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Southern Nuclear Operating Company
the southern electric system

Docket No.: 50-348

November 7, 1996

10 CFR 50.73

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

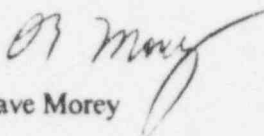
Joseph M. Farley Nuclear Plant - Unit 1
Licensee Event Report Number 96-006-00
Kaowool Fire Barrier Systems Not Installed Per Design

Ladies and Gentlemen:

Licensee Event Report 96-006-00 (Unit 1) is being submitted in accordance with 10 CFR 50.73(a)(2)(ii.).

If there are any questions, please advise.

Respectfully submitted,


Dave Morey

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Enclosure

cc: Mr. S. D. Ebnetter, Region II Administrator
Mr. J. I. Zimmerman, NRR Project Manager
Mr. T. M. Ross, FNP Sr. Resident Inspector

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NRC FORM 366 (4-95)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/98	
LICENSEE EVENT REPORT (LER)					
FACILITY NAME (1) Joseph M. Farley Nuclear Plant - Unit 1				DOCKET NUMBER (2) 0 5 0 0 0 3 4 8	
TITLE (4) Kaowool Fire Barrier Systems Not Installed Per Design Drawings				PAGE (3) 1 OF 5	
EVENT DATE (5)		LER NUMBER (6)		REPORT DATE (7)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
1	0	8	9	6	9
		-		0 0 6 - 0 0	
OTHER FACILITIES INVOLVED (8)					
FACILITY NAME					
FACILITY NAME					
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 1: (Check one or more) (11)					
OPERATING MODE (9) 1		20.2201(b)		20.2203(a)(2)(v)	
POWER LEVEL (10) 1 0 0		20.2203(a)(1)		20.2203(a)(3)(i) <input checked="" type="checkbox"/>	
		20.2203(a)(2)(i)		20.2203(a)(3)(ii)	
		20.2203(a)(2)(ii)		20.2203(a)(4)	
		20.2203(a)(2)(iii)		50.36(c)(1)	
		20.2203(a)(2)(iv)		50.36(c)(2)	
				50.73(a)(2)(i)	
				50.73(a)(2)(ii) <input checked="" type="checkbox"/>	
				50.73(a)(2)(iii)	
				50.73(a)(2)(iv)	
				50.73(a)(2)(v)	
				50.73(a)(2)(vi)	
				50.73(a)(2)(vii)	
				50.73(a)(2)(viii)	
				50.73(a)(2)(ix)	
				73.71	
				OTHER	
				Specify in Abstract below	
				or in NRC Form 366A	
LICENSEE CONTACT FOR THIS LER (12)					
NAME R.D. Hill, General Manager - Nuclear Plant				TELEPHONE NUMBER	
				AREA CODE	
				3 3 4 8 9 9 - 5 1 5 6	
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)					
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
SUPPLEMENTAL REPORT EXPECTED (14)					
YES (If yes, complete EXPECTED SUBMISSION DATE)				X NO	
				EXPECTED SUBMISSION DATE (15)	
				MONTH DAY YF-R	
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-space typewritten lines) (16)					
<p>On October 8, 1996 with Unit 1 in mode 1 operating at 100 percent power, it was determined that Farley Nuclear Plant (FNP) had been in a condition that was outside the design basis of the plant. It was determined that the as-built Kaowool fire barrier system on six Unit 1 raceways did not comply with the requirements of FNP's Fire Protection Program Re-evaluation for 10 CFR 50 Appendix R.</p> <p>A review of installation documentation indicates the cause of this event was due to personnel error during the implementation of design drawings, or insufficient design guidance provided during initial installation.</p> <p>Hourly fire watches were established and will remain in place until raceways are in compliance with the requirements of FNP's Fire Protection Program Re-evaluation for 10 CFR 50 Appendix R. Raceways not in compliance are being corrected to meet original commitments. These actions will be completed by January 31, 1997.</p>					

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST 500 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-5 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (8)	PAGE (3)									
Joseph M. Farley Nuclear Plant - Unit 1		<table border="1"><tr><th data-bbox="1015 308 1096 351">YEAR</th><th data-bbox="1096 308 1258 351">SEQUENTIAL YEAR</th><th data-bbox="1258 308 1388 351">REVISION NUMBER</th></tr><tr><td data-bbox="1015 351 1096 393">96</td><td data-bbox="1096 351 1258 393">- 006</td><td data-bbox="1258 351 1388 393">- 00</td></tr></table>	YEAR	SEQUENTIAL YEAR	REVISION NUMBER	96	- 006	- 00	<table border="1"><tr><td data-bbox="1388 308 1469 351">2</td><td data-bbox="1469 308 1550 351">OF</td><td data-bbox="1550 308 1585 351">5</td></tr></table>	2	OF	5
YEAR	SEQUENTIAL YEAR	REVISION NUMBER										
96	- 006	- 00										
2	OF	5										

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

Plant and System Identification

Westinghouse -- Pressurized Water Reactor

Energy Industry Identification System codes are identified in the text as [XX].

Description of Event

An investigation into the adequacy of the Unit 1 and 2 FNP Kaowool fire barrier systems was initiated based on examples noted by the NRC resident inspector where Kaowool installation did not appear to agree with design drawings. As a conservative measure, on October 2, 1996, hourly fire watches were established in all areas of Units 1 and 2 where Kaowool fire barrier systems were required for supporting Appendix R compliance. In addition, an inspection plan was implemented which included development of a detailed inspection procedure and training of inspection personnel. The inspection procedure was developed to verify installation of Kaowool fire barrier systems to design drawings.

The raceway inspections to verify agreement of as-built configuration to design drawings were begun on October 5, 1996. As the inspections were completed, identified discrepancies were evaluated for Appendix R compliance. The raceway inspection and evaluation scope included evaluating Appendix R compliance for the following discrepancies: Kaowool damage, gaps where the Kaowool terminates at a boundary, damaged or missing Zetex cloth and/or mastic sealant material, and installation of Kaowool fire barrier systems not in agreement with design drawings. On October 8, 1996 with Unit 1 in mode 1 operating at 100 percent power, it was determined that Farley Nuclear Plant had been in a condition that was outside the design basis of the plant. It was determined that the as-built Kaowool fire barrier system on six Unit 1 raceways did not comply with the requirements of FNP's Fire Protection Program Re-evaluation for 10 CFR 50 Appendix R.

On October 10, 1996, inspections and evaluations were completed. It was concluded that six Unit 1 raceways did not meet the 1 hour fire barrier requirement. The associated cables in the affected raceways were then evaluated. The specific deficiencies and scope of components not in compliance with FNP's Fire Protection Program Re-evaluation for 10 CFR 50 Appendix R were determined to be the following:

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TEXT CONTINUATION

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.

FACILITY NAME (1) Joseph M. Farley Nuclear Plant - Unit 1	DOCKET NUMBER (2) 0500034896	LER NUMBER (6)			PAGE (3)						
		YEAR	SEQUENTIAL YEAR	REVISION NUMBER							
		0	6	-	0	0	6	-	0	0	3

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

Raceways BDE-0A, BFDB06, BFDB15, and BHF-36 (located in Room 175) are wrapped with Kaowool as indicated by the Appendix R Safe Shutdown Raceway Drawings and the "R" Wrap raceway listing; however, the Safe Shutdown (SSD) cables exiting these raceways into their associated Charging Pump Room wall penetrations were not wrapped with Kaowool from the point of exit from the Kaowool wrapped raceways to the room entry points into the sealed wall penetrations per the design drawing. Cables were not wrapped for a distance of approximately 24 inches between wrapped raceways and room wall penetrations. The cables of concern are the B Train power supply cable to the dedicated B Train high head safety injection (HHSI) pump and its room cooler, and the B Train power and control cables associated with the swing HHSI pump room cooler.

Raceway BHFC33 (located in Room 319) was not wrapped due to insufficient design guidance provided during initial installation. This raceway includes cables of concern associated with one B Train main steam line isolation valve and the B Train solenoids for the motor driven auxiliary feedwater pump discharge flow control valves.

Raceway BDE-15 (located in Room 160) was not wrapped per the design drawing in that a portion of the raceway was not wrapped. This raceway includes power cables associated with the B Train dedicated HHSI pump and the swing HHSI pump (when aligned to B Train).

Cause of Event

A review of installation documentation and interviews with available individuals involved in the initial Kaowool installation indicates the cause of this event was due to personnel error during the implementation of design drawings, or insufficient design guidance provided during initial installation.

Safety Assessment

The above raceway deficiencies were evaluated and determined to be not safety significant. The potentially affected components were evaluated concerning the ability to meet the fulfillment of the safety function of structures or systems that are needed to shutdown the reactor and maintain

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FACILITY NAME (1) Joseph M. Farley Nuclear Plant - Unit 1	DOCKET NUMBER (2) 05000348	LER NUMBER (8)			PAGE (3)	
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it in a safe shutdown condition. The evaluation concluded that alternate capabilities were available to mitigate the consequences of an event. These alternate capabilities include: existing fire barriers, automatic smoke detection systems, automatic water fire suppression systems, manual fire protection hose stations, administrative programs that control combustible loading, and operator actions. As a result of the evaluation it was concluded that the as found condition of the Kaowool fire barrier system does not pose a significant threat to the ability to safely shut down the reactor and maintain it in a safe shut down condition.

The health and safety of the public was not affected by this event.

Corrective Action

Hourly fire watches were established and will remain in place until the identified deficiencies are corrected.

Raceways not in compliance with FNP's Fire Protection Program Re-evaluation for 10 CFR 50 Appendix R are being corrected to meet original commitments.

These actions will be completed by January 31, 1997.

Additional Information

1. Inspection results also indicated damaged Kaowool, missing or damaged Zetex protective cloth, and missing or damaged mastic sealant in both Units 1 and 2. The inspection discrepancies were evaluated and Deficiency Reports were written as needed to repair deficiencies.

NRC SERs were issued in 1985 and 1986 approving the FNP Appendix R program. Subsequently, an FNP inspection program was developed to ensure no physical damage exists in the Kaowool fire barrier systems. This Kaowool inspection program consisted of periodic inspections to identify required corrective maintenance. The implementing procedure was written such that inspections identified damage to installed Kaowool in specific rooms. However, the procedure did not provide sufficient detail for the inspection personnel to perform a complete inspection. In addition, the inspection personnel were not adequately trained to perform all aspects of this inspection.

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The cause of these deficiencies is attributed to weaknesses in implementation of Fire Surveillance Procedure FNP-0-FSP-43. The procedure utilized for the periodic inspection program will be modified to provide more detailed inspection guidance. These changes will include identification of specific Kaowool installations to be inspected. Additional training will be provided.

Specifically with regard to sealant: During initial industry application of Kaowool, the lack of sealant material where Kaowool terminates at floors was raised as an issue with regard to wicking of Kaowool resulting from flammable liquid spills. To address this concern, Babcock & Wilcox qualified the use of Flamemastic as a sealant at floors and provided approval for use of Flamemastic 77, Bisco SF-60, or Carbolite Intumastic #255 as approved alternatives. To standardize the termination detail and as a conservative measure, the FNP "Notes and Details" drawing that was issued in 1980 required use of a mastic coating at all locations where Kaowool terminates at floors, walls, and ceilings. In 1984, the "Notes and Details" were revised to allow the application of Flamemastic at termination points other than 3 hour fire rated walls. The Kaowool terminations at FNP will conform to these original details.

2. No similar LER's have been reported in which FNP was outside the design basis of the plant due to inadequate implementation of design drawings, or insufficient design guidance provided during initial installation.