

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

February 22, 2002
2130-02-20041
2120-022-2677

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

Dear Sir:

Subject: OYSTER CREEK GENERATING STATION (OCGS)
DOCKET NO. 50-219
ANNUAL ENVIRONMENTAL OPERATING REPORT (AEOR) - 2001

Enclosed are two copies of the 2001 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 Biological Opinion.

If you have any questions concerning this submittal, please contact Mr. John Rogers, Licensing Engineer, at 609-971-4893.

Sincerely,



2/22/02

Ron J. DeGregorio
Vice President
Oyster Creek

RJD/JR

Enclosure

cc: Administrator, Region I
NRC Project Manager
Senior Resident Inspector

IE23

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, 2001 through December 31, 2001.

The OCGS is a boiling water reactor of 620 MWe maximum (summer) dependable net capacity, owned by Exelon Corporation and operated by AmerGen Energy Company. 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. A reportable fish kill event occurred at the OCGS subsequent to an unplanned reactor shutdown which occurred on the morning of November 11, 2001. The OCGS plant operators gradually reduced electrical output from 100% to 25% and then shut down the reactor at 1504 hrs on November 11, 2001, which resulted in a cold-shock fish kill due to the decrease in water temperatures in the OCGS discharge canal following reactor shutdown. Plant operators manually shut down the plant after determining that the 1B2 electrical bus, one of the major electrical cables supplying OCGS plant systems with electrical power, had developed a short and failed. A report summarizing the results of the environmental monitoring undertaken to determine the extent of the fish kill entitled "Fish Kill Monitoring Report for November 2001" was previously submitted and is provided as Attachment I.

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 2001-1, 2001-2, and 2001-3" are provided as Attachments II through IV, respectively. The circumstances surrounding the three incidental captures that occurred during 2001 are summarized 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

A juvenile Atlantic green sea turtle was captured alive in front of the circulating water system trash racks during the afternoon of July 8, 2001. NRC and NMFS were notified within 24 hours of the capture and the turtle was taken to the Marine Mammal Stranding Center (MMS) in Brigantine, NJ by OCGS Environmental personnel. MMS personnel observed and fed the turtle and found it to be very active and with no visible wounds or signs of injury. The turtle was subsequently safely released into the Great Bay, NJ estuary on July 16, 2001.

During the afternoon of July 22, 2001, a juvenile Kemp's ridley sea turtle was gently removed from in front of the dilution water system intake structure. The turtle was either comatose or dead at the time of capture, and attempts made for several hours to resuscitate the turtle were unsuccessful. Although there were no obvious boat propeller wounds on the turtle or any open wounds which would have been life-threatening, there was a laceration on the left side of its neck. Environmental personnel transported the turtle to MMS so that arrangements for a necropsy of the turtle could be made. AmerGen Energy was subsequently advised by MMS that a necropsy could not be performed on the turtle because it had been frozen briefly after incidental capture. As a result, AmerGen has changed its sea turtle handling protocol to refrigerate, rather than freeze dead turtles to prevent tissue damage and ensure that specimens remain suitable to be necropsied.

During the early morning of August 14, 2001, a juvenile Kemp's ridley sea turtle was gently dipnetted from in front of the dilution water system intake structure. The turtle was either comatose or dead at the time of capture, and attempts made for several hours to resuscitate the turtle were unsuccessful. Because there were no boat propeller wounds on the turtle or any open wounds which would have been life-threatening, Environmental personnel transported the turtle to MMS so that arrangements for a necropsy of the turtle could be made. AmerGen Energy was subsequently advised by MMS that a necropsy could not be performed on the turtle because it had been frozen briefly after incidental capture. As indicated above, the sea turtle handling protocol has been changed to ensure that specimens remain suitable for necropsy.

Regarding trends in the number of incidental sea turtle captures at the OCGS, three incidental captures occurred during 2001 which is similar to the longterm average of slightly over two incidental captures per year recorded over the last decade. The annual total of three incidental captures during 2001 is a reduction from the total of five sea turtles incidentally captured at OCGS during 2000. 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 NEORs during the reporting period.

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 made to federal or state permits during the reporting period which pertain to the requirements of the OCETS.

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

There were no 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.

2001

ANNUAL ENVIRONMENTAL OPERATING REPORT

OYSTER CREEK GENERATING STATION

LICENSE NO. DPR-16

DOCKET NO. 50-219

Prepared by:

AMERGEN ENERGY COMPANY

January 2002

ATTACHMENT I

DOCKET 50-219

FISH KILL MONITORING REPORT FOR NOVEMBER 2001

December 11, 2001
2130-01-20248

United States Nuclear Regulatory Commission
Document Control Desk
Washington DC 20555

Subject: Oyster Creek Generating Station
Docket 50-219
Results of the Environmental Monitoring Inspection following a Reactor Shutdown

On November 11, 2001, a cable supplying the 480 VAC distribution system failed at the Oyster Creek Generating Station. As a result of this event, a normal reactor shutdown was performed. The decrease in temperature of the water in the discharge canal required an inspection of the shores of the discharge canal and lower reaches of Oyster Creek for an impact on aquatic life (Technical Specification Appendix B, Section 1.1.1.A.) The results of that inspection are enclosed with this cover letter.

If any further information or assistance is required, please contact Mr. John Rogers of my staff at 609.971.4893.

Very truly yours,



Ron J. DeGregorio, Vice President
Oyster Creek Generating Station

RJD/JJR
Enclosure

cc: Administrator, Region I
NRC Senior Project Manager
Senior Resident Inspector
NJ Department of Environmental Protection (3 addressees)

OYSTER CREEK GENERATING STATION
FISH KILL MONITORING REPORT

AmerGen Energy Company, LLC

November 2001

Executive Summary

The Oyster Creek Generating Station (OCGS) was operating at 100% power on the morning of November 11, 2001 when plant operators determined that the 1B2 electrical bus, one of the major electrical cables supplying OCGS plant systems with electrical power, had developed a short and failed. Plant operators gradually reduced OCGS electrical output from 100% to approximately 25% between 0900 and 1500 hrs. At 1504 hrs on November 11 a manual shutdown was initiated.

In order to reduce potential cold shock effects on fish in the discharge canal, the two operating thermal dilution pumps were stopped prior to the reactor shutdown so that the temperature of the discharge canal would decrease as slowly as possible. Discharge canal temperatures were approximately 21° C (70° F) at noon on November 11 and decreased gradually to approximately 15° C (59° F) by 1504 hrs (the time of the manual shutdown). However, as a result of the plant shutdown, the water temperature at the main condenser discharge canal rapidly decreased from approximately 15° C (59° F) to slightly over 11.7° C (53° F) during the initial fifteen minutes following the shutdown.

Fish within the discharge canal began to exhibit signs of cold shock and some dead fish were observed later the same day. In order to document this event a fish sampling program was conducted by AmerGen Energy on the day of the plant shutdown and the days immediately following the shutdown. The results of that monitoring effort indicated that several species of fish were affected, and that a total of approximately 1407 individuals died due to cold shock. Although many of the fish which died as a result of the plant shutdown suffered lethal cold shock relatively rapidly, many others appeared to have survived for up to three days following the plant shutdown.

Over ninety-eight percent of the fish collected from the discharge canal and Oyster Creek were warm water migrant species including crevalle jacks, blue runners and lookdowns, which are typical of more southerly subtropical Atlantic waters. While several other species (including bluefish, bluespotted cornetfish, greater amberjack, southern stingray, Spanish mackerel and spotfin

butterflyfish) were also involved in the fish kill, each comprised less than one percent of the total number collected.

Introduction

This report documents the results of aquatic sampling conducted by AmerGen Energy Company, LLC (AmerGen) following a thermal shock fish kill which occurred on November 11, 2001, in the discharge canal of Oyster Creek Generating Station (OCGS), subsequent to an unplanned shutdown of the reactor and the plant's dilution pumps. The objectives of the sampling program were:

- 1) To determine the species composition, relative abundance and distribution of fishes in Oyster Creek which may have suffered thermal stress following the OCGS shutdown, and
- 2) To quantify the extent of any fish mortalities.

The monitoring effort took place from November 11 through November 14, 2001.

OCGS, which had operated continuously for the previous 177 days, was operating at 100% power with four circulating water and two dilution pumps in operation on November 11. Operators had determined during the early morning that the 1B2 electrical bus had failed unexpectedly,

Control Room operators manually shut the plant down at 1504 hrs on November 11. In order to reduce potential cold shock effects on fish in the discharge canal, the two operating thermal dilution pumps were stopped prior to the reactor shutdown so that the temperature of the discharge canal would decrease as slowly as possible.

AmerGen Energy Environmental Scientists were notified of the plant shutdown and initiated a sampling program in the discharge canal prior to the shutdown. Dead and dying fish were

collected from the discharge canal and the canal banks during the afternoon and evening of November 11, as well as during the following three days. Restart of the OCGS occurred on November 19, 2001 at 1059 hrs.

Fish Kill Monitoring Activities –

Fish were collected by AmerGen personnel from the discharge canal using dipnets. Dead fish were gathered from a small boat, as well as by personnel walking along the discharge canal streambanks between the OCGS discharge and the bayfront beaches near the mouth of Oyster Creek.

The results of the monitoring effort indicated that a total of 1407 fish representing nine different species died during this fish kill event (Table 1). Most of the stressed or dead fish were crevalle jacks and blue runners which were collected from shallow cove areas between the U. S. Route 9 bridge and the mouth of Oyster Creek, as well as the shallow nearshore areas north of the mouth of Oyster Creek. All fish captured were identified, enumerated, and length ranges were determined for each species.

Crevalle jacks Caranx hippos and blue runners Caranx crysos (n=1306) together accounted for 92.8% of the mortalities, lookdowns Selene vomer (n=78) for 5.5%, and bluefish Pomatomus saltatrix (n=11) for less than 1% (Table 1). Five additional species including bluespotted cornetfish Fistularia tabacaria (n=7), greater amberjack Seriola dumerili (n=2), southern stingray Dasyatis americana (n=1), Spanish mackerel Scomberomorus maculatus (n=1,) and spotfin butterflyfish Chaetodon ocellatus (n=1), each contributed only a fraction of one percent of the total mortalities.

The crevalle jacks and blue runners ranged in length from 128 to 214 mm (5.0 to 8.4 in) forklength (FL). The lookdowns collected during the fish kill ranged from 117 to 155 mm (4.6 to 6.1 in) FL, and the bluespotted cornetfish ranged in length from 310 to 340 mm (12.2 to 13.4 in) total length (TL). The greater amberjacks collected ranged in length from 470 to 495 mm (18.5 to 19.5 in) FL. The bluefish collected ranged in length from 328 to 384 mm (12.9 to 15.1 in) FL. Table 1 summarizes the numbers and size range for each species collected.

Discussion and Conclusions

The evidence indicates that the observed fish mortalities on November 11, 2001 and the days immediately thereafter were caused by cold shock. These fish, primarily warmwater carangid species such as crevalle jacks, blue runners and lookdowns, were residing in the heated condenser discharge of the OCGS at the time of the plant shutdown. They were probably attracted to the elevated temperatures in the discharge canal during summer or early fall, and remained there during the fall when they would otherwise have migrated out of Barnegat Bay. The death of these fish following a 3.3° C (6° F) drop in discharge water temperature in 15 minutes, down to a final water temperature of about 11.7° C (53° F), is consistent with what is known about their thermal tolerances, lower lethal temperature limits and past observations of cold-shock events.

The November 11, 2001 fish kill event resulted from the inability of cold-sensitive species, such as jacks, blue runners and lookdowns, to tolerate the relatively low water temperatures they encountered in the discharge canal subsequent to plant shutdown. Intake canal temperatures were about 11.7° C (53° F), at the time of the plant shutdown on November 11 (Figure 1). The discharge canal temperature at the time of the shutdown was approximately 15° C (59° F), resulting in a delta T of about 3.3° C (6° F). The very rapid decrease in discharge temperature (from about 15° C / 59° F to less than 12° C / 53.5° F in 15 minutes), which occurred following the manual shutdown of the plant (Figure 1), appears to have induced cold shock within a few hours. The discharge canal temperature decreased to about 10° C (50° F) about twelve hours after the plant shutdown, then remained between 9° and 10° C (48° to 50° F) during the following three days (Figure 2). Hoff (1971) reported that a massive low temperature mortality of crevalle jacks occurred under similar circumstances in estuarine waters on the Atlantic coast of Massachusetts when water temperatures suddenly fell to 7.4° to 9° C (45.4° to 48° F). Hoff concluded that it is likely that many such late southern migrant fish are involved in cold shock fish kills due to temperatures falling below their lower lethal temperatures in northern waters. At OCGS, either crevalle jacks or blue runners have been involved

in cold shock fish kills on seven previous occasions between 1974 and 1989. The intake water temperatures at the time of those events ranged from 1.1° to 13.9° C (34° to 57° F). Therefore, it appears that the lower lethal temperature for crevalle jacks and blue runners is within a few degrees of 10° C (50° F). The relatively wide range of temperatures which resulted in cold shock deaths to crevalle jacks and blue runners in the seven previous events is probably due to variations in their thermal acclimation (i.e., how gradually water temperatures approached their lower lethal limit) and how large a temperature drop it was which resulted in the cold shock and ultimately their death.

David Littlehale, Collection Manager for the New Jersey State Aquarium, reported collecting fish specimens including numerous lookdowns, crevalle jacks and bluespotted cornetfish on two separate occasions, two to three weeks prior to November 11, from the beach and shallow nearshore waters immediately north of Oyster Creek (D. Littlehale, personal communication). Thomas Baum of the NJDEP Division of Fish, Game & Wildlife reported that small jacks, including crevalle jacks and blue runners, were unusually abundant this year in shallow nearshore waters near the Nacote Creek Research Center in Port Republic, NJ during early November. Baum felt that the unusually mild weather during late September through early November was responsible for so many southern migrant species being prevalent in local estuaries this late in the year (T. Baum, personal communication).

Although lookdowns and greater amberjack are known to be among the southern migrant species which are sometimes found in the waters near the OCGS during the summer and fall, these species have not previously been involved in any OCGS fish kill. Because lookdowns, greater amberjacks, blue runners and crevalle jacks have a relatively close taxonomic relationship (i.e., all members of the Carangidae family) and have similar geographic distributions, it is likely that the lower lethal temperature for lookdowns and greater amberjacks is similar to that of blue runners and jacks. This seems to have been borne out by the fact that cold-stunned and dead lookdowns and greater amberjacks were found during the first 24 hours after plant shutdown, and they were collected from the same locations where the greatest numbers of dead crevalle jacks and blue runners were found.

A few days prior to the November 11 plant shutdown, several species of fish including bluefish, striped bass and southern stingray were observed congregating in the OCGS heated effluent at the Main Condenser discharge. During the first day following the shutdown, most of the bluefish continued to swim normally in the same location but some individuals began moving downstream and swimming more slowly. Most of the bluefish appeared to have moved out of the Main Condenser discharge area during November 13th, and a few cold-shocked bluefish were collected later that day. The remainder of the dead bluefish were collected on November 14th, between 48 and 72 hours subsequent to shutdown. These mortalities of bluefish during this fish kill are consistent with the available information regarding bluefish thermal tolerance, lower lethal temperature limits and past observations of cold-shock events. For example, during a December 10, 1982 OCGS fish kill in which bluefish, crevalle jack and blue runners were the prevalent species, cold-shock mortalities occurred when the fish were subjected to a final temperature of 8.9° C (48° F). Cold shock experiments have shown that juvenile bluefish exposed to an instantaneous 6.7° C (12° F) decrease in water temperature (from 15° C / 59° F to 8.3° C / 47° F) exhibited 50 % mortality (Hillman, 1979). Furthermore, cold-shock mortality to bluefish has occurred during several previous OCGS fall/winter fish kill events when ambient water temperatures ranged from 1.1° to 8.9° C / 34° to 48° F. Based on these results, and the fact that the bluefish observed following this plant shutdown were all adults (which are generally somewhat more cold tolerant than juveniles), it is likely that some bluefish that were in the discharge canal at the time of the OCGS shutdown survived.

Cold-shock experiments have also demonstrated that striped bass can tolerate exposure to water temperatures as low as 0° C (32° F) for at least a few days (Gift and Westman, 1971; Public Service Electric and Gas Company, 1978). Therefore, it is not surprising that the striped bass in the OCGS discharge canal at the time of the November 2001 plant shutdown appeared to be unaffected by the decrease in water temperature to 8.9° C (48° F) following the shutdown.

Although the lower lethal temperature of the southern stingray is unknown, it is a species which is found primarily in warmer southerly waters, and may be near its northern limit of geographic distribution in this area. Therefore, it is likely to have limited thermal tolerance to a

relatively rapid decrease in water temperature to a final temperature below 10° C (50° F), such as that which occurred following the November 11 shutdown.

The three other species collected during the November 2001 fish kill, including bluespotted cornetfish Fistularia tabacaria, Spanish mackerel Scomberomorus maculatus and spotfin butterflyfish Chaetodon ocellatus, are additional southern migrant species which have not been involved in previous OCGS fish kills. These species are believed to have limited thermal tolerance to cold-shock, and the deaths of the few individuals of these species collected following the November 2001 shutdown can be attributed to ambient water temperatures falling below their respective lower lethal limits.

References

Baum, T., 2001. Personal communication.

Gift, J. J. and J. R. Westman, 1971. Responses of some estuarine fish to increasing thermal gradients. Unpublished monograph. 154 pp.

Hoff, J.G., 1971. Mass mortality of the crevalle jack, Caranx hippos (Linnaeus) on the Atlantic Coast of Massachusetts. Chesapeake Science 12(1):49.

Jersey Central Power & Light Company, 1978. Oyster Creek and Forked River Nuclear Generating Stations 316 (a) and (b) Demonstration. Jersey Central Power & Light Company, Morristown, New Jersey.

Littlehale, D., 2001. Personal communication.

Public Service Electric & Gas Company, 1978. Annual Environmental Operating Report (Non-radiological). Salem Nuclear Generating Station. Unit 1. Vol. 3. Special surveillance and study activities. Public Service Electric & Gas Company, Newark, New Jersey.

Table 1.
 Number and size of dead and stressed fish collected from Oyster Creek and
 nearby Barnegat Bay following unplanned shutdown of the OCGS on
 November 11, 2001.

Species	Number (n)	Percentage Of Total (%)	Minimum Length (mm)	Maximum Length (mm)
<u>Caranx</u> spp. Crevalle jack/ Blue runner	1306	92.8	128	214
<u>Selene vomer</u> Lookdown	78	5.5	117	155
<u>Pomatomus saltatrix</u> Bluefish	11	0.8	328	384
<u>Fistularia tabacaria</u> Bluespotted cornetfish	7	0.5	310	340
<u>Seriola dumerili</u> Greater amberjack	2	0.1	470	495
<u>Chaetodon ocellatus</u> Spotfin butterflyfish	1	< 0.1	83	83
<u>Dasyatis americana</u> Southern stingray	1	< 0.1	310	310
<u>Scomberomorus maculatus</u> Spanish mackerel	1	< 0.1	324	324
TOTAL	1407	100.0	83 mm	495 mm

Figure 1
Oyster Creek Nuclear Generating Station
Air and Water Temperatures During Fish Kill Event - 11 Nov 2001
(Temperature in Degrees Fahrenheit)

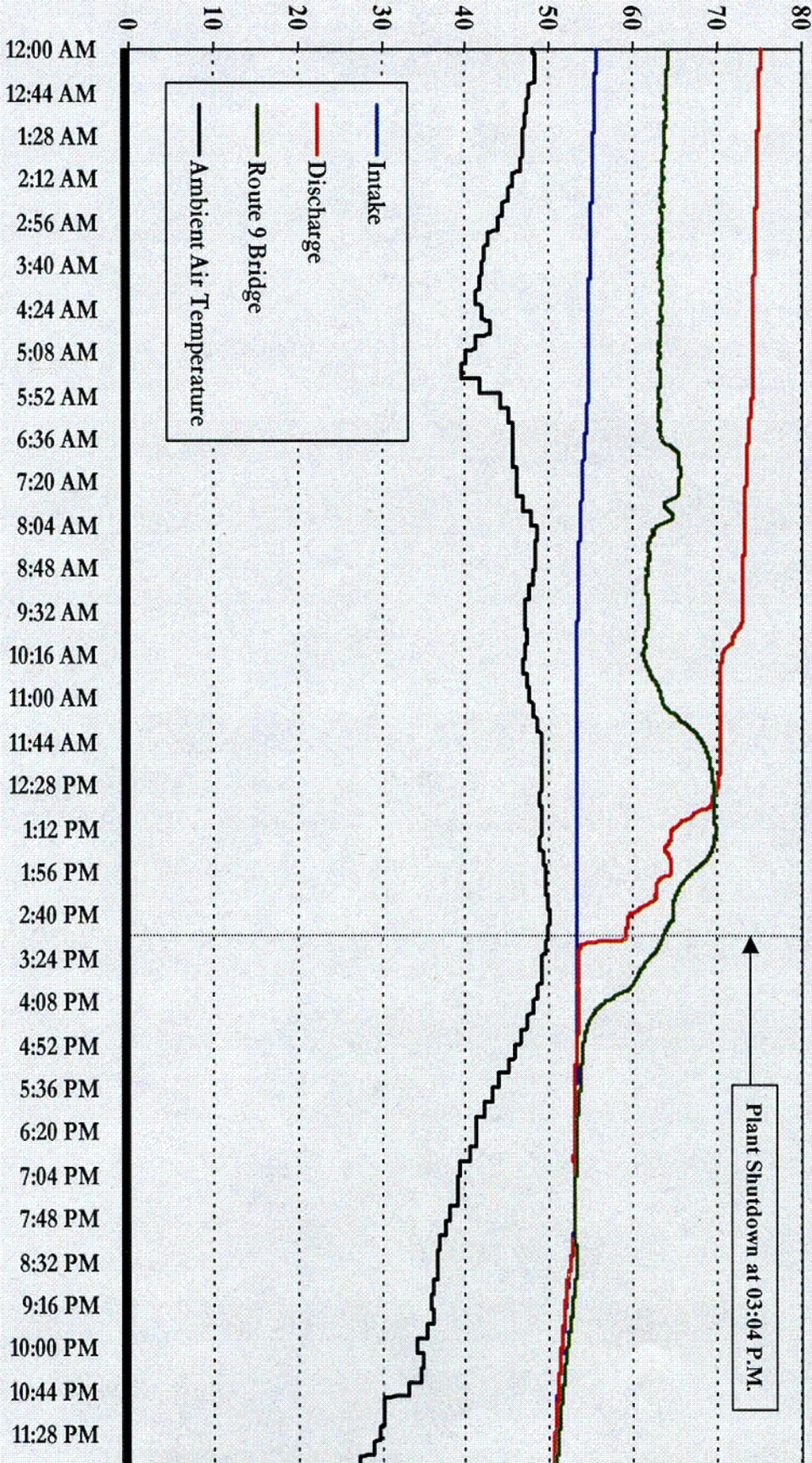
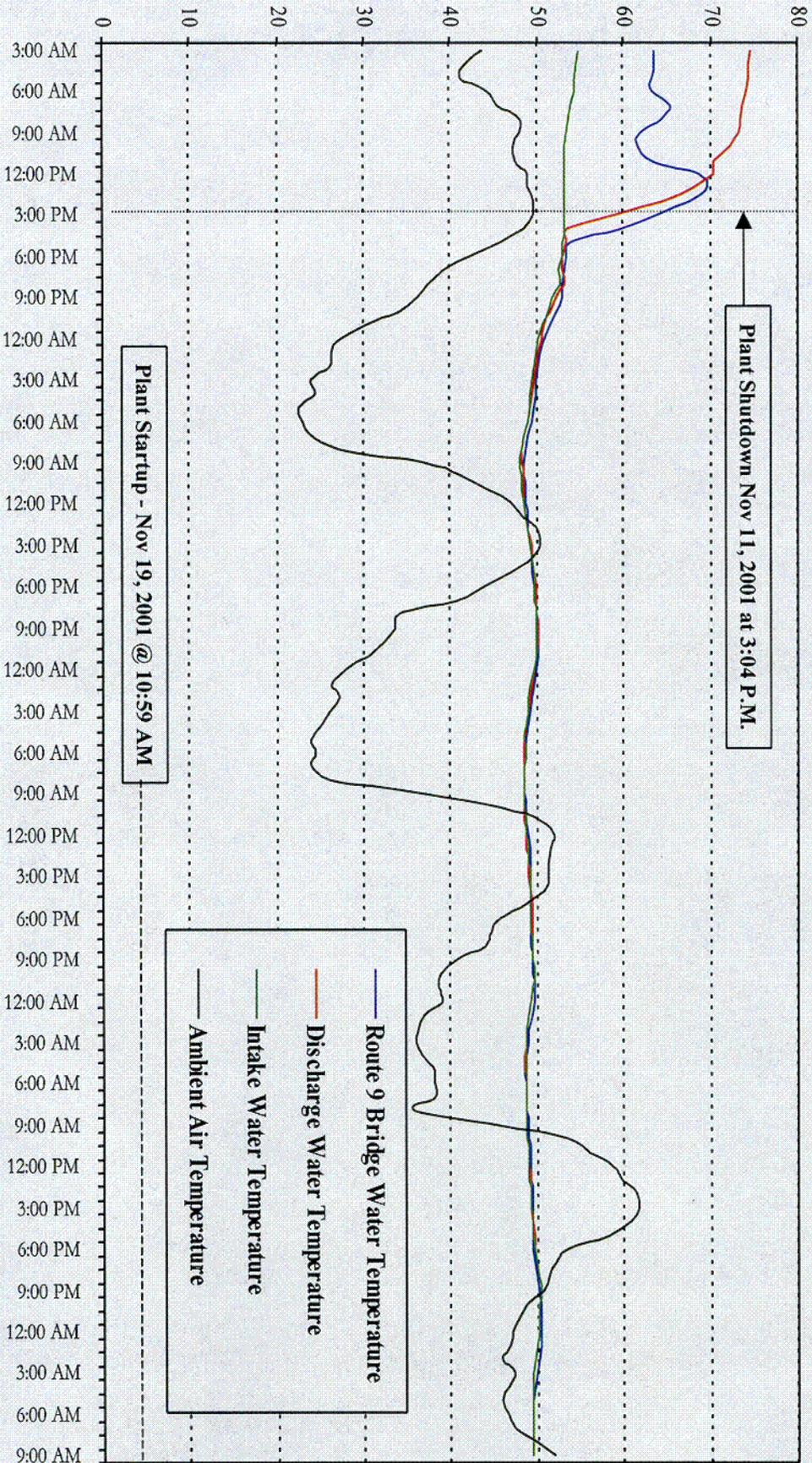


Figure 2
Oyster Creek Nuclear Generating Station
Air and Water Temperatures During Fish Kill Event
11Nov2001 Through 15Nov2001
(Temperature in Degrees Fahrenheit)



ATTACHMENT II

DOCKET 50-219

SEA TURTLE INCIDENTAL CAPTURE REPORT 2001-1

OYSTER CREEK GENERATING STATION

Sea Turtle Incidental Capture Report 2001-1

At approximately 1430 hours on Sunday July 8, 2001, an Oyster Creek Generating Station (OCGS) operator performing a routine inspection of the trash racks noticed a live sea turtle swimming freely in Bay # 4 of the circulating water intake structure. The turtle was carefully removed as quickly as possible and found to be alive, moving about normally and with no apparent injury. OCGS Environmental personnel who took custody of the turtle confirmed it to be a juvenile Atlantic green sea turtle (Chelonia mydas). The water temperature at the time of the incidental capture was approximately 80.1 F (26.7 C) and OCGS was in operation at full 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 in the vicinity of the intake structure prior to removal, the circulating water trash racks had been cleaned the previous afternoon.

The turtle measured 10.5 in (26.7 cm) carapace length straight line and weighed 5.1 lb (2.3 kg). Sex was not determined. No tags were present on the turtle when captured. The dorsal surface of the turtle was encrusted with several barnacles. USNRC and NMFS personnel were notified of the capture within 24 hours on July 9, 2001.

The turtle was taken on the date of capture to the Marine Mammal Stranding Center (MMSC) in Brigantine, NJ. At the MMSC, the turtle was examined, fed, and tagged. After determining that the turtle was found to be healthy and was capable of swimming and feeding normally, MMSC personnel released it into nearshore waters near Brigantine, NJ.

ATTACHMENT III

DOCKET 50-219

SEA TURTLE INCIDENTAL CAPTURE REPORT 2001-2

OYSTER CREEK GENERATING STATION

Sea Turtle Incidental Capture Report 2001-2

At approximately 1744 hours on Sunday July 22, 2001, an Oyster Creek Generating Station (OCGS) operator performing a routine inspection and cleaning of the trash racks noticed a dead sea turtle being removed from Bay # 5 of the dilution water intake structure by the trash rake. The turtle was found to have a deep slice wound between its head and carapace on the left side of its neck. OCGS Environmental personnel who took custody of the turtle confirmed it to be a juvenile Kemp's ridley sea turtle (Lepidochelys kempi). The water temperature at the time of the incidental capture was approximately 80.4 F (26.9 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 same day at 0330 hours.

The turtle measured 10.25 in (26.0 cm) carapace length straight line and weighed 6.3 lb (2.9 kg). Sex was not determined. No tags were present on the turtle when captured. USNRC and NMFS personnel were notified of the capture within 24 hours on July 22, 2001.

The turtle was temporarily kept frozen at the Oyster Creek Generating Station pending delivery to an expert qualified to perform a necropsy on it.

ATTACHMENT IV

DOCKET 50-219

SEA TURTLE INCIDENTAL CAPTURE REPORT 2001-3

OYSTER CREEK GENERATING STATION

Sea Turtle Incidental Capture Report 2001-3

At approximately 0344 hours on Tuesday August 14, 2001, an Oyster Creek Generating Station (OCGS) operator performing a routine inspection and cleaning of the trash racks noticed a dead sea turtle being removed from Bay # 6 of the dilution water intake structure by the trash rake. The turtle was found to have no obvious boat propeller wounds but a few superficial scrapes were apparent on several scutes near the dorsal centerline and posterior marginal tip. 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 82.0 F (27.8 C) and OCGS was in operation at 98% 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 0245 hours.

The turtle measured only 9.0 in (22.8 cm) carapace length straight line and weighed just 4.0 lb (1.8 kg). Sex was not determined. No tags were present on the turtle when captured. USNRC and NMFS personnel were notified of the capture within 24 hours on August 14, 2001. A completed Incident Report of Sea Turtle Take was provided 8/14/01 to NMFS and USNRC. At the request of NMFS, future written reports of OCGS sea turtle incidental captures will be provided on Incident Report of Sea Turtle Take forms from the OCGS Biological Opinion.

The turtle was transferred on the date of incidental capture to the Marine Mammal Stranding Center (MMSC) so that arrangements could be made to have a necropsy performed on it. AmerGen was subsequently informed that a necropsy could not be performed on the turtle because it had been frozen briefly prior to delivery to MMSC. As a result, AmerGen has changed its sea turtle handling protocol to refrigerate rather than freeze dead turtles to prevent tissue damage and ensure that specimens remain suitable to be necropsied.