UNITED STATES
ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS
REGION 1
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

MAY 20 1974

Mr. Paul E. Hamer
Nacote Creek Research Station
Marine Fisheries Section
Star Route
Absecon, New Jersey 08201

Dear Mr. Hamer:

In response to your request of Dr. John Reintjes dated April 25, 1974, as transmitted to me by Dr. Reintjes, I've enclosed copies of three reports which were prepared by Dr. Reintjes while consulting with this office on fish kills at Oyster Creek.

Sincerely,

J. Philip Stohr, Chief
Environmental Protection and
Special Programs Section

Enclosures:
1. January 19, 1973 "Comments relative to the Oyster Creek menhaden kill, January 1973, with estimates of the number of dead fish".

2. February 2, 1973 "Additional comments relative to the Oyster Creek menhaden kill, January 1973".

3. January 17, 1974 "Trip Report: Oyster Creek Nuclear Electric Generating Station, January 11-15, 1974".

(Previously sent to State of New Jersey as Attachment 1 to RO Inspection Report No. 50-219/74-01, dated February 7, 1974.)

B/537

	CRESS					
OFFICE ▶						
SURNAME ▶	Stohr	Nelson	O'Reilly			BRUNNER
DATE ▶	5/17/74	5/20/74	5/20			5/15/75

To: James P. O'Reilly
Directorate of Regulatory Operations
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

From: Jersey Central Power & Light Company
Oyster Creek Nuclear Generating Station, Docket #50-219
Forked River, New Jersey 08731

Subject: Abnormal Occurrence Report No. 50-219/74/31

The following is a preliminary report being submitted in compliance with the Technical Specifications paragraph 6.6.2.

Preliminary Approval:

J. T. Carroll, Jr. 5/20/74
Date

cc: Mr. A. Giambusso

B538

8304050445 37.

Initial Written Report Date: 5/20/74

Time of Occurrence: 1530

OYSTER CREEK NUCLEAR GENERATING STATION
FORKED RIVER, NEW JERSEY 08731

Abnormal Occurrence
Report No. 50-219/74/ 31

IDENTIFICATION OF OCCURRENCE: Violation of the Technical Specifications, paragraph N/A, Inoperability of one Bergen-Paterson Hydraulic Shock and Sway Arrestor located on the South Core Spray System in the Reactor Building.

This event is considered to be an abnormal occurrence as defined in the Technical Specifications, paragraph 1.15D.

CONDITIONS PRIOR TO OCCURRENCE:

____	Steady State Power	____	Routine Shutdown Operation
____	Hot Standby	____	Load Changes During Routine Power Operation
____	Cold Shutdown	____	Other (Specify)
X	Refueling Shutdown		
____	Routine Startup Operation		

DESCRIPTION OF OCCURRENCE: An inspection of the Reactor Building snubbers, Bergen-Paterson Type HSSA-10, located two inoperable units and five leaking units. They are as follows:

Unit	System	Condition	Elevation
477287	Containment Spray	Failed	-19'
469873	Containment Spray	Leaking	23'
469903	Shutdown Cooling	Leaking	51'
469846	Core Spray	Leaking	75'
469855	Core Spray	Failed	75'
487465	B. Emergency Cond.	Leaking	75'
477170	A. Emergency Cond.	Leaking	75'

APPARENT CAUSE OF OCCURRENCE:

X	Design	____	Procedure
____	Manufacture	____	Unusual Service Condition
____	Installation/ Construction	____	Inc. Environmental
____	Operator	____	Component Failure
		____	Other (Specify) ____

The cause of failure of the Core Spray System snubber was a loss of the hydraulic fluid. This snubber has not been rebuilt since April 1973 and probably has never been rebuilt. The type of seal material in this unit is of the millable gum polyurethane or cast polyurethane type.

ANALYSIS OF OCCURRENCE:

The safety significance of this occurrence was a partial loss of the seismic restraining ability for the affected system. Had the plant suffered a design basis earthquake, the probability that this system would have suffered structural damage was increased.

CORRECTIVE ACTION:

The seven units were replaced with units equipped with EP seals and pressure tested to 4000 psi.

FAILURE DATA:

Manufacturer: Bergen-Paterson
Type: HSSA-10

Prepared by: _____ Date: 5/20/74

UNITED STATES
ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS
REGION 1
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

MAY 20 1974

Jersey Central Power & Light Company
Attention: Mr. Ivan R. Finfrock
Vice President
Generation
Madison Avenue at Punch Bowl Road
Morristown, New Jersey 07960

License No. DPR-16

Gentlemen:

In response to a request by the State or New Jersey, this office has sent the state copies of the three enclosed reports which were prepared by Dr. John Reintjes while consulting with this office on fish bills at Oyster Creek.

Sincerely,

Paul R. Nelson, Chief
Radiological and Environmental
Branch

Enclosures:
1. January 19, 1973 "Comments relative to the Oyster Creek menhaden kill, January 1973, with estimates of the number of dead fish".

2. February 2, 1973 "Additional comments relative to the Oyster Creek menhaden kill, January 1973".

3. January 17, 1974 "Trip Report: Oyster Creek Nuclear Electric Generating Station, January 11-15, 1974".

(Attachment 1 to RO Inspection Report No. 50-219/74-01, dated February 7, 1974).

cc: Mr. J. T. Carroll
Station Superintendent

B/539

OFFICE ▶	CRESS					
SURNAME ▶	Stohr/mjd	Nelson	O'Reilly			BRUNNER
DATE ▶	5/17/74	5/20/74	5/20			5/20/74

Form AEC-318 (Rev. 9-53) AECM 0240

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bcc: RO Chief, R&EPB
RO Chief, FS&EB
OGC
PDR
Local PDR
RO Files
DR Central Files
RO:I Regulatory Reading Room
Anthony Z. Roisman, Counsel for Citizens Committee for Protection of the Environment
1712 N Street, Northwest
Washington, D. C. 20036
RO:HQ
RS
DL
NSIC
DTIE

88/1

Comments Relative to the Oyster Creek Menhaden Kill, January 1973, with Estimates of the Number of Dead Fish.

Dr. Charles B. Wurtz, biological consultant, assisted by Roy E. Younger, is conducting a monthly inventory of fish in the vicinity of Oyster Creek Generating Station. Their December survey was underway December 27-29. At noon on December 28, they met Tom McClusky, plant manager, and he mentioned the planned shut-down. Wurtz advised him to put the dilution pump in operation and come down slowly to minimize gradient shock. Apparently the Station tripped out at 6 a.m. on December 29, so that the planned shut-down was pre-empted. On December 29, the last day of the routine survey, 205 menhaden ranging from 4 to 15 inches (mean 8.6 in) were taken by gillnet in Oyster Creek. They saw several dead juveniles and some adults in apparent distress. Oyster Creek temperatures decreased from 59-60 F to 44-45 F following the plant shutdown at 6:00 a.m. December 29.

Dr. Wurtz learned of the fish kill on January 8 and conducted an on site inspection on January 9. Ice on the Creek and the finger lagoons prevented trawl or gillnet collecting. No dead fish were seen in the main channel area. Dead fish were easily visible through the ice on the lagoons. They estimated 900 dead menhaden in 20,000 square feet. If this were extrapolated for the 4 lagoons with 400,000 square feet, it would give an estimated total of 18,000 dead menhaden. They reported relatively few gulls as compared to the flocks present during the kill of January 1972. The only other fish noticed were 20 Bay anchovies frozen in the ice.

Paul E. Hamer, Director N.J. Division of Fish, Game and Shellfish, Nacote Creek Research Station, Absecon, learned about the shut-down and fish kill on January 8. He sent a crew to Oyster Creek on January 9. The Creek was covered with ice and flocks of gulls were trying to get at the dead fish. They reported menhaden accounted for about 99 percent of the dead fish and they ranged from juveniles to adults, 4 to 14 inches in length. Nearly all of the dead menhaden were in the finger lagoons. They estimated the number of dead fish in the surface ice and cut a hole in the ice and used a bottom grab to sample the bottom. They estimated a total fish kill of 1,200,000 fish. Approximately 23,000 in the surface ice and the remainder on the bottom. Nearly all of the dead fish were Atlantic menhaden.

To explain the large estimated number of dead menhaden on the bottom, he mentioned that most of the dead menhaden were found on the bottom during their survey of Oyster Creek after the January 1972 kill. Menhaden have a relatively small swim bladder and usually do not surface when they are killed.

Mr. Hamer believes they could be very helpful in the proper evaluation of fish kills if they were notified in advance of planned shutdowns or as soon as possible when there is an emergency shutdown.

Paul Hamer mentioned another fish kill, primarily of menhaden, that also occurred during the week of January 8. It took place in a small cove near Harvey Cedars at the lower end of Barnegat Bay. As this is about 12 miles south of Oyster Creek, on the other side of Barnegat Bay, and south of Barnegat Inlet it is quite unlikely the dead fish came from the Oyster Creek area.

I called the Mid-Atlantic Coastal Fisheries Center, Sandy Hook and talked to John Mahoney, a fishery biologist that has been involved with fish-kill studies. He had not been involved with the Oyster Creek menhaden kill but obtained the following information from Mrs. Pawlikowski, Secretary to the Director. No one from MACFC went to Oyster Creek the week of January 8 but several phone calls were made. Persons called were Ed Sherratt, Regional Director of Public Information, Jersey Central Power and Light, Asbury Park; Herbert Fishberg, Newark Star Ledger; and Mr. Mallie, Briarwood Yacht Basin, Oyster Creek. They all confirmed that a fish kill had occurred during the weekend of January 5-8. Mr. Mallie estimated that 6 menhaden per square yard were frozen into the surface ice along the bulkheads of the finger lagoons and 1 menhaden per square yard over the remaining area. He reported menhaden 8 to 10 inches long but added that smaller fish may have been present but would be much harder to see in the ice.

Assuming Mr. Mallie's estimated pertained to the 4 finger lagoons, each 1,000 ft. long and 100 ft. wide, with 6 menhaden in each square yard along the bulkheads and 1 menhaden per square yard in the remaining areas. The estimated total is approximately 58,000 menhaden.

Estimates of dead menhaden in the surface ice roughed from 18,000 to 58,000. There was only one estimate of 1,200,000 for the total number of dead menhaden for both surface and on the bottom by biologists of N. J. Nacote Creek Research Station.

January 19, 1973

John W. Reintjes
Fishery Biologist
Atlantic Estuarine Fisheries Center
Beaufort, North Carolina

Additional Comments Relative to Oyster Creek

Menhaden Kill, January 1973.

In my report of January 19, I summarized information received from three sources: 1. Charles B. Wurtz, Biological Consultant
2. Paul E. Hamer, Director, N.J. Nacote Creek Research Station,
3. John Mahoney, Fishery Biologist, Middle Atlantic Coastal Fisheries Center, Sandy Hook

From the information received, I compiled 3 estimates of the number of dead menhaden in the surface ice of Oyster Creek and 1 estimate of the total kill including those out of sight on the bottom.

1. Dr. Wurtz estimated 900 dead in 20,000 ft^2 of surface ice in the 4 finger lagoons. This number was arrived at by counting the dead fish in the terminal 50 feet of each lagoon. He mentioned that the dead seemed concentrated in the closed end of each lagoon. However, if the number were extrapolated to the total area of the 4 lagoons (I estimated each lagoon was 1,000 by 100 feet), it would give an estimate of 18,000 dead menhaden. For comparison, if the dimensions used by NCRS were used the extrapolated figure would be 24,468 dead in the surface ice of the 4 lagoons.

2. Paul E. Hamer and staff biologists estimated 23,000 dead menhaden in the surface ice of the 4 finger lagoons. This was done by counting the number of dead while walking on the ice. The area covered was approximately 1/4 of the lagoon starting from the closed end. They cut holes in the ice and used an Ekman grab dredge (36 in^2) to sample the fish on the bottom. They made 9 grabs towards the closed ends of the lagoons and obtained 5 menhaden, 4-5 in. long. From these samples they calculated the number of dead menhaden in the bottom of the lagoons. The lagoon dimensions used were 1,050 by 125 ft. for the 3 western and 1,200 by 125 feet for the easternmost.

3. I called John Mahoney because I heard that Sandy Hook Laboratory had investigated the kill. He had not been involved but would inquire and call me back. He reported that someone from the Laboratory had called Mr. Mallie, a yacht basin operator at Forked River. Mr. Mallie estimated 6 dead menhaden per yd^2 frozen in the ice along the bulkheads and 1 per yd^2 in the central areas of the lagoons. By interpreting and extrapolating this observation, an estimated total of 58,000 fish was obtained for the 4 lagoons, 1000 X 100 ft. For comparison, if the

dimensions used by NCRS were used the extrapolated figure would be 74,718 dead in the surface ice of the 4 lagoons.

The estimates of 23,000, 24,468, and 74,718 when treated statistically give confidence limits of 7,409 and 74,048, unless a 1/20 error occurred in the sampling counts. I extrapolated the estimates without any information on the uniformity of the actual values for the total lagoon area. Dr. Wurtz reported the dead were concentrated near the closed ends of the lagoons and Mr. Mallie's estimate of 6 per yd^2 may have been the maximum in one lagoon or in a small area. Extrapolated estimates from counts made in restricted areas tend to be larger than total area counts.

The estimate of 1,208,321 dead menhaden on 543,750 ft^2 of bottom in the 4 lagoons would have wide confidence limits. The results of the 9 grabs resemble a negative binomial distribution and were so treated with a Poisson generation to obtain 95% confidence limits*. The number of dead fish on the bottom of the 4 lagoons calculated from the sample of 5 fish obtained in 9 grabs is between 386,665 and 2,827,492 unless a 1/20 chance of error occurred in sampling.

The Ekman grab dredge used was too small to adequately sample the dead menhaden on the bottom. It is unlikely that the grab would take fish larger than 6 inches long. Wurtz' gillnet catch of 205 menhaden with a mean length of 8.6 inches on December 29 and the reported size to 14 inches among those in the ice means that menhaden over 6 inches were present that would not be taken by the grab. Also, the gillnet Wurtz used will not catch menhaden 3 inches or less, fork length.

Wurtz' estimates in the following table showed that lagoons 1 and 3 (numbered from the west) had fewer dead fish in the ice than did lagoons 2 and 4 and this is also indicated in the Ekman grab samples:

Lagoon	Estimated size ft^2	Wurtz'[1] estimate in 5,000 ft^2	NCRS grab samples
1. Venice	131,250	50	0,0,0
2. Sanabel	131,250	400	1,1
3. Buccaneer	131,250	50	0,0
4. Privateer	150,000	400	1,2

[1] in surface ice at closed end of lagoon.

*95% confidence limits: Poisson

$$m = X + 1.92 \mp 1.960\sqrt{X + 1}$$

It is reasonable to assume that more dead menhaden would be on the bottom than in the surface ice. Menhaden have a relatively small swim bladder so that recently dead menhaden usually sink. Decomposition and bloating will bring them to the surface but with ambient temperatures near freezing this process would occur very slowly or not at all.

In conclusion, the methods used to estimate the number of dead fish lacked the precision required to evaluate the situation adequately. Undoubtedly, the number frozen in the ice represented some fraction of the total dead. Any assumption that the number counted in part of a lagoon or in part of each lagoon could be used to calculate the number in the total area leaves room for doubt. The number of bottom samples and the type and size of grab dredge raises many questions about the reliability of the estimated number of dead on the bottom.

Suggestions to ameliorate or prevent a cold-shock kill in a heated effluent area when the generating station is closed down:

1. If dilution pumps are available, operate for a period preceding the shutdown to decrease the effluent temperature.

2. Shut down gradually so that a shallow declining gradient is developed towards ambient.

3. Select or adjust the date for a planned shutdown to coincide with a warm meterological forecast.

4. If feasible avoid planned shut downs during the colder months of the year.

At present, the best way to avoid cold-shock kills is to utilize discharge areas that distribute and circulate the heated effluent so that a very small area has a high Δ t and a large area has a small Δ t. Basins, embayments, and other relatively closed bodies of water, such as Oyster Creek, are profoundly influenced by the effluent creating an environment that is maintained 15° or more above winter ambient. If this habitat is large, proportionally large cold-shock kills may occur.

John W. Reintjes
Fishery Biologist
Atlantic Estuarine Fisheries Center
Beaufort, N.C.

February 2, 1973

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, PMI, 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. Stoudnour	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 ths 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 eratically in the oper 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 beach, Oyster Creek, N.J., January 13, 1973.

Fork Length in mm	No. of Menhaden
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
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
MFS
Beaufort, N.C.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Atlantic Estuarine Fisheries Center
Beaufort, North Carolina 28516

May 1, 1974

Dr. J. Philip Stohr
Regulatory Operations, Region I
U.S. Atomic Energy Commission
King of Prussia, PA 19406

Dear Phil:

This is to confirm my conversation with Jerry Everett on April 30, regarding the enclosed letter from Paul Hamer. All available information I have on fish kills at Oyster Creek were submitted to you in the following reports:

> January 19, 1973 "Comments relative to the Oyster Creek menhaden kill, January 1973, with estimates of the number of dead fish".
>
> February 2, 1973 "Additional comments relative to the Oyster Creek menhaden kill, January 1973".
>
> January 17, 1974 "Trip Report: Oyster Creek Nuclear Electric Generating Station, January 11-15, 1974".

Also enclosed is a copy of my trip report of March 5, 1973 "Jersey Central Power and Light Company Oyster Creek menhaden kill conference - Parsippany and Newark N.J. and Toms River, N.J. February 21 and 28, 1973". It does not contain any observations but it does refer to the February 1973 kills.

I referred Mr. Hamer to you. A copy of my letter to him is enclosed.

Sincerely,

John W. Reintjes
Fishery Biologist

Enclosures

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Atlantic Estuarine Fisheries Center
Beaufort, North Carolina 28516

April 30, 1974

Mr. Paul E. Hamer
Nacote Creek Research Station
Star Route
Absecon, NJ 08201

Dear Paul:

In response to your letter of April 25, all of the direct information I have of fish kills at Oyster Creek was obtained as a consultant for the A.E.C. and was submitted to them. I have referred your request to Dr. J. Philip Stohr, Senior Environmental Scientist, Regulatory Operations, Region I, for reply.

I am enclosing a report we prepared for G.P.U. Corporation as background biological information following the menhaden kill of January 1972. I believe you received a copy when it was prepared for we had obtained the information from Great Egg Harbor from you.

Sincerely,

John W. Reintjes
Fishery Biologist

Enclosure

cc: Dr. J. Philip Stohr
U.S. Atomic Energy Commission
King of Prussia, PA 19406

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF
FISH, GAME AND SHELL FISHERIES
RUSSELL A. COOKINGHAM
DIRECTOR

PLEASE REPLY T
P. O. BOX 1809
TRENTON, N. J. 08

Leeote Creek Research Static
Marine Fisheries Section
Star Route
Absecon, New Jersey 08201

April 25, 1974

Dr. John W. Reintjes
NOAA
National Marine Fisheries Service
Beaufort, North Carolina 28516

Dear John,

Our Attorney General in charge of our Oyster Creek case has asked me to "obtain all available information from the Beaufort Lab and Dr. Reintjes concerning the fish kills at Oyster Creek".

Any materiel you can send me would be appreciated.

Best regards.

Sincerely yours,

Paul H.

Paul E. Hamer
Principal Fisheries Biologist

PEH:msh