

631 Park Avenue
King of Prussia, Pennsylvania 19406

MAR 4 1974

MEMO TO FILES (DN 50-219) OYSTER CREEK
THRU D. L. CAPTON, SENIOR REACTOR INSPECTOR

The attached report from John W. Reintjes, Fishery Biologist, was incorporated as Attachment 1 to Inspection Report 50-219/74-01. Names were deleted and typographical errors corrected.

E. G. Greenman
Reactor Inspector

B1609

OFFICE ▶					
SURNAME ▶	<i>EG Greenman</i>	<i>DL Capton</i>			
DATE ▶	<i>3/4/74</i>	<i>3/4/74</i>			

FROM: John W. Reintjes, Fishery Biologist
Atlantic Estuarine Fisheries Center

Trip Report: Oyster Creek Nuclear Electric Generating Station,
January 11-15, 1974.

January 12 -

9:00 A.M. Noticed about 10 large menhaden dead or flopping

Along the south bank of Oyster Creek near Highway 9 bridge. Two fishermen emptied a bag with 10 bluefish, 9-14 inches fork length, and 5 menhaden, 8-11 in. f.l. They said the fish started to show distress about 5 A.M. and they had gotten all the bluefish but not all the menhaden. They estimated that there were 10 times as many menhaden as blues.

9:30 A.M. Went out in boat operated by Fred May, Resource Management Inc., with Stohr, Greenman and Stoudnour. Cruised down Oyster Creek to the entrance to Barnegat Bay. Saw a few menhaden along the bank and saw several fishermen pick up a couple of fish near the entrance. They said they had a couple bluefish but saw mostly menhaden. Roy Younger, RMI, was in another boat looking for fish along the bank. He reported the following:

Buoy # 6 (at entrance) 43°F top and 36° bottom.

Said he saw very few fish, all menhaden, along the bank.

11:00 A.M. Roy Younger reported 45° F. about 1 1/2 ft. below surface by the Sand Point Marina recording thermograph.

11:30 A.M. Most of those that met later in the conference room went to the discharge structure. Several hundred large menhaden were schooled and swimming in the dilution pump discharge bays. One or two circulating pumps were on in the plant discharge bays with a noticeable flow entering the canal. It was supposed that the

menhaden were clumped in the dilution bays because the water was stagnant and warmer.

Bay with menhaden 38°
Near barrier log outside bay 37°
In flowing water from plant discharge 36°

Some of the menhaden were in distress and occasionally one would turn on its side and settle out of sight toward the bottom.

12:00 noon Went to the power plant conference room and discussed mutual plans.

In attendance were:

E.J. Grouney	Technical Engineer	JCP&L
Robert L. Stovdnour	Staff Engineer	JCP&L
Douglas R. Weigle	Engineering Assistant	JCP&L
Russel J. Douglas	Life Scientist	G.P.U. Serv. Corp.
Roy R. Younger	Biologist	Res. Mgt. Inc.
Frederick May	Technician	RMI
J. Philip Stohr	Environmental Scientist	AEC Region 1
Edward G. Greenman	Reactor Inspector	AEC Region 1
Karl Abraham	Public Information Officer	AEC Region 1
Paul E. Hamer	Principal Fisheries Biologist N.J. Div. Fish, Game and Shellfisheries	
John W. Reintjes	Fishery Biologist	NMFS

The principal development was that the biologists and technicians from the N.J. Nacote Creek Station would survey the area for an estimate of the number and kinds of fish killed on Monday.

2:30 - 3:30 P.M. Looked around Oyster Creek and inspected Lagoons 1-4. No signs of dead or living fish. Gulls were relatively inactive. Occasionally a small group would become active over the creek that indicated surfacing dead or dying fish.

January 13 -

9:00 A.M. Drive along the south shore of Oyster Creek. Ice formed along the shore and the small cove and 4 lagoons were frozen over except for the immediate vicinity of a freshwater drainage culvert in the blind end of Lagoon 3. The cove beach was strewn with dead fish. Roy Younger and I estimated several thousand. We saw 3 small bluefish, the other were all menhaden ranging in size from 4 to 14 inches. We measure 100 at random. The fork length frequency distribution is attached. There were several dozen menhaden in the ice of the 4 lagoons.

11:00 A.M. Air temperature 23° F; water 6 inches below surface in ice free area near Sand Point Marina 34° and 39° on the bottom. Return to the cove and most of the menhaden had been picked up for bait. Several hundred of the smaller ones and some frozen in the ice along the east shore remained.

2:00 - 5:00 P.M. Spent much of the afternoon in the Oyster Creek area. Relatively little gull activity and no additional signs of dead or dying fish.

January 14 -

9:00 A.M. Proceeded along the south shore of Oyster Creek. Lagoon 1 and 2 frozen over, Lagoon 3 frozen except in blind end near culvert.

Lagoon 4 was ice free in the blind end with dead menhaden floating and some distressed menhaden swimming erratically in the open water.

9:30 A.M. Walked along Barnegat Bay and along the south shore of the Creek. Saw 6 or 8 dead menhaden in the shallow water along the bay-shore, and several along the bank of the Creek near the entrance.

10:15 A.M. Returned to Lagoon 4 and two men with a pickup truck were dipping and bagging the dead menhaden. They said they had 8 bags of about a bushel each and there were about 2 or 3 more in the water.

11:25 A.M. In boat near mouth of Oyster Creek near Buoy # 6;

32° F. 6 inches from top and 32 1/2° on the bottom.

11:45 A.M. Went back to Highway 9 bridge and met N.J. biologist

John McLain and two assistants. 33° top and 32 1/2° on the bottom.

Roy Younger and I proceeded in RMI boat to Barnegat Bay. McLain and crew launched 18-foot Boston Whaler with 20-ft. trawl aboard in Barnegat Bay and proceeded into Oyster Creek. We accompanied them in RMI boat and observed four 5 to 10 minute trawls in the vicinity of Briarwood and Sand Point Marinas. They had quite a bit of trouble with snags. They caught little or nothing that we could see by watching them haul in the trawl.

They trawled several more times to the east off the Lagoon entrances and in Lagoon 1 and 3. These were not observed but they reported that they got little or nothing except in Lagoon 3 where they got about a bushel of menhaden, a couple striped bass and several spot. The fish were alive but sluggish. The striped bass were in poor condition with fin rot, opalescent eyes and abraded skin.

They trawled the length of Lagoon 4, setting their trawl about 100 feet outward of the blind end. They caught about a bushel of menhaden and I noticed one striped bass and several spot. All appeared alive but sluggish. In all, approximately 10 trawling station were made. Except for the catches in Lagoon 3 and 4, few or no dead fish were taken.

Two other groups from N.J. Nacote Creek Station were collecting during the period from noon to 5 P.M. Monday. Two biologists in a boat were taking temperature, salinity, and water samples. Two technicians were walking along the shoreline counting and identifying dead fish. Dave Thomas and another biologist from Ichthyological Associates, Absecon, N.J. arrived and did some seining in several slips along the Marinas.

4:30 P.M. N.J. biologists went up the discharge canal with boat and haul net. They said it was a new device and were trying it out. The net had a square fixed opening and was set in the middle of the canal from the boat and pulled ashore. During two tows observed, nothing was caught.

January 15 -

7:30 A.M. Checked beach cove and 4 lagoons. Ice covered cove and Lagoon 2. Lagoon 1 was open in the center from yesterday's trawling. Lagoon 3 was open with no dead fish, no surface signs nor any gulls. Lagoon 4 had about a hundred gulls working over the surface which was occasionally broken by distressed menhaden. From the signs there appeared to be at least several hundred menhaden in the lagoon. A few dead menhaden were floating in the blind end, apparently remaining from yesterday's kill.

Conclusions

The fish kill commenced about 7:00 A.M. on January 12 when the Highway 9 bridge temperature dropped below 40° F. A few hundred menhaden and 25 to 30 bluefish were picked up or seen along the banks of the discharge canal and Creek by 10:00 A.M. Some distressed and dying fish were seen during the remainder of the day.

At 9:00 A.M. on January 13, menhaden and occasional bluefish were dead along the south shore of Oyster Creek. The only sizeable concentration was in the cove just west of Lagoon 1. An estimation of several thousand dead menhaden and 3 bluefish were made. The size range and frequency distribution would suggest that the population in the area was made up of all age groups. Because menhaden school by size, the wide range of sizes suggest that no large, uniform population of menhaden were overwintering in the area.

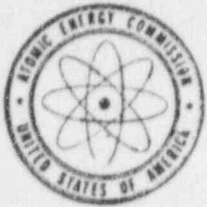
On January 14, the only other concentration of dead menhaden was found in the blind end of Lagoon 4. Approximately 10 bushels were picked up leaving only a few dead along the shore or visible on the bottom. From these observations I would conclude that the apparent kill through Monday night amounted to approximately 10,000 fish. Of these 99 percent were Atlantic menhaden. From the thermograph records and limited temperatures made in the area, the lethal minimum of apparently 37° F. for menhaden, bluefish and spot was reached in some parts of Oyster Creek by Saturday morning, January 12 and continued until Tuesday morning, January 15, when I terminated my observations.

FROM: John W. Reintjes, Fishery Biologist
Atlantic Estuarine Fisheries Center
Beaufort, NC 28516

Fork length frequency in millimeters of Atlantic menhaden
 dead in cove bench, Oyster Creek, N.J., January 13, 1973.

<u>Fork Length</u> <u>in mm</u>	<u>No. of</u> <u>Menhaden</u>
145-149	1
150-154	
155-159	
160-164	
165-169	1
170-174	3
175-179	3
180-184	5
185-189	
190-194	8
195-199	4
200-204	11
205-209	
210-214	3
215-219	7
220-224	5
225-229	7
230-234	
235-239	2
240-244	3
245-249	1
250-254	3
255-259	
260-264	3
265-269	5
270-274	6
275-279	5
280-284	
285-289	3
290-294	2
295-299	1
300-304	
305-309	3
310-314	2
315-319	
320-324	
325-329	
330-334	1
335-339	2
	100

John W. Reintjes
 IMFS
 Beaufort, N.C.



UNITED STATES
 ATOMIC ENERGY COMMISSION
 DIRECTORATE OF REGULATORY OPERATIONS
 REGION 1
 970 BROAD STREET
 NEWARK, NEW JERSEY - 07102
 631 Park Avenue
 King of Prussia, Pennsylvania 19406

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*J. Brown Please insert attached "OO" page
 in volume 50-219 Oyster Creek
 package for the files*

E. G. Greenman

B610

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FROM: John W. Reintjes, Fishery Biologist
Atlantic Estuarine Fisheries Center
Beaufort, NC 28516

Fork Length of Menhaden in mid-bay of Atlantic Ocean
 dead in cove beach, Water Street, N.J., Jan. 17, 1973.

<u>Fork Length</u> <u>in mm</u>	<u>No. of</u> <u>Menhaden</u>
145-149	1
150-154	
155-159	
160-164	
165-169	1
170-174	3
175-179	3
180-184	5
185-189	
190-194	8
195-199	4
200-204	11
205-209	
210-214	3
215-219	7
220-224	5
225-229	7
230-234	
235-239	2
240-244	3
245-249	1
250-250	3
255-259	
260-264	3
265-269	5
270-274	6
275-279	5
280-284	
285-289	3
290-294	2
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300-304	
305-309	3
310-314	2
315-319	
320-324	
325-329	
330-334	1
335-339	

100

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