

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

2130-01-20069
2120-012-2612

MAR 14 2001

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) - 2000

Enclosed are two copies of the 2000 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 Ms. Brenda DeMerchant, Licensing Engineer, at 609-971-4642.

Sincerely,



Ron J. DeGregorio
Vice President
Oyster Creek

RJD/BDeM/pk

Enclosure

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

IE25

2000

ANNUAL ENVIRONMENTAL OPERATING REPORT
OYSTER CREEK GENERATING STATION

LICENSE NO. DPR-16

DOCKET NO. 50-219

PREPARED BY:

AMERGEN ENERGY COMPANY

March 2001

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, 2000 through December 31, 2000.

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 January 21, 2000. The fish kill was caused by cold-shock as a result of the rapid decrease in water temperatures in the OCGS discharge canal following reactor shutdown. A report summarizing the results of the environmental monitoring undertaken to determine the extent of the fish kill, entitled "Fish Kill Monitoring Report for January 2000", 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 2000-1, 2000-2, 2000-3, 2000-4 and 2000-5" were previously submitted and are provided as Attachments II through VI, respectively. The circumstances surrounding the five incidental captures that occurred during 2000 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.

A juvenile loggerhead sea turtle was captured alive in front of the dilution water system trash racks during the early morning hours on June 23, 2000. 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 very active and with no visible wounds or signs of injury. The turtle was subsequently released into the ocean off Brigantine, NJ on June 26, 2000.

During the afternoon of July 2, 2000, 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 arranged for shipment of the turtle to Dr. Steven Morreale, a Cornell University sea turtle expert, for a necropsy to be performed on the turtle. AmerGen Energy has not received the results of the necropsy.

During the afternoon of August 3, 2000, a juvenile Atlantic green sea turtle was gently dipnetted from in front of the dilution water system intake structure. The turtle was found to be alive, moving about normally and with no apparent injury. However, the dorsal surface of the turtle was heavily encrusted with barnacles, and several marginal scutes had a dull grayish coloration, which may have been an indication of a fungal infection. The turtle was transferred to the MMSC, where it was given initial care. It was transferred in early September to the Karen Beasley Sea Turtle Rescue and Rehabilitation Center in Topsail Island, NC for final care before release. It was released October 12, 2000 in the Atlantic Ocean off Topsail Beach, NC.

A juvenile Kemp's ridley sea turtle was captured alive in front of the dilution water system trash racks during the early morning hours on August 28, 2000. The turtle was taken to the MMSC in Brigantine, NJ. MMSC personnel observed and fed the turtle and found it to be moving normally and with no visible wounds or signs of injury. The turtle was subsequently transferred to the Karen Beasley Sea Turtle Rescue and Rehabilitation Center in North Carolina for final care prior to release in early September.

A subadult loggerhead sea turtle was captured alive in front of the circulating water system trash racks during the early afternoon hours on September 18, 2000. The turtle was found to be alive, moving about normally and with no apparent injury. However, the majority of the dorsal surface of the turtle was heavily encrusted with barnacles. A few dorsal scutes had partially peeled, which may have occurred when some barnacles scraped off the turtle. The turtle was taken to the MMSC in Brigantine, NJ. At the MMSC, the turtle was examined, fed and tagged. The turtle was taken during late September to a more southerly location in Nags Head, NC (where cold stunning was less likely) and released into the Atlantic Ocean.

Regarding trends in the number of incidental sea turtle captures at the OCGS, slightly more incidental captures occurred during 2000 than in previous years; however this trend was not unique to Barnegat Bay, as increased numbers of sea turtles were observed all along the Atlantic Coast. 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 possible reasons why the number of sea turtle incidental captures which occurred during 2000 is slightly greater than the previous annual maximum. 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 Oyster Creek, 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.

A Florida Sea Turtle Stranding and Salvage Network researcher recently noted that the 3,136 sea turtle strandings which occurred during the past year along the Atlantic coast and in the Gulf of Mexico represented a 10 year high and an increase of 32% above the number of strandings seen in an average year (N.Y. Times 2001). The researcher is quoted as saying "We don't know (the cause of the strandings). It could be viral. It could be a pollutant. It could be something related to red tide." Although hundreds of the strandings between Massachusetts and Florida were attributed by the researcher to cold-stunning due to cold weather and resultant cold water temperatures, "those incidents alone did not account for the sharp rise in the number of turtles washing ashore last year."

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 increase in sea turtle incidental captures at the OCGS from a previous maximum of four per year, to five during 2000, 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. It is therefore considered more significant that four out of the five turtles incidentally captured this year were 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

Amendment 213 to the OCETS, dated August 8, 2000, was issued to address the fact that the OCGS license had been transferred to the new plant owner, AmerGen Energy Company. Amendment 213 also reflected changes in the administrative controls area such as changes to various job titles and responsibilities.

References

New York Times. 2001. Stranding of sea turtles a mystery to scientists. February 5, 2001.

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.

ATTACHMENT I

DOCKET 50-219

FISH KILL MONITORING REPORT FOR JANUARY 2000

FISH KILL MONITORING REPORT

FOR JANUARY 2000

GPU Nuclear, Inc.
Oyster Creek Nuclear Generating Station
Environmental Affairs Department

February 2000

Executive Summary

The Oyster Creek Nuclear Generating Station was operating at about 65% power on the morning of January 21, 2000 when plant operators were required to shut down the reactor at 1049 hrs. The shutdown was required when a multiple recirculating water pump trip occurred. Subsequently, it was determined that a faulty signal from instrumentation controlling the recirculating water pumps was the apparent cause of the pump trips.

In order to reduce potential cold-shock effects on fish in the discharge canal, the two operating thermal dilution pumps automatically stopped operating when the reactor was shut down so that the temperature of the discharge canal would decrease as slowly as possible. However, as a result of the plant shutdown, the water temperature in the discharge canal rapidly decreased from approximately 48° F to less than 32° F during the initial fifteen minutes following the shutdown.

Fish within the discharge canal soon exhibited signs of cold-shock or died subsequent to the shutdown. In order to document this event, a fish sampling program was conducted by GPU Nuclear on the day of the plant shutdown and the days immediately following the shutdown. The results of that monitoring effort indicated that the several species of fish were affected, and that a total of approximately 3547 individuals died, apparently 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 several days after the shutdown.

Approximately 84% of the fish collected from the discharge canal and Oyster Creek were striped bass and nearly 9% were white perch. Over three percent of the fish collected were black drum and one percent were bluefish. While several other species were also collected (including gizzard shad, striped mullet, American eel, mummichog, tautog, Atlantic herring, weakfish, spotted seatrout, winter flounder, red drum, smooth dogfish and cunner), each comprised one percent or less of the total number collected.

Introduction

This report documents the results of aquatic sampling conducted by GPU Nuclear, Inc. (GPUN) following a thermal shock fish kill which occurred on January 21, 2000 in the discharge canal of Oyster Creek Nuclear Generating Station (OCNGS) subsequent to an unplanned shutdown of the reactor. The objectives of the sampling program were:

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

The monitoring effort took place from January 21 through February 1, 2000.

OCNGS, which had operated continuously for the previous 434 days, was operating at approximately 65% power with three circulating water and two dilution pumps in operation on January 21. Operators had reduced power from 100% power to 65% power during the early morning, in order to prepare for the quarterly Main Steam Isolation Valve (MSIV) test which was scheduled to take place later that day. Later that morning, plant personnel were testing instrumentation which controls the recirculating water pumps in the reactor building when signals were erroneously sent to that instrumentation, which shut off all recirculating water pumps. As a result, Control Room operators were required to shut the plant down at 1049 hrs on January 21. The two operating dilution pumps automatically tripped as designed at the time of the plant shutdown.

GPUN Environmental Affairs personnel were notified of the plant shutdown and immediately initiated a sampling program in the discharge canal. Dead and dying fish were collected from the discharge canal and the canal banks during the morning and afternoon of January 21, as well as during the following several days prior to and immediately following restart of the OCNGS on February 1.

Fish Kill Monitoring Activities –

Fish were collected by Environmental Affairs Department staff from the discharge canal using dipnets. Dead fish were gathered from a small boat and by personnel walking along the discharge canal streambanks, between the OCNGS discharge and the mouth of Oyster Creek. Surveys of the beaches along the western shore of Barnegat Bay, north and south of Oyster Creek were also conducted. All fish were identified and enumerated; length ranges were obtained.

The results of the monitoring effort indicated that a total of 3547 fish representing sixteen different species died during this fish kill event (Table 1). Most of the stressed or dead fish were collected between the Main Condenser Discharge (NJPDES Discharge Serial Number DSN 001) and the U. S. Route 9 bridge. All fish captured were identified, enumerated, and length ranges were determined for each species.

Striped bass Morone saxatilis (n=2981) accounted for over four-fifths of the mortalities, white perch Morone americana (n=305) for nearly 9%, black drum Pogonias cromis (n=117) for 3.3%, and bluefish Pomatomus saltatrix (n=34) for about 1% (Table 1). Twelve additional species including striped mullet Mugil cephalus (n=9), gizzard shad Dorosoma cepedianum (n=8), American eel Anguilla rostrata (n=7), mummichog Fundulus heteroclitus (n=5), tautog Tautoga onitis (n=3), Atlantic herring Clupea harengus (n=2), weakfish Cynoscion regalis (n=2), spotted seatrout Cynoscion nebulosus (n=2), winter flounder Pleuronectes americanus (n=2), smooth dogfish Mustelus canis (n=1), red drum Sciaenops ocellatus (n=1) and cunner Tautoglabrus adspersus (n=1) each contributed only a fraction of one percent to the total mortalities.

The striped bass ranged in length from 338 to 860 mm (13.3 to 33.9 in) forklength (FL). The white perch collected during the fish kill ranged from 285 to 299 mm (11.2 to 11.8 in) FL, the black drum collected ranged in length from 185 to 525 mm (7.3 to 20.7 in) total length (TL). The bluefish collected ranged in length from 360 to 648 mm (14.2 to 25.5 in) FL. Table 1 summarizes the numbers collected as well as the size range for each species collected.

Discussion and Conclusions

The evidence indicates that the observed fish mortalities on January 21, 2000 and the days immediately thereafter were caused by cold-shock. These fish, primarily striped bass, white perch, black drum and bluefish, were residing in the heated condenser discharge of the OCNGS and may have been attracted to the elevated temperatures in the discharge canal during fall or earlier and remained there during the winter. The death of these fish, following a 16 °F drop in discharge water temperature in 15 minutes, down to a final water temperature of about 30.2 °F, is consistent with what is known about their thermal tolerances, lower lethal temperature limits and past observations of cold-shock events.

The January 21, 2000 fish kill event was probably due in part to the subfreezing cold and windy weather which occurred prior to and immediately following the plant shutdown. Intake canal temperatures were extremely cold, about -1.0° C (30.2° F), on the morning of January 21 due to the very cold weather conditions prior to the plant shutdown (Figure 1). The discharge canal temperature at the time of the shutdown was approximately 8.9° C (48° F), resulting in a delta T of about 9.9° C (17.8° F). The very rapid decrease in discharge temperature (from about 48° F to less than 32° F in 15 minutes) which occurred following the plant shutdown (Figure 1) appeared to have resulted in nearly immediate cold-shock to many of the fish killed during the event, although some of the fish collected appeared to initially be stunned for a period of time prior to eventually dying.

During a December 18, 1995 fish kill which occurred under similar circumstances at the OCNGS, the 20 °F drop in discharge water temperature from about 56 °F to 36 °F which occurred following an unplanned shutdown, resulted in the relatively rapid cold-shock deaths of several individuals of five fish species with modest thermal tolerance for cold-shock (including bluefish, black drum, weakfish, spotted seatrout and smooth dogfish). All five of these species were also involved in the January 21, 2000 fish kill event. During the December 1995 fish kill, four additional species with greater thermal tolerance to cold-shock (including striped bass, white perch, American eel and gizzard shad) also died several days later when extremely cold weather conditions dropped the discharge canal temperatures to about 30 °F (-1.2 °C). Likewise, all four of these species were involved in the January 2000 fish kill.

The other species collected during the January 2000 event (mummichog, striped mullet, tautog, Atlantic herring and cunner) are believed to have limited thermal tolerance to cold-shock and would not be expected to survive the rapid decrease in discharge temperatures to 30 °F followed by prolonged exposure to subfreezing water temperatures.

The observed mortalities of the species involved in the January 2000 fish kill are consistent with the available information on their thermal tolerances and lower lethal limits. For example, cold-shock experiments conducted by Ichthyological Associates, Inc. (Jersey Central Power & Light Company, 1978) demonstrated that striped bass are able to tolerate extreme temperature reductions of 9 to 28 °F, down to final temperatures as low as 35 °F. Cold-shock experiments have also demonstrated that striped bass can tolerate exposure to water temperatures as low as 32 °F for at least a few days but death occurs in a few hours at temperatures of 30.2 °F or lower (Gift and Westman, 1971; Public Service Electric and Gas Company, 1978).

The lower lethal limit for the white perch has not been determined. However, given their close taxonomic relationship to the striped bass and the similarity of their responses in cold-shock experiments, it is likely that the white perch mortality was also caused by ambient water temperatures falling below their lower lethal limit. For example, Texas Instruments (1976) demonstrated that adult white perch were able to survive a 23 °F drop from about 59 °F to 36 °F (as they did following the December 18, 1995 OCNGS shutdown) but are unable to survive a drop to a final temperature as low as 30 °F.

Other species involved in the January 2000 fish kill are known to prefer higher water temperatures than striped bass and white perch, and are even less likely to be able to tolerate the exposure to discharge canal water temperatures of 30 °F which occurred for several days following the plant shutdown (Figure 2). The relatively high salinity of the water in the OCNGS intake and discharge canals allows the water temperature to fall below the freezing point during periods of extremely cold weather. Air temperatures dropped into the low teens on January 21, 2000, depressing ambient water temperatures to extremely low levels of about 30 °F prior to the plant shutdown and for several days thereafter (Figure 2).

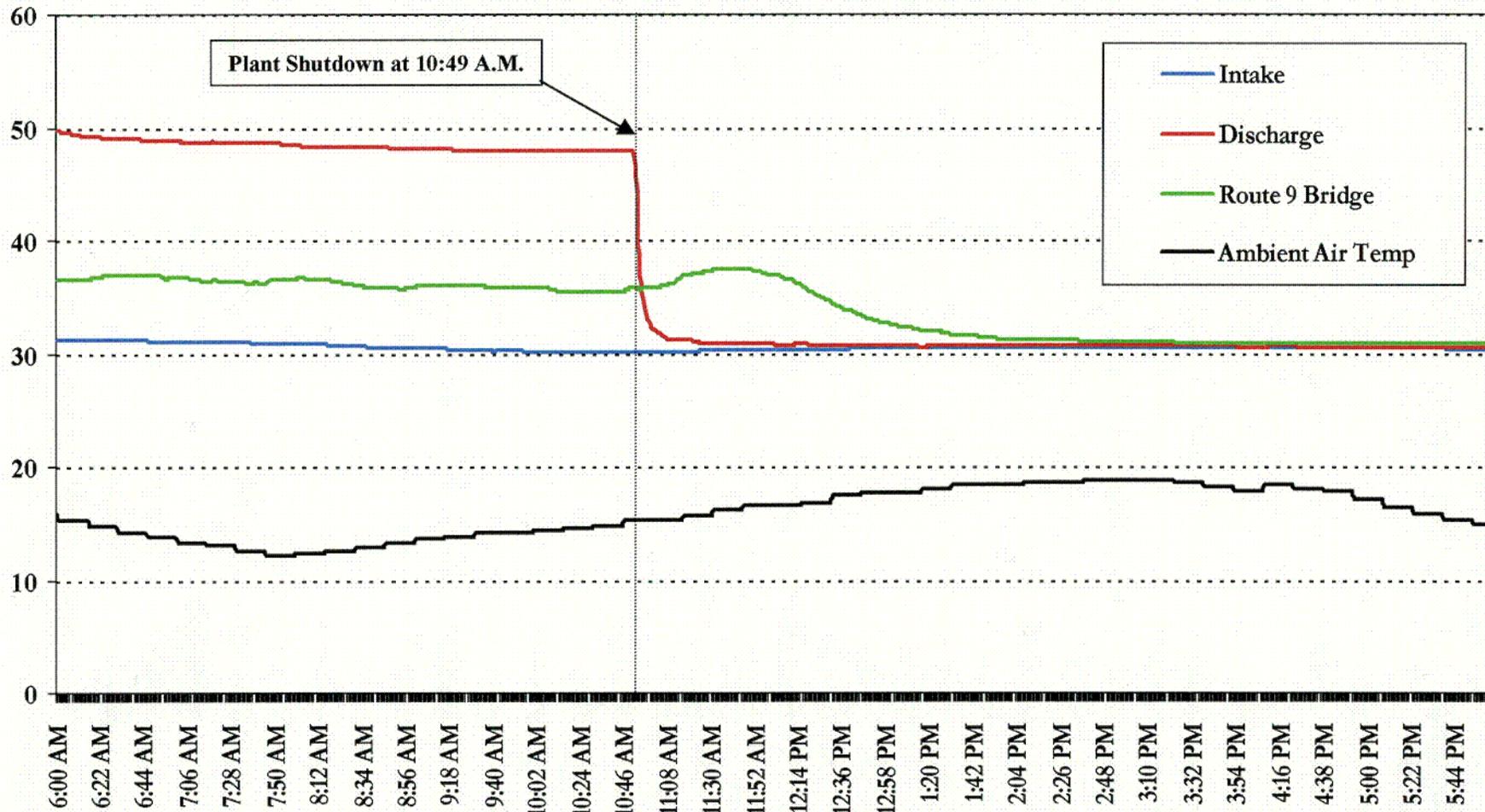
Cold-shock experiments have shown that juvenile bluefish exposed to an instantaneous 12 °F decrease in water temperature (from 59 °F to 47 °F) exhibited 50 % mortality (Hillman, 1979).

Furthermore, cold-shock mortality to bluefish has occurred during several previous OCNGS winter fish kill events when ambient water temperatures ranged from 34 ° to 48 ° F (1.1 ° to 8.9 ° C).

References

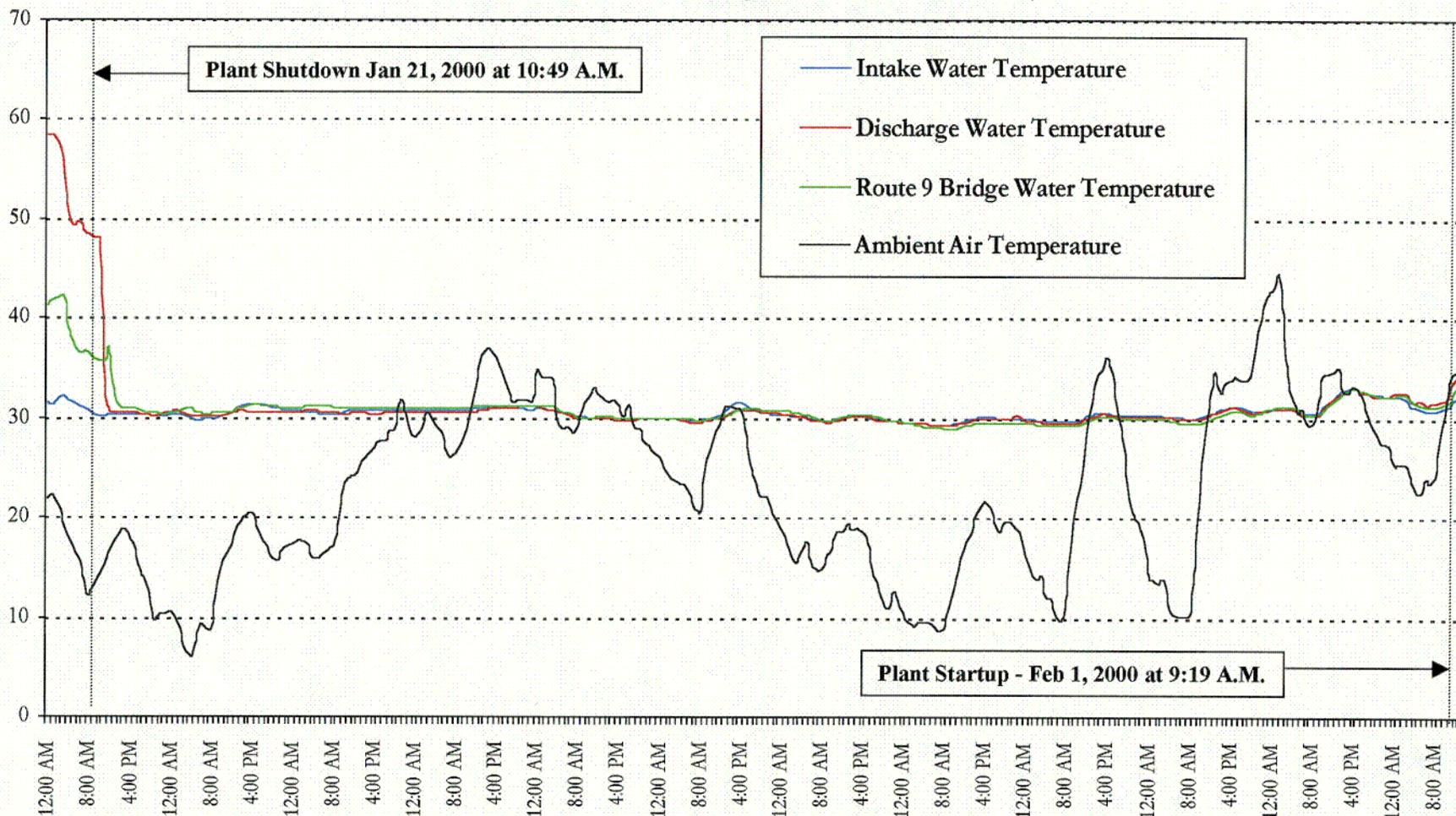
- Gift, J. J. and J. R. Westman, 1971. Responses of some estuarine fish to increasing thermal gradients. Unpublished monograph. 154 pp.
- Hillman, R. J., 1979. Effect of sudden temperature changes on fishes and macroinvertebrates. Pages 31-53 in D. J. Danila, C. B. Milstein and Associates. Ecological studies for the Oyster Creek Generating Station. Progress report for the period September 1977 - August 1978. Finfish, Shellfish, and Plankton. Ichthyological Associates, Inc., Ithaca, New York.
- 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.
- 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.
- Texas Instruments, Inc., 1976. Hudson River ecological study in the area of Indian Point, thermal effects report. Prepared for Consolidated Edison Company of New York, Inc.

Figure 1
Oyster Creek Nuclear Generating Station
Air and Water Temperatures During Fish Kill Event - 21Jan2000
(Temperature in Degrees Fahrenheit)



COI

Figure 2
Oyster Creek Nuclear Generating Station
Air and Water Temperatures During Fish Kill Event
21Jan2000 Through 01Feb2000
(Temperature in Degrees Fahrenheit)



CO2

Table 1.
 Number and size of dead and stressed fish collected from Oyster Creek and nearby
 Barnegat Bay following unplanned shutdown of the OCNCS on, January 21, 2000.

Species	Number (n)	Percentage of Total (%)	Minimum Length (mm)	Maximum Length (mm)
<u>Morone saxatilis</u> striped bass	2981	84.0	338	860
<u>Morone americana</u> white perch	305	8.6	285	299
<u>Pogonias cromis</u> black drum	117	3.3	185	525
<u>Pomatomus saltatrix</u> bluefish	34	1.0	360	648
<u>Mugil cephalus</u> striped mullet	9	0.3	285	524
<u>Dorosoma cepedianum</u> gizzard shad	8	0.2	280	305
<u>Anquilla rostrata</u> American eel	7	0.2	510	660
<u>Fundulus heteroclitus</u> mummichog	5	0.2	35	52
<u>Tautoga onitis</u> tautog	4	0.1	225	342
<u>Clupea harengus</u> Atlantic herring	2	0.1	252	258
<u>Cynoscion nebulosus</u> spotted seatrout	2	0.1	433	502
<u>Cynoscion regalis</u> weakfish	2	0.1	560	608
<u>Pleuronectes americanus</u> winter Flounder	2	0.1	232	295
<u>Mustelus canis</u> smooth dogfish	1	< 0.1	580	580
<u>Scaenops ocellatus</u> red drum	1	<0.1	446	446
<u>Tautoglabrus adspersus</u> cunner	1	< 0.1	60	60
Unidentified	66	1.9	Not determined	Not determined
TOTAL	3547	100.0	35 mm	860 mm

ATTACHMENT II

DOCKET 50-219

SEA TURTLE INCIDENTAL CAPTURE REPORT 2000-1

Oyster Creek Nuclear Generating Station

Sea Turtle Incidental Capture Report 2000-1

At approximately 0100 hours on June 23, 2000, an Oyster Creek Nuclear Generating Station operator removed a live sea turtle from in front of the trash bars in Bay #1 of the dilution water intake structure. The turtle was carefully removed from the trash bars with a sea turtle dipnet, and found to be very active and with no visible wounds or signs of injury. OCNCS Environmental Affairs personnel who took custody of the turtle confirmed it to be a juvenile loggerhead (*Caretta caretta*). The water temperature at the time of the incidental capture was approximately 77.5 F (25.3 C) and OCNCS was in operation at full power with four circulating water pumps and two dilution pumps operating. Although it is impossible to say precisely how long the turtle had been near the intake structure prior to removal, the intake trash racks had been mechanically cleaned the previous day.

The turtle measured 18.8 in (47.8 cm) straight line carapace length, 17 in (43.2 cm) carapace width and weighed approximately 42 lb (19 kg). Sex was not determined. No tags were present on the turtle when captured.

After the turtle was examined by Environmental Affairs personnel, arrangements were made for it to be transferred to the Marine Mammal Stranding Center (MMSC) in Brigantine, NJ. MMSC personnel examined, cared for and eventually released the turtle to safety in the Atlantic Ocean offshore of Brigantine, NJ.

USNRC and NMFS personnel were notified of the incidental capture within 24 hours on June 23, 2000.

ATTACHMENT III

DOCKET 50-219

SEA TURTLE INCIDENTAL CAPTURE REPORT 2000-2

OYSTER CREEK NUCLEAR GENERATING STATION

Sea Turtle Incidental Capture Report 2000-2

At approximately 1500 hours on Sunday, July 2, 2000, an Oyster Creek Nuclear Generating Station (OCNGS) operator performing a routine inspection of the dilution trash racks noticed a sea turtle floating into the trash bars in Bay # 1 of the dilution intake structure. The turtle was carefully removed as quickly as possible and found to be limp, immobile and with no apparent breathing. OCNGS Environmental Affairs personnel who took custody of the turtle confirmed it to be a juvenile Kemp's ridley (*Lepidochelys kemp*). Repeated attempts to resuscitate the turtle were unsuccessful. The water temperature at the time of the incidental capture was approximately 78.1 F (25.6 C) and OCNGS 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 on the intake structure prior to removal, the dilution trash racks had been mechanically cleaned less the previous evening (i.e., July 1 at 2130 hours).

The turtle measured 10.75 in (27.3 cm) carapace length straight line and weighed 7.1 lb (3.2 kg). Sex was not determined. No tags were present on the turtle when captured. The only external damage exhibited was two dorsal scutes that appeared to have superficial scrape marks. The damage to the dorsal scutes may have occurred during removal of the turtle from the dilution intake area or it may have occurred prior to capture. USNRC and NMFS personnel were notified of the capture within 24 hours on July 3, 2000.

After the turtle was examined by Environmental Affairs personnel, it was placed in a freezer for temporary storage at our on-site biological laboratory. Dr. Steve Morreale of Cornell University, a sea turtle expert who has previously conducted many necropsies of sea turtles, has been requested to perform a necropsy on the turtle. Arrangements are being made to transfer the turtle to Dr. Morreale in the near future.

ATTACHMENT IV

DOCKET 50-219

SEA TURTLE INCIDENTAL CAPTURE REPORT 2000-3

OYSTER CREEK GENERATING STATION

Sea Turtle Incidental Capture Report 2000-3

At approximately 1525 hours on Thursday August 3, 2000, an Oyster Creek Generating Station (OCGS) operator performing a routine inspection of the dilution trash racks noticed a live sea turtle in Bay # 4 of the dilution 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 Affairs 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 83.9 F (28.8 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 on the intake structure prior to removal, the dilution trash racks had been mechanically cleaned earlier the same day.

The turtle measured 11.5 in (29.2 cm) carapace length straight line and weighed 7.6 lb (3.4 kg). Sex was not determined. No tags were present on the turtle when captured. The majority of the dorsal surface of the turtle was heavily encrusted with barnacles. Several marginal scutes on the posterior dorsal surface had a dull grayish coloration, which may be an indication of a fungal infection. USNRC and NMFS personnel were notified of the capture within 24 hours on August 4, 2000.

The turtle was transferred to the Marine Mammal Stranding Center in Brigantine, NJ on August 3, 2000, where it was examined and given initial care. It was transferred on September 7, 2000 to the Karen Beasley Sea Turtle Rescue and Rehabilitation Center in Topsail Island, NC for final care before release. It was released October 12, 2000 in the Atlantic Ocean off Topsail Beach, NC.

ATTACHMENT V

DOCKET 50-219

SEA TURTLE INCIDENTAL CAPTURE REPORT 2000-4

ATTACHMENT VI

DOCKET 50-219

SEA TURTLE INCIDENTAL CAPTURE REPORT 2000-5

OYSTER CREEK GENERATING STATION

Sea Turtle Incidental Capture Report 2000-4

At approximately 0112 hours on Monday August 28, 2000, an Oyster Creek Generating Station (OCGS) operator performing a routine inspection of the dilution trash racks noticed a live sea turtle in Bay # 1 of the dilution 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 Kemp's ridley sea turtle (Lepidochelys kempii). The water temperature at the time of the incidental capture was approximately 79.8 F (26.5 C) and OCGS was in operation at 72% power with four circulating water pumps and two dilution pumps in operation. The turtle measured 10.3 in (26.2 cm) carapace length straight line and weighed 6.5 lb (2.9 kg). Sex was not determined. No tags were present on the turtle when captured. Although it is impossible to say precisely how long the turtle had been on the intake structure prior to removal, the dilution trash racks had been mechanically cleaned the previous day and inspected earlier the same night that the turtle was captured.

The turtle was taken to the Marine Mammal Stranding Center (MMSC) in Brigantine, NJ. At the MMSC, the turtle was examined, fed, tagged and given initial care. The turtle was transferred on September 7, 2000 to the Karen Beasley Sea Turtle Rescue and Rehabilitation Center in Topsail Island, NC, where it is receiving final care prior to being released to safety in offshore Atlantic Ocean waters. USNRC and NMFS personnel were notified of the capture within 24 hours on August 28, 2000.

OYSTER CREEK GENERATING STATION

Sea Turtle Incidental Capture Report 2000-5

At approximately 1310 hours on Monday September 18, 2000, an Oyster Creek Generating Station (OCGS) operator performing a routine inspection of the trash racks noticed a live sea turtle 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 subadult loggerhead sea turtle (Caretta caretta). The water temperature at the time of the incidental capture was approximately 68.8 F (20.4 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 on the intake structure prior to removal, the circulating water trash racks had been cleaned the previous afternoon.

The turtle measured 22.5 in (57.2 cm) carapace length straight line and weighed 58.5 lb (26.5 kg). Sex was not determined. No tags were present on the turtle when captured. The majority of the dorsal surface of the turtle was heavily encrusted with barnacles. A few of the scutes on the posterior dorsal surface had partially peeled, which may have occurred when some barnacles scraped off of the turtle. USNRC and NMFS personnel were notified of the capture within 24 hours on September 18, 2000.

The turtle was taken to the Marine Mammal Stranding Center (MMSC) in Brigantine, NJ. At the MMSC, the turtle was examined, fed, and tagged. The turtle was taken during late September to a more southerly location in Nags Head, NC (where cold-stunning was less likely) and released into the Atlantic Ocean.