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December 21, 1999
1940-99-20674

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

Dear Sir:

Subject: Oyster Creek Nuclear Generating Station
Docket No. 50-219
Licensee Event Report 99-004, Supplement 1: SFPC Piping

Enclosed is Licensee Event Report 99-004, Supplement 1. This event did not affect the health and safety of the public.

If any additional information or assistance is required, please contact Mr. Dennis P. Kelly of my staff at 609.971.4246.

Very truly yours,

A handwritten signature in black ink, appearing to read "Sander Levin". The signature is fluid and cursive, with a large initial "S" and a long, sweeping underline.

Sander Levin
Acting Site Director
Oyster Creek

DPK

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

JE22

PDZ ADock 05000219

LICENSEE EVENT REPORT (LER)

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) <p style="text-align: center;">Oyster Creek Unit 1</p>	DOCKET NUMBER (2) <p style="text-align: center;">05000 - 219</p>	PAGE (3) <p style="text-align: center;">1 of 4</p>
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TITLE (4)

Two Spent Fuel Pool Cooling System Piping Supports Do Not Meet Design Requirements Due to Inadequate Analysis

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
05	10	99	99	04	1	12	21	99	FACILITY NAME	05000
									FACILITY NAME	05000

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR <input type="checkbox"/> : (Check one or more) (11)								
POWER LEVEL (10)	100	20.2201(b)			20.2203(a)(2)(v)			50.73(a)(2)(i)		50.73(a)(2)(viii)
		20.2203(a)(1)			20.2203(a)(3)(i)			X 50.73(a)(2)(ii)		50.73(a)(2)(x)
		20.2203(a)(2)(i)			20.2203(a)(3)(ii)			50.73(a)(2)(iii)		73.71
		20.2203(a)(2)(ii)			20.2203(a)(4)			50.73(a)(2)(iv)		OTHER
		20.2203(a)(2)(iii)			50.36(c)(1)			50.73(a)(2)(v)		
20.2203(a)(2)(iv)			50.36(c)(2)			50.73(a)(2)(vii)				

LICENSEE CONTACT FOR THIS LER (12)

NAME <p style="text-align: center;">Joe Tabone</p>	TELEPHONE NUMBER (Include Area Code) <p style="text-align: center;">(609) 971-4421</p>
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION		
YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO		MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

In May 1999, it was determined that the configurations of 2 pipe supports in the Spent Fuel Pool Cooling System (SFPCS) do not meet their design requirements for deadweight loads. One of these pipe supports is in the seismic class I portion of the system, and therefore, also does not meet its design requirements for load combinations of deadweight plus thermal plus seismic load. This condition is reportable under 10 CFR 50.73(a)(2)(ii).

The root cause of the design basis deviations found was inadequate structural analysis performed during construction of the plant and when the augmented fuel pool cooling system was installed in 1977. The safety significance of the non-conforming conditions has been determined to be minimal as the supports meet operability criteria, the piping meets the design criteria and neither the pipe nor pipe supports would fail during any design basis event. This discrepancy in structural analysis is believed to be isolated to this system at this time.

The appropriate design code for the augmented Spent Fuel Pool Cooling System has been determined and two of six segments have been re-analyzed and found acceptable.

Two pipe supports will be upgraded to meet their design criteria and the remaining analyses will be completed by the end of the upcoming refueling outage.

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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

DATE OF DISCOVERY

The conditions described in this report were discovered on May 10, 1999, and verified to be reportable on June 7, 1999.

IDENTIFICATION OF OCCURRENCE

In May 1999, calculations identified that the configuration of 2 pipe supports (SPT) on the Spent Fuel Pool Cooling System (EHS: DA) pump suction piping did not meet design requirements for deadweight loads. One of the supports (SK-S-001) is installed in the original system (designed to B31.1 – 1955) and the second support (PS-13) is installed in the seismic Augmented Spent Fuel Pool Cooling system that was designed and installed to ASME Section III, Class 3 – 1977. The second support (PS-13) also does not meet the ASME Section III, Class 3 design requirements for load combinations of deadweight plus thermal plus seismic load. These conditions are reportable under 10 CFR 50.73(a)(2)(ii).

CONDITIONS PRIOR TO DISCOVERY

The plant was operating at approximately 100% power with pressures and temperatures normal for full power operation at the time of discovery. However, the plant has operated in all modes with the supports in this condition. The spent fuel pool cooling system was operating in the normal cooling mode at the time of discovery but has operated in all modes with the supports in this condition. The system temperature and pressure have remained within design values in all operating modes despite this condition.

DESCRIPTION OF OCCURRENCE

System structural calculations for the Spent Fuel Pool Cooling System (EHS: DA) were being revised to incorporate lead shielding which was installed on the piping in the 1980's. At that time, an analysis of the piping segments directly affected by the shielding was completed that justified the additional weight. However, the system calculation was not updated to include the additional weight due to the lead shielding installed.

The lead shielding that was added affects only one segment of the six segments included in the system calculation. Revision of this segment has concluded that two piping supports (Oyster Creek identifiers: PS-13 and SK-S-001) for the pump suction piping (more than 40 feet from the shielded pipe) do not meet the design requirements for deadweight. One of these supports (PS-13) is in the Augmented Fuel Pool Cooling System which is designed to be Seismic Class I. This support also does not meet the ASME Section III Class 3 design requirements for load combinations of deadweight plus thermal plus seismic load. The revised analysis further indicates that neither pipe support met the design criteria prior to the addition of lead shielding.

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DESCRIPTION OF OCCURRENCE (Cont.)

The Augmented Fuel Pool Cooling System that was added in 1977 was designed to be Seismic Class I in accordance with ASME Section III, Class 3. The original piping system that interfaces with the Augmented Fuel Pool Cooling System is seismically qualified based on operability criteria consistent with ASME Section III Division I Appendix F.

The revised analysis shows the two pipe supports meet ASME Section III Appendix F and, therefore, remain operable per the guidelines in Generic Letter 91-18, Rev. 1. Investigation into the design code of record for the Augmented Fuel Pool Cooling System has raised some question as to the appropriate design code (B31.1 vs ASME Section III). However, the subject support (PS-13) does not meet the design requirements for either code and, therefore, is reportable at this time.

APPARENT CAUSE OF OCCURRENCE

The original structural analysis for the Spent Fuel Pool Cooling System and the Augmented Spent Fuel Pool Cooling System were inadequate. The original analysis that justifies the pipe supports for this system is not available. The revised structural analysis for this system concludes that two pipe supports do not meet design requirements for deadweight. One of these supports (PS-13) does not meet the ASME Section III, Class 3 design requirements for load combinations of deadweight plus thermal plus seismic load. The other support (SK-S-001) satisfies its design requirement to be seismically qualified based on operability criteria consistent with ASME Section III Appendix F.

ANALYSIS OF OCCURRENCE AND SAFETY SIGNIFICANCE

Although the configuration of two Spent Fuel Pool Cooling pump suction pipe supports do not meet design requirements, these supports were found to be operable per the guidelines in Generic Letter 91-18, Rev. 1. Therefore, the pipe supports and piping continue to fulfill their function of maintaining pressure integrity.

The safety significance of the non-conforming condition has been determined to be minimal as the pipe supports meet operability criteria, the piping meets design criteria, and neither would have failed during any design basis event.

This discrepancy in structural analysis is believed to be isolated to this system at this time.

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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

CORRECTIVE ACTIONS

The two pipe supports (PS-13 and SK-S-001) will be upgraded to meet their respective design criteria during the next refueling outage.

The system piping/pipe support calculation is broken down into six segments. One of those segments was the subject of the original LER. An additional segment has been evaluated (presently in design verification) and has confirmed that the piping and pipe supports meet their required design criteria. The two segments reviewed thus far are the segments known to be affected by the lead shielding that has been installed. The pipe support analysis reconstruction for the remaining four segments is scheduled to be completed by 18R.

At the time of the original LER, there was confusion as to the appropriate design code (B31.1 or ASME Section III). The appropriate design code for the augmented Fuel Pool Cooling system has been determined to be ASME Boiler & Pressure Vessel Code Section III, 1974 through Summer 1975 Addenda.

SIMILAR EVENTS

LER 98-011: Three Small Bore Piping Lines Did Not Meet Design Basis Seismic and/or Thermal Allowables