



OYSTER CREEK NUCLEAR GENERATING STATION  
Forked River, New Jersey 08731

LICENSEE EVENT REPORT  
Reportable Occurrence No. 50-219/83-26-Revision 1

Report Date

May 20, 1986

Previous Report Date

February 7, 1984

Discovery Date

December 23, 1983

Identification of Occurrence

Over the past several years the addition of lead, for the purpose of radiation shielding, on two of three fuel pool cooling heat exchangers has created a situation where the heat exchangers' foundation bolts would be overstressed during a seismic event. In addition, while investigating this situation, it was discovered that the original portions of the fuel pool cooling piping system are supported only by dead weight supports and therefore, may not be a seismic Class I System as stated in the station's "Facility Description and Safety Analysis Report" (FDSAR). This is considered to be a reportable occurrence in accordance with paragraph 6.9.2 of the Technical Specifications which was in effect on December 23, 1983.

Conditions Prior to Occurrence

The plant was in various operating and shutdown modes.

Descriptin of Occurrence

In response to an ALARA concern in the area of the fuel pool cooling heat exchangers, the Technical Functions Division (Engineering) was requested to evaluate the addition of lead shielding to the heat exchangers. During the evaluation it was noted that an estimated total of 4320 lbs. of lead (1320 lbs. - upper HXGR; 3000 lbs. - lower HXGR) is on the original fuel pool cooling heat exchangers. This condition was analyzed utilizing the seismic floor response spectrum developed during the NRC's Systematic Evaluation Program (SEP) for Oyster Creek. The analysis indicates that the foundation bolts for the heat exchangers would be overstressed if a seismic event were to occur. During the course of this investigation, it was also discovered that there exists a discrepancy between the station FDSAR and the amended installation specification for the system. The FDSAR indicates that the fuel

IE 22  
11

LICENSEE EVENT REPORT

Reportable Occurrence No. 50-219/83-26, Rev. 1

Page 2

pool cooling system is a seismic Class I system while addendum No. 6 to Burns and Roe Specification S-2299-60A removed fuel pool cooling from the list of Class I seismic systems.

Apparent Cause of Occurrence

The cause of the occurrence was attributed to lack of procedural controls in the past when applying lead shielding to piping systems.

The exact cause of the discrepancy between the FDSAR and the installation specification could not be determined but is believed to be due to lack of control of changes during the construction phase of the plant.

Analysis of Occurrence

The spent fuel pool cooling system provides the means for heat removal from the spent fuel storage pool. The fuel pool cooling heat exchangers, in turn, are cooled by reactor building closed cooling water (RBCCW) which is in turn cooled by service water (SW). RBCCW and SW are not seismic Class I systems. The failure of any of these systems would cause the fuel pool to heat up. This heat-up might lead to structural damage of the fuel pool. The Technical Specification basis for the fuel pool indicates that there would be no damage to fuel pool structural integrity for approximately ten (10) hours, if heat-up commenced from the Technical Specification limit of 125°F. This would provide time to restore cooling, if it were lost. An alarm annunciates in the control room when the fuel pool temperature reaches 120°F.

Analyses performed to establish the Technical Specification bases conservatively assumed the heat load to the spent fuel pool resulting from a complete core offload within ten days following shutdown and all licensed storage locations filled from prior refuelings. In section 2.2.3 of the NRC's safety evaluation of Amendment 76 to the Oyster Creek Nuclear Generating Station Technical Specifications, the NRC concluded that adequate time was available (88.4 hours) to provide and maintain an alternate source of Spent Fuel Pool water prior to uncovering the top of the spent fuel racks. This assumed an initial water temperature of 125°F and the maximum abnormal heat load ( $19 \times 10^6$  BTU/hr).

Additionally, a rupture of the fuel pool piping will not cause the fuel pool to drain due to the arrangement of return lines and skimmer surge tanks.

Based upon the potential consequences of a failure of this type and the likelihood of occurrence, the safety significance of this occurrence is considered to be minimal.

Corrective Actions

The following corrective actions have been initiated:

1. A decontamination effort has been completed which reduced the levels of radiation in the vicinity of the heat exchangers. All lead was removed prior to the startup from the 10R outage.
2. A walk-down of the plant was conducted to ensure that similar situations do not exist which might interfere with the functioning of safety-related equipment. This walk-down was completed prior to the plant startup from the 10R outage.
3. A seismic analysis has been conducted for the fuel pool cooling piping system in its present configuration and it was found that the original fuel pool cooling system is not seismic Class 1. However, the augmented cooling system which was added as part of the fuel pool expansion described in Amendment 78 to the FDSAR is a seismic Class 1 system. Changes will be made to the supply and return piping systems to ensure a seismically qualified flow path can be established between the fuel pool and the seismically qualified portion of the cooling system. Seismic qualification will be based upon operational criteria consistent with ASME Section III, Division I, Appendix F. All accessible portions of the system have been upgraded. Due to ALARA concerns, the completion of the seismic upgrade will be scheduled during the 11R refueling outage as plant conditions allow. All seismic upgrades will be completed prior to restart from 11R. An assessment of the entire system will then be made to determine if further system upgrading is appropriate.



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Writer's Direct Dial Number:

May 20, 1986

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

Dear Sir:

Subject: Oyster Creek Nuclear Generating Station  
Docket No. 50-219  
Licensee Event Report. 50-219/83-026, Rev. 1

This letter forwards one (1) copy of Licensee Event Report (LER) No. 83-026, Revision 1. Vertical lines in the right side margin indicate those sections of the LER that have been revised.

Very truly yours,

  
Peter B. Fiedler  
Vice President and Director  
Oyster Creek

PBF:JR:dsm (#0815A)  
Encs.

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IE22  
11