NRC FORM 366 (6-89)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TITLE (4)
Inoperability Of Thermo-Lag Barriers Based Upon The Results of Testing Reported In NRC Bulletin 92-01

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 NAMES	DOCKET NUMBER(S)
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0 6	2 5	9 2	9 2	—	0 1 1	—	0 1	0 3	2 9	9 3		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
N		20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
1 0 0		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
	X	20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Donald L. Reeves, Jr.	4 0 2 — 8 2 5 - 3 8 1 1

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 DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

In June 1992, upon receipt of NRC Bulletin No. 92-01, two Thermo-Lag installations in the Control Building basement constructed of Thermo-Lag 330 Fire Barrier material were declared inoperable because they could not be qualified. A Fire Watch was posted. Upon discovery of the condition, the plant was operating at full power.

Subsequently, during a February 1993 NRC inspection of the Fire Protection program, NPPD was advised that two radiant energy shields located in the Cable Spreading Room constructed of Thermo-Lag material should have been declared inoperable pursuant to NRC Bulletin No. 92-01, Supplement 1. In response to the concern raised by the inspector, a Fire Watch was posted. However, due to there having been no assigned Fire Watch, a Notice of Violation was issued. At the time of the inspection, the plant was operating at approximately 95 percent power on end of cycle coastdown.

As specified in NRC Bulletin No. 92-01, testing of Thermo-Lag fire barrier material revealed that the qualification of both the one-hour and three-hour preformed assemblies installed on small conduits and wide cable trays was indeterminate. Additional testing discussed in Supplement 1 to the Bulletin brought into question any rated configuration constructed of Thermo-Lag 330 material.

During the 1993 Refueling Outage, modifications associated with the two Thermo-Lag fire barriers of concern in the Control Building basement will be completed, eliminating the need for the Fire Watch. A Fire Watch will remain stationed in the Cable Spreading Room for the radiant energy shields until either the qualification of the two installations is resolved or the installations are replaced.

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

A. Event Description

In June 1992 upon receipt of NRC Bulletin No. 92-01, "Failure of Thermo-Lag 330 Fire Barrier System to Maintain Cabling in Wide Cable Trays and Small Conduits Free from Fire Danger", NPPD reviewed all Thermo-Lag 330 fire barrier installations and their licensing bases. Two installations were identified where Thermo-Lag 330 Fire Barrier material was used to provide one-hour protection for conduits and conduit banks containing cables that provide safe shutdown capability. These installations are in the Control Building at 882' elevation (the Control Building basement) and are as follows:

1) One two inch conduit containing 125 VDC power cabling to Diesel Generator (DG) No. 2. This DG is used for post-fire safe shutdown outside of the Control Room.

2) One wall enclosure protecting several conduits which contain 4160 VAC power cabling to Service Water Pumps B and D.

In accordance with station procedures, an operability determination was performed. Based upon the fact that the barriers could not be fully qualified, they were declared inoperable. In accordance with Technical Specification requirements, a continuous Fire Watch was posted.

Subsequently, as a result of an NRC inspection of the Fire Protection program during the week of February 1, 1993, NPPD was advised that two radiant energy shields located in the Cable Spreading Room constructed of Thermo-Lag material should have been declared inoperable pursuant to instructions given in NRC Bulletin No. 92-01, Supplement 1, "Failure of Thermo-Lag 330 Fire Barrier system to Perform its Specified Fire Endurance Function", dated August 28, 1992. These installations had previously been the subject of an exemption from Appendix R requirements and were approved as installed. The installations serve as radiant energy shields and had not been constructed nor intended to be rated fire barriers. In September 1992, an evaluation of these Thermo-Lag installations against the expanded scope of the supplement resulted in concluding that the installations continued to be fully operable. Although NPPD maintains that the installations are qualified, in response to the concern raised by the inspector a Fire Watch was posted. A Notice of Violation (NOV) was subsequently issued on February 26, 1993, due to there having been no assigned Fire Watch since issuance of Supplement 1 to the bulletin.

B. Plant Status

On June 25, 1992, when the Thermo-Lag fire barriers in the Control Building basement were declared inoperable, the plant was in normal operation at full power. On February 2, 1993, when advised by the NRC inspector that the Thermo-Lag installations in the Cable Spreading Room, should also have been declared inoperable, the plant was in operation at approximately 95 percent power, nearly 760 MWe, on end of cycle coastdown with all rods fully withdrawn.

C. Basis for Report

This LER was originally issued due to non-compliance of two Thermo-Lag fire barriers in the Control Building basement with the design basis prescribed by 10CFR50.48 and 10CFR50, Appendix R, Section III.G. The condition was considered reportable in accordance with 10CFR50.73(a)(2)(ii). This revision is being submitted as a result of issuance of an NOV on February 26, 1993, which specified that a Fire Watch had not been assigned in the Cable Spreading Room, because the two non-rated radiant energy shields constructed of Thermo-Lag material should have been declared inoperable.

D. Cause

Design. As specified in NRC Bulletin No. 92-01, testing of Thermo-Lag fire barrier material installed in various configurations revealed that the qualification of both the one-hour and three-hour preformed assemblies installed on small conduits and wide cable trays was indeterminate. Therefore, the preformed assemblies would not provide the level of fire protection specified in NRC requirements.

Additional testing of fire barriers constructed with Thermo-Lag material, discussed in Supplement 1 to the Bulletin, brought into question any rated configuration constructed of Thermo-Lag 330 material. However, a re-assessment of the Thermo-Lag installations against the expanded scope of the supplement concluded that the radiant energy shields in the Cable Spreading Room were in compliance with the original design basis and conformed to commitments prescribed in the applicable Appendix R exemption. Therefore, they remained fully operable. A subsequent re-evaluation of these installations submitted to NRC on March 12, 1993, continues to support this assessment.

E. Safety Significance

With regard to the two Thermo-Lag fire barrier installations in the Control Building basement, since the fire barrier material could not be fully qualified in its installed configuration, technically, the possibility of damage to the protected circuits was increased. However, according to the Fire Hazards Analysis for this area, the combustible loading will support a design basis fire for an approximate two minute duration. The subject fire barriers provide one hour protection for redundant 4160 VAC conduit banks routed from the floor through the ceiling to the Cable Spreading Room and for a two inch conduit containing 125V DC control power that is routed in the overhead of the room. The conduits contain Service Water pump power and Diesel Generator switchgear control power. Had a fire occurred in the immediate vicinity of the subject Thermo-Lag barriers, it would have been detected by the installed automatic detection system in service in the area. An alarm would have been annunciated in the Control Room allowing prompt extinguishment.

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

E. Safety Significance - (continued)

With regard to the non-rated radiant energy shields located in the Cable Spreading Room, a re-evaluation of the use of Thermo-Lag material was conducted. The conclusion was that the two enclosures continued to meet the original design basis and satisfied the District's licensing commitments contained in the applicable Appendix R exemption.

F. Safety Implications

The plant response to a fire in the area where the Thermo-Lag fire barrier material is installed would be most significant with the plant in operation at full power, as it was when these conditions were discovered.

G. Corrective Action

Actions to restore the operability of fire barriers constructed of Thermo-Lag material are being pursued and evaluated through an on-going industry program coordinated by NUMARC. However, in order to eliminate the continuing need for the Control Building basement Fire Watch, corrective action is being taken during the 1993 Refueling Outage to eliminate the use of Thermo-Lag material on the wall enclosure and reroute the 125V DC control power cabling to DG No. 2 that had been installed in the two inch conduit. Upon completion of these modifications, the Fire Watch in that area will no longer be required.

With regard to the radiant energy shields installed in the Cable Spreading Room, a Fire Watch was posted when the Thermo-Lag concern was raised by the inspector. On March 12, 1993, NPPD submitted additional information for the NRC's consideration regarding these installations which further demonstrates their design basis qualification and adherence to the requirements of the original exemption request. The Fire Watch in the Cable Spreading Room will remain posted until such time as the NRC either accepts NPPD's evaluation of the installations or until the radiant energy shields are replaced with a material or design meeting NRC acceptance.

H. Similar Events

None.