bay # 5 of the dilution water intake structure. The turtle appeared briefly at the water surface before diving out of sight. In accordance with OCGS procedures, operators immediately initiated efforts to retrieve the turtle as rapidly and gently as possible. OCGS Environmental personnel who took custody of the turtle confirmed it to be a juvenile Kemp's ridley sea turtle. The water temperature at the time of the incidental capture was approximately 27.5°C (81.5°F) and OCGS was operating at 100 percent power with four circulating water pumps and two dilution pumps in operation. Although it is impossible to say precisely how long the turtle had been swimming in the area of the trash bars prior to removal, the dilution water trash racks had been inspected earlier the same day at 1:15 PM. The turtle was not observed during that trash rack inspection.

The turtle measured 22.3 cm (8.8 in) carapace length straight line and weighed 1.8 kg (4.0 lb). Some very minor scrapes were observed on the ventral surface of the carapace. No external tags were present on the turtle when captured.

The turtle was taken to the MMSC in Brigantine, NJ at approximately 4:23 PM on July 11, 2004. At the MMSC, the turtle was examined and held to ensure it was feeding well. The turtle was released two days later to a safe location off of Brigantine, NJ.

Incidental Capture Report 2004-3 - July 16, 2004

At approximately 11:00 AM on Friday July 16, 2004, an OCGS Operator performing a routine cleaning of the trash racks noticed a sea turtle among the vegetation and debris removed from Bay # 5 of the dilution water intake structure. The turtle appeared to be alive and in good condition when captured. OCGS Environmental personnel who took custody of the turtle confirmed it to be a juvenile Kemp's ridley sea turtle. The water temperature at the time of the incidental capture was approximately 24.4°C (76.0°F) and the OCGS was operating at 100 percent power with four circulating water pumps and two dilution pumps in operation. Although it is impossible to say precisely how long the turtle had been on the trash bars prior to removal, the dilution water trash racks had been inspected earlier the same day at 9:00 AM. The turtle was not observed during that trash rack inspection.

The turtle measured 28.0 cm (11.0 in) carapace length straight line and weighed 3.1 kg (6.9 lb). Some small scrapes were observed on the plastron (undersurface of the carapace). No tags were present on the turtle when captured.

The turtle was taken to the MMSC in Brigantine, NJ at approximately 1:00 PM on July 16, 2004. At the MMSC, the turtle was examined, fed and observed. The turtle was released by MMSC personnel to a safe location off Brigantine, NJ.

Incidental Capture Report 2004-4 - July 20, 2004

At approximately 12:13 PM on Tuesday July 20, 2004, an OCGS Operator performing a routine cleaning of the trash racks noticed a sea turtle among the vegetation and debris removed from Bay # 1 of the circulating water intake structure. The turtle appeared to be either comatose or dead. In accordance with OCGS procedures, Operators initiated resuscitation of the sea turtle but were unable to revive it. OCGS Environmental personnel who took custody of the turtle confirmed it to be a juvenile Kemp's ridley sea turtle. The water temperature at the time of the incidental capture was approximately 26.5°C (79.7°F) and the OCGS was operating at 100 percent power with four circulating water pumps and two dilution pumps in operation. Although it is impossible to say precisely how long the turtle had been on the trash bars prior to removal, the circulating water trash racks had been inspected at 9:15 PM the previous evening. The turtle was not observed during that trash rack inspection.

The turtle measured only 18.3 cm (7.2 in) carapace length straight line and weighed just 0.8 kg (1.8 lb). A small puncture wound about 1.3 cm (0.5 in) in diameter was observed on the left rear surface of the carapace. It was not possible to determine definitively whether the turtle had died prior to arriving at OCGS or as a result of interaction with the OCGS intake. No tags were present on the turtle when captured.

The turtle was taken to the MMSC in Brigantine, NJ at approximately 10:00 AM on July 21, 2004. At the MMSC, the turtle was examined, measured and a necropsy was performed. MMSC personnel included the results of the necropsy on the STSSN form and the turtle was buried by MMSC personnel at Brigantine, NJ.

Incidental Capture Report 2004-5 – August 7, 2004

At approximately 9:00 AM on Saturday August 7, 2004, an OCGS Operator performing a routine cleaning of the trash racks noticed a sea turtle among the vegetation and debris removed from Bay #5 of the dilution water intake structure. The turtle appeared to be alive, healthy and moving about normally. OCGS personnel who took custody of the turtle confirmed it to be a juvenile Kemp's ridley sea turtle. The water temperature at the time of the incidental capture was approximately 22.7°C (72.8°F) and the OCGS was operating at 100 percent power with four circulating water pumps and two dilution pumps in operation. Although it is impossible to say precisely how long the turtle had been on the trash bars prior to removal, the dilution water trash racks had been inspected at 5:15 AM the same morning. The turtle was not observed during that trash rack inspection.

The turtle measured 27.0 cm (10.6 in) carapace length straight line and weighed 3.2 kg (7.0 lb). A small bruise on the plastron was noted. Also, a healed scar from a previous injury (i.e., not related to interaction with the OCGS) was noted on the left side of the turtle's head, immediately in front of its left eye. No tags were present on the turtle when captured.

The turtle was taken to the MMSC in Brigantine, NJ during the morning of August 7, 2004. At the MMSC, the turtle was examined, measured, observed, tagged and subsequently released to safety in the ocean off Brigantine, NJ.

Incidental Capture Report 2004-6 – September 11, 2004

At approximately 10:10 AM on Saturday September 11, 2004, an OCGS Operator performing a routine cleaning of the trash racks noticed a sea turtle among the vegetation and debris removed from Bay # 4 of the dilution water intake structure. The turtle appeared to be either comatose or dead. In accordance with OCGS procedures, Operators initiated resuscitation of the sea turtle but were unable to revive it. OCGS Environmental personnel who took custody of the turtle confirmed it to be a juvenile Kemp's ridley sea turtle. The water temperature at the time of the incidental capture was approximately 24.3°C (75.8°F) and the OCGS was operating at 100 percent power with four circulating water pumps and two dilution pumps in operation. Although it is impossible to say precisely how long the turtle had been on the trash bars prior to removal, the dilution water trash racks had been inspected and cleaned the previous morning. The turtle was not observed during that trash rack inspection and cleaning.

The turtle measured 22.3 cm (8.8 in) carapace length straight line and weighed 2.2 kg (4.8 lb). A small puncture wound was observed on the underside of the neck. No tags were present on the turtle when captured.

The turtle was taken to the MMSC in Brigantine, NJ at approximately 12:30 PM on September 11, 2004. At the MMSC, the turtle was examined and measured. The turtle was transferred to the New Bolton Center of the University of Pennsylvania School of Veterinary Medicine, where a necropsy was performed. It was not possible to determine definitively whether the turtle had died prior to arriving at OCGS or as a result of interaction with the OCGS intake.

Incidental Capture Report 2004-7 – September 12, 2004

At approximately 11:29 PM on Sunday September 12, 2004, an OCGS Operator performing a routine cleaning of the trash racks noticed a sea turtle among the vegetation and debris removed from Bay # 5 of the circulating water intake structure. The turtle appeared to be healthy, alert and moving about normally. OCGS Environmental personnel confirmed it to be a juvenile Kemp's ridley sea turtle. The water temperature at the time of the incidental capture was approximately 24.9°C (76.8°F) and the OCGS was operating at 40 percent power with four circulating water pumps and two dilution pumps in operation. Although it is impossible to say precisely how long the turtle had been on the trash bars prior to removal, the circulating water trash racks had been inspected at 8:00 PM the same evening. The turtle was not observed during that trash rack inspection.

The turtle measured 21.0 cm (8.3 in) carapace length straight line and weighed 1.4 kg (3.1 lb). The left front flipper was nearly entirely missing due to a previous injury that had completely healed. No tags or scarring from tags were present on the turtle when captured.

The turtle was taken to the MMSC in Brigantine, NJ at approximately 7:00 AM on September 13, 2004. At the MMSC, the turtle was examined, measured, fed and held for subsequent release. The turtle was transported to the Virginia Marine Science Museum during the week of September 27, 2004 for tagging and release to the Atlantic Ocean. The release of the turtle from a more southerly locale eliminated the possibility of autumn cold stunning effects that could have occurred if the turtle had been released from a New Jersey location at that time of year.

Incidental Capture Report 2004-8 – September 23, 2004

At approximately 9:45 PM on Thursday September 23, 2004, an OCGS operator performing a routine cleaning of the trash racks noticed a sea turtle among the vegetation and debris removed from Bay #3 of the circulating water intake structure. The turtle appeared to be alert and responsive. OCGS Environmental personnel who took custody of the turtle confirmed it to be a juvenile Kemp's ridley sea turtle. The water temperature at the time of the incidental capture was approximately 21.9°C (71.4°F) and OCGS was operating at 100 percent power with four circulating water pumps and two dilution pumps in operation. Although it is impossible to say precisely how long the turtle had been on the trash bars prior to removal, the circulating water trash racks had been inspected earlier the same day. The turtle was not observed during that trash rack inspection.

The turtle measured 24.2 cm (9.5 in) carapace length straight line and weighed 1.9 kg (4.2 lb). Small abrasions on the underside of the carapace of the turtle were observed. No tags or scarring from previous tags were present on the turtle when captured.

The turtle was taken to the MMSC in Brigantine, NJ at approximately 6:00 AM on September 24, 2004. At the MMSC, the turtle was examined, measured, fed and held for observation prior to release. The turtle was transported to the Virginia Marine Science Museum during the week of September 27, 2004 for tagging and release to the Atlantic Ocean. The release of the turtle from a more southerly locale eliminated the possibility of autumn cold stunning effects that could have occurred if the turtle had been released from a New Jersey location at that time of year.

Comparison of Annual Sea Turtle Incidental Takes With Prior Years

Regarding trends in the number of incidental sea turtle captures at the OCGS, eight incidental captures occurred during 2004 which is greater than the long term average of slightly over two incidental captures per year recorded over the last decade. However, the annual abundance of sea turtles in this vicinity appears to be highly variable, unpredictable, and unrelated to the operation of the OCGS. There are several factors that may influence the number of sea turtle incidental captures that occur at the OCGS. Barnegat Inlet, the only tidal inlet in the vicinity of Oyster Creek, which provides access to Barnegat Bay from the Atlantic Ocean, was deepened during dredging operations in the early 1990's. Completion of the Barnegat Inlet dredging operation resulted in an increase in the tidal prism, or volume of water entering and exiting the inlet on a single tidal cycle, as well as a slightly greater tidal range at Oyster Creek. The deepening of Barnegat Inlet and associated waterway channels was completed immediately prior to 1992, when incidental captures of sea turtles began to occur at OCGS, and may partially explain the occurrence of the turtles.

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, such as blue crabs, horseshoe crabs, and calico crabs. Blue crabs have been particularly abundant in Barnegat Bay in recent years, in contrast to other coastal bays along the Atlantic coast such as Chesapeake Bay. Physical factors, such as an oceanic front or an oceanic gyre occurring unusually close 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. During 2004, an unusually high number of hurricanes and major tropical storms occurred, which could have caused sea turtles to seek or remain within shallow estuarine areas such as Barnegat Bay for longer periods of time than normal.

Many years of environmental sampling conducted near the OCGS have repeatedly demonstrated that the abundance of various marine organisms can vary considerably from year to year, often by orders of magnitude. This is particularly true for seasonal migrants, whose abundance in Barnegat Bay is highly dependent upon physical and biological factors along the migratory route. The continuing trend of greatly increasing numbers of Kemp's ridley nesting females which has been documented in the scientific literature, as well as the possibility of corresponding significant increases in recruitment of Kemp's juveniles in recent years, are other factors which could have led to the higher than usual number of incidental captures at the OCGS. Therefore, the observed annual variation in sea turtle incidental captures at the OCGS from a minimum of zero to a maximum of eight per year is not considered particularly significant. The ultimate goal of the considerable effort being put forward at the OCGS for the protection of sea turtles is to protect the turtles that do arrive at the plant, and to release as many turtles as possible to safety. The OCGS program for the protection of threatened and endangered sea turtles can be considered to be quite successful because most of the sea turtles incidentally captured at OCGS since 1992 have subsequently been released alive and well, to the Atlantic Ocean in locations free from potential cold-shock, due to the efforts of OCGS personnel.

Because the number of incidental captures of Kemp's ridley turtles during 2004 at the OCGS exceeded the Incidental Take Statement (ITS) limit, a request for reinitiation of formal Section 7 consultation was submitted to National Marine Fisheries Service (NMFS) during August 2004 (P.-T. Kuo, USNRC letter dtd 8/26/04 to P. A. Kurul, NMFS). Furthermore, an updated biological assessment which includes a detailed discussion of the incidental captures of sea turtles at the OCGS that have occurred since the current biological opinion was issued during July 2001 has been prepared for submittal to NMFS.

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.

Pao-Tsin Kuo, USNRC Docket No. 50-219 letter to Patricia A. Kurl, NMFS dated 8/26/04, entitled "Request for Reinitiation of Formal Section 7 Consultation under the Endangered Species Act regarding sea turtles at the Oyster Creek Nuclear Generating Station".