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Technical Specifications
Appendix B, Section 3.5.1(A)

March 29, 2004

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U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

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

Subject: Annual Environmental Operating Report (AEOR) - 2003

Enclosed are two copies of the 2003 Annual Environmental Operating Report (AEOR) for the Oyster Creek Generating Station. The AEOR is submitted in accordance with Appendix B, Section 3.5.1(A) of the Oyster Creek Environmental Technical Specifications, as well as Condition 10 of the Incidental Take Statement of the OCGS Endangered Species Act, Section 7 Consultation, Biological Opinion.

If any further information or assistance is needed, please contact David Fawcett at 609-971-4284.

Sincerely,



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

CNS/MB/DIF
Enclosure

cc: H. J. Miller, Administrator, USNRC Region I
P. S. Tam, USNRC Senior Project Manager, Oyster Creek
R. J. Summers, USNRC Senior Resident Inspector, Oyster Creek
File No. 04031

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2003

ANNUAL ENVIRONMENTAL OPERATING REPORT

ENCLOSURE

OYSTER CREEK GENERATING STATION

LICENSE NO. DPR-16

DOCKET NO. 50-219

Prepared by:

AMERGEN ENERGY COMPANY, LLC

March 2004

1.0 Introduction

The Annual Environmental Operating Report (AEOR) provides a summary of the non-radiological environmental monitoring activities at the Oyster Creek Generating Station (OCGS) during the past year. The AEOR is required by Oyster Creek Environmental Technical Specification (OCETS) Appendix B, Section 3.5.1(A), as well as Condition 10 of the Incidental Take Statement of the OCGS Endangered Species Act, Section 7 Consultation, Biological Opinion. This AEOR covers the period from January 1, 2003 through December 31, 2003.

The OCGS is a boiling water reactor of 619 MWe maximum (summer) dependable net capacity, owned and operated by AmerGen Energy Company, LLC. The OCGS is located in Lacey Township, Ocean County, New Jersey. The plant is subject to Operating License No. DPR-16. The date of initial reactor criticality was May 3, 1969 and the commercial generation of power began on December 23, 1969.

2.0 Environmental Monitoring

This section is intended to address the results of environmental monitoring required to be implemented by Section 1.1 "Fish Kill Monitoring Program" of the OCETS during the reporting period. No reportable fish kills occurred at the OCGS during 2003.

3.0 Special Monitoring and Study Activities

Incidental Capture Reports documenting the circumstances of incidental captures of sea turtles during the reporting period are included in this report in accordance with Condition 10 of the Incidental Take Statement of the OCGS Endangered Species Act, Section 7 Consultation, Biological Opinion. Incident reports concerning the capture of endangered sea turtles entitled "Sea Turtle Incidental Capture Report 2003-1, and 2003-2" are provided as Attachments I and II, respectively. The circumstances surrounding the two incidental captures that occurred during 2003 are summarized below. In both 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

A juvenile Kemp's ridley sea turtle was captured alive after being gently removed from the dilution water system trash racks during the afternoon of September 24, 2003. NRC

and NMFS were notified within 24 hours of the capture and the turtle was taken to the Marine Mammal Stranding Center (MMSC) in Brigantine, NJ by OCGS Environmental personnel. MMSC personnel observed and fed the turtle and found it to be active. Small scrapes of unknown origin were observed on the dorsal and ventral sides of the carapace but determined not to be a significant concern by MMSC personnel because the turtle was initially eating on its own and appeared healthy. The turtle was held at MMSC for less than a day before it was tagged and released into near-shore waters near Brigantine, NJ.

During the morning of October 24, 2003, a juvenile green sea turtle was gently removed from in front of the circulating water system intake structure. The turtle was alive and apparently healthy at the time of capture. Although there were no obvious boat propeller wounds on the turtle or any open wounds which would have been life-threatening, the turtle had small scrapes on its dorsal and lateral portions of its carapace. Environmental personnel transported the turtle to MMSC the same morning and it was held there for care, feeding, and observation. The turtle was held at the MMSC until arrangements were made to transfer it to the Virginia Marine Science Museum (VMSM). VMSM is a more southerly location where the turtle could be observed, fed, and eventually released without fear of it dying due to cold shock.

Regarding trends in the number of incidental sea turtle captures at the OCGS, two incidental captures occurred during 2003 which is nearly identical to the long term average of slightly over two incidental captures per year recorded over the last decade.

The annual total of two incidental captures during 2003 is the same as the total of two sea turtles incidentally captured at OCGS during 2002. 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 which 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. 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.

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. Therefore, the observed annual variation in sea turtle incidental captures at the OCGS from a minimum of zero to a maximum of five 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.

4.0 Additional Information

This section provides additional information that is required by Section 3.5.1 of the Appendix B OCETS.

4.1 Summary of OCETS Non-Routine Environmental Operating Reports (NEOR) and the corrective action taken to remedy them.

There were no Non-Routine Environmental Operating Reports (NEORs) during 2003.

4.2 Summary of changes made to state and federal permits and certificates which pertain to the requirements of the OCETS.

There were no changes to the State and Federal permits and certificates that pertain to the requirements of the OCETS during the reporting period.

4.3 Summary of changes in station design which could involve an environmental impact.

One plant modification that enhances Dilution Pump reliability was performed by eliminating pump trip signals from low cooling water pressure or low flow. These signals have caused spurious actuations and inadvertent pump trips in the past. Automatic pump trip protection for degraded cooling water conditions now relies on lube oil temperature monitoring. There were no other changes in station design during the reporting period, which could involve an environmental impact.

4.4 Summary of changes to the OCETS

There were no changes to the OCETS during the reporting period.

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 I
ATTACHMENT I

DOCKET 50-219

SEA TURTLE INCIDENTAL CAPTURE REPORT 2003-1

OYSTER CREEK GENERATING STATION

Sea Turtle Incidental Capture Report 2003-1

At approximately 1455 hours on Wednesday September 24, 2003, an Oyster Creek Generating Station (OCGS) operator performing a routine cleaning of the trash racks noticed a sea turtle among the vegetation and debris removed from Bay # 6 of the dilution water intake structure. The turtle was found to be apparently healthy and moving about normally. OCGS Environmental personnel who took custody of the turtle confirmed it to be a juvenile Kemp's ridley sea turtle (Lepidochelys kempfi). The water temperature at the time of the incidental capture was approximately 73 F (22.8 C) and OCGS was in operation at 100% 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 cleaned earlier the prior day at 1345 hours. The turtle was not observed during that trash rack inspection and cleaning.

The turtle measured 12.2 in (31.1 cm) carapace length straight line and weighed 11.5 lb (5.2 kg). Sex was not determined. Some small scrapes were observed on the dorsal and ventral surfaces of the carapace. No tags were present on the turtle when captured. USNRC and NMFS personnel were notified of the capture within 24 hours on September 24, 2003.

The turtle was taken to the Marine Mammal Stranding Center (MMSC) in Brigantine, NJ at approximately 1745 hours on September 24, 2003. At the MMSC, the turtle was examined and fed. The scrapes on the carapace were determined not to be a significant concern. The turtle was held at the MMSC for less than a day before it was tagged and released into near-shore Atlantic Ocean waters around Brigantine, NJ.

ENCLOSURE I
ATTACHMENT II

DOCKET 50-219

SEA TURTLE INCIDENTAL CAPTURE REPORT 2003-2

OYSTER CREEK GENERATING STATION

Sea Turtle Incidental Capture Report 2003-2

At approximately 0850 hours on Friday October 24, 2003, an Oyster Creek Generating Station (OCGS) operator performing a routine cleaning of the trash racks noticed a sea turtle against Bay # 4 of the circulating water intake structure. The turtle was found to be apparently healthy and moving about normally. OCGS Environmental personnel who took custody of the turtle confirmed it to be a juvenile green sea turtle (Chelonia mydas). The water temperature at the time of the incidental capture was approximately 53 F (11.7 C) and OCGS was in operation at 98% power with three 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 morning at 0500 hours. The turtle was not observed during that trash rack inspection.

The turtle measured 14.2 in (36.2 cm) carapace length straight line and weighed 15.3 lb (6.9 kg). Sex was not determined. Some small scrapes and chips were observed on the dorsal and lateral surfaces of the carapace. No tags were present on the turtle when captured. USNRC and NMFS personnel were notified of the capture within 24 hours on October 24, 2003.

The turtle was taken to the Marine Mammal Stranding Center (MMSC) in Brigantine, NJ at approximately 1030 hours on October 24, 2003. At the MMSC, the turtle was examined and fed. The scrapes on the carapace were determined not to be a significant concern. The turtle was held at the MMSC until arrangements were made to transfer it to the Virginia Marine Science Museum (VMSM). VMSM is a more southerly location where the turtle could be observed, fed, and eventually released without fear of it dying due to cold shock.