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OYSTER CREEK NUCLEAR GENERATING STATION  
Forked River, New Jersey 08731

Nonroutine Environmental Operating Report No. 50-219/79-5

Report Date

September 10, 1979

Occurrence Date

August 3, 1979

Time of Occurrence

Prior to 10:00 a.m.

Identification of Occurrence

Fifty to one-hundred dead fish were observed in Barnegat Bay, south of the mouth of Oyster Creek, floating along the shore. This report responds to condition 4.5 of the Environmental Technical Specifications.

Conditions Prior to Occurrence

During August 2, 1979, the plant was operating at full power, but at 2:00 p.m. began reducing load to comply with discharge temperature LCO's. By 10:00 p.m., the plant was down to 533 MWe. No stressed or dead fish were observed in Oyster Creek during August 2, 1979 up to 5:45 p.m. During August 2, 1979, intake temperatures at the plant averaged 87.5°F., with a range of 84.9°F. to 90.4°F. Peak intake temperatures above 90°F. occurred between 5:15 p.m. and 8:00 p.m. Discharge of water tracing dye, Rhodamine WT (Dupont) began at 2:45 p.m. on August 2, 1979. Concentrations measured in Oyster Creek later on August 2, 1979 were about 0.5 ppb. Dye pumping stopped on August 3, 1979 at about 5:00 p.m. at the completion of the experiment.

Description of Occurrence

On August 3, 1979, at 10:00 a.m., about fifty to one-hundred dead fish were observed floating in Barnegat Bay on the south side of the mouth of Oyster Creek. An actual count was not possible due to weather and site conditions. A number of species were present, although only northern puffer and striped bass were accessible to the observers in a boat. Northern puffer was the most common species. Two specimens were collected along the banks of Oyster Creek between the mouth and U.S. Route #9 after 1:00 p.m. Two specimens were collected west of Route #9 after 1:30 p.m. Two specimens were collected in Barnegat Bay.

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All specimens found had been dead for some time as they showed evidence of gull or crab attack. Striped bass and northern puffer specimens showed no evidence of hemorrhaging in the gills or eyes.

Six specimens were sent to Radiation Management Corporation for identification, length and weight measurements (Appendix I).

#### Apparent Cause of Occurrence

The exact cause of the fish kill is uncertain, although at least two possibilities are likely:

1. Water temperatures exceeding lethal temperature for species.
2. Low dissolved oxygen condition.

#### Analysis of Occurrence

The two potential causes could have acted singly or in concert.

Reference to the Oyster Creek-Forked River 316 report indicates the intake temperatures were potentially lethal to striped bass and northern puffer and, thus, water temperature should be considered the prime causal agent. No unusually low oxygen concentrations were observed during the morning of August 2, 1979 in the intake canal, although diurnal variations in dissolved oxygen are possible. During this week, other fish kills were reported from New Jersey coastal waters (Sandy Hook and Cape May) apparently caused by low dissolved oxygen levels in conjunction with unusually high water temperatures.

Loss of these fish should not adversely affect the population of the four species identified in Appendix I.

#### Corrective Action

Load reduction of the plant was made during August 2, 1979. Similar high ambient temperatures were not observed again after August 2 and 3, 1979.

Appendix I - Fish Specimens Collected on August 10, 1979 \*

<u>Species</u>	<u>Length (cm)</u>	<u>Weight (g.)</u>
1) Striped Bass	44	863.9
2) Striped Bass	47	874.2
3) Striped Bass	34	408.9
4) Goose Fish	**	**
5) Northern Puffer	**	**
6) Tautog	**	**

\* Identifications and measurements made by D. L. Thomas of Radiation Management Corporation.

\*\* Length and weight measurements not taken due to fish parts missing.

MBR (8/20/79)

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