LICENSEE EVENT REPORT (LER)

Facility Name (1)	Docket Number (2)	Page (3)
Dresden Nuclear Power Station, Unit 2	0 5 0 0 0 2 3 7	1 of 0 4

TITLE (4) Secondary Containment Degraded by Removal of Main Steam Line Penetration Seals Due to Management Deficiency

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)
0 5	1 5	8 8	8 8	0 1 1	0 0	0 6	1 3	8 8	Dresden Unit 3	0 5 0 0 0 2 4 9
									N/A	

OPERATING MODE (9)	N
POWER LEVEL (10)	0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)

	20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)
	20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		73.71(c)
	20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		Other (Specify
	20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		in Abstract
	20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)		below and in
	20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)		Text)

LICENSEE CONTACT FOR THIS LER (12)

Name	TELEPHONE NUMBER
	AREA CODE
Anthony Anandappa, Technical Staff Engineer (X-529)	8 1 5 9 4 2 - 2 9 2 0

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
X	N G	S E A L	X X X X	N					

SUPPLEMENTAL REPORT EXPECTED (14)		Expected Submission Date (15)	Month	Day	Year
	X NO				
Yes (If yes, complete EXPECTED SUBMISSION DATE)					

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

At 1630 hours on May 15, 1988, with Unit 2 shutting down for a scheduled maintenance outage and Unit 3 shut down for a refueling outage, Mechanical Maintenance Department (MMD) personnel discovered that the four boot seals associated with Unit 3 Main Steam Line (MSL) piping penetrations from Secondary Containment were no longer in place. The lack of these seals resulted in the Unit 2/3 Reactor Building (Secondary Containment structure) being in a degraded condition. Upon notification the Operating Department Shift Supervisor initiated the declaration of an Unusual Event, performed an inspection of the area, and notified Technical Staff personnel in regards to the performance of a Secondary Containment Leak Rate Test (SCLRT). Unit 2 achieved a cold shutdown condition at 1703 hours, and the Unusual Event was terminated since the plant was then in compliance with all Technical Specification (3.7.C.1) requirements applicable as a result of the degraded Secondary Containment integrity. Investigation revealed that the boot seals were inadvertently removed by contractors performing asbestos-containing insulation removal. Since contractor personnel are supervised at the Station by the Projects and Construction Services (PACS) Department, the removal of the MSL boot seal was due to a managment deficiency on the part of PACS. Safety significance was minimal since the Reactor Building Ventilation System (RBVS) maintained the Secondary Containment at a negative pressure relative to the atmosphere at all times. Corrective actions included repairs, follow-up SCLRT tests, and discussions with the personnel involved. A previous event involving degraded boot seals is documented in LER 87-028, Docket 050237.

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PLANT AND SYSTEM IDENTIFICATION

General Electric Boiling Water Reactor - 2527 MWt rated core thermal power. Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

Nuclear Tracking System (NTS) tracking code numbers are identified in the text as (XXX-XXX-XX-XXXXX).

EVENT IDENTIFICATION

Secondary Containment [NG] degraded by the removal of the Main Steam [SB] Line (MSL) penetration boot seals due to a management deficiency.

A. CONDITIONS PRIOR TO EVENT:

Unit(s): 2(3) Event Date: May 15, 1988 Event Time: 1630 hours

Reactor Mode(s): N (N) Mode Name(s): Shutdown (Refuel) Power Level(s): 0% (0%)

Reactor Coolant System (RCS) Pressure(s): 9 (0) psig.

B. DESCRIPTION OF EVENT:

At 1630 hours on May 15, 1988, with Unit 2 in the process of a normal unit shutdown for a scheduled maintenance outage and Unit 3 shutdown for a refueling outage with no fuel [AC] or fuel cask movements in progress, Mechanical Maintenance Department (MMD) personnel discovered that the four boot seals associated with Unit 3 Main Steam Line (MSL) penetrations, which are required for Secondary Containment, were no longer in place. These penetrations are located in the MSL tunnel, which in addition contains the outboard Main Steam Isolation Valves (MSIV). The MSL tunnel, as part of the Secondary Containment, is maintained at a negative pressure relative to the adjoining low pressure heater bay [SM] which is considered part of the Turbine Building [NM]. The boot seals are thus designed to prevent excessive infiltration from the low pressure heater bay to the MSL tunnel thereby ensuring Secondary Containment integrity.

The MMD individual, who was in the MSL tunnel for unrelated work activities, notified MMD supervision who then immediately informed the Operating Department Shift Supervisor. An Unusual Event was declared, and Unit 2 was promptly brought into cold shutdown conditions. This was accomplished in approximately 33 minutes, at which time the Unusual Event was terminated. The Operating Department Shift Supervisor also inspected the area and notified the Technical Staff in regards to the performance of a Secondary Containment Leak Rate Test (SCLRT).

C. APPARENT CAUSE OF EVENT:

During the Unit 3 refueling outage, an asbestos-containing insulation removal project was underway in the Unit 3 MSL tunnel. This work was performed by an asbestos removal contracting firm under supervision of the Commonwealth Edison Projects and Construction Services (PACS) Department. Subsequent investigation determined that the asbestos removal crew had removed the boot seals from the MSL penetrations.

Further investigation revealed that inadequate communication had existed between the asbestos removal contractor's supervisor, foreman and crewmen. Both the supervisor and the foreman were directed by PACS and fully understood that they were not to remove any boot seals. However, neither the supervisor nor foreman knew that boot seals were installed on these MSL penetrations. The area where the MSLs penetrate the wall to the low pressure heater bay is not well lit and is recessed near the ceiling. The contractor foreman had performed a pre-job inspection of the area, but had not specifically noticed the boot seals on the MSL penetrations. The crewmen were asked by the contractor foreman to remove all the insulation up to the wall, but no mention of boot seals was made at that time.

Contributing to this event was the fact that neither the contractors nor the PACS engineer realized that the MSL penetration seals were Secondary Containment boundaries. The MSL penetration seals were not discussed in the work request, work instructions or pre-job briefings. Also contributing to this event was the asbestos removal work itself. Because of the potential hazardous environment, supervisory personnel from PACS did not enter the area while the insulation removal work was in progress. They performed pre- and post-job walkdowns but did not notice the removed boot seals. The root cause of this event was therefore attributed to a PACS Department management deficiency.

D. SAFETY ANALYSIS OF EVENT:

The last SCLRT was performed in accordance with Dresden Technical Staff Surveillance (DTS) 1600-22 on March 24, 1988, prior to the start of the Unit 3 refueling outage. This test, as required by Technical Specification (T.S.) 4.7.C.1.c, involves verifying that one train of the Standby Gas Treatment (SBGT) [BH] System is capable of maintaining the Secondary Containment at a negative pressure of 0.25 inches of water with respect to the atmosphere. A satisfactory result of 0.287 inches of water was demonstrated at that time.

It is believed that the asbestos removal personnel removed the boot seals on approximately May 5, 1988. Upon removing the seals, they observed an infiltration of air from the Turbine Building into the MSL tunnel and notified PACS Department supervisory personnel. At this time, they were instructed to install plastic sheeting over the penetration area, in effect restoring Secondary Containment. However, during cleanup operations on May 14, 1988, this plastic sheeting material was also removed.

The Reactor Building Ventilation [VA] System (RBVS) maintained the Secondary Containment at a slight negative pressure relative to the Turbine Building and outside atmosphere throughout this time period, preventing any exfiltration of contamination to the atmosphere. Also following discovery of the missing MSL boot seals, Technical Staff system engineers performed an as-found SCLRT which demonstrated that with the RBVS secured and one SBGT train in operation, approximately 0.1 inches of water negative pressure could be maintained. Although this failed to satisfy the Technical Specification (4.7.C.1.c) requirement of 0.25 inches of water negative pressure, it did demonstrate that the Secondary Containment would have been maintained at a negative pressure had an automatic trip of the RBVS and auto-start of the SBGT system occurred as the result of any postulated design basis event during this time period. Upon discovery of the missing MSL penetration boot seals, Operations Department personnel established plant conditions in compliance with T.S. 3.7.C.1 requirements applicable due to a violation of Secondary Containment integrity within 33 minutes; the plant was maintained in this condition until temporary repairs were performed and a satisfactory SCLRT was completed. For these reasons, the safety significance of this event was minimal.

E. CORRECTIVE ACTIONS:

Following this event, the immediate corrective actions listed below were performed.

1. Declaration of an Unusual Event.

2. Prompt establishment of conditions as required by Technical Specification (3.7.C.1) following a violation of Secondary Containment.

3. Inspection of the area by an Operating Department Shift Supervisor.

4. Performance of an as-found SCLRT by the Technical Staff.

5. Initiation of repairs and follow-up testing of the MSL boot seals.

6. Initiation of a root cause investigation. This investigation attributed this event to management deficiency.

The following are additional corrective actions that are still in progress or have been completed since the event occurred.

1. Replacement of the boot seals under Work Request 69196 and performance of a follow-up SCLRT. (237-200-88-06401).

2. The event was discussed in detail on May 17, 1988, with the personnel involved.

3. This event was included in an awareness/expectation session presented by the Station Manager on June 6, 1988 to contractor personnel.

4. This event will be reviewed with all station personnel in an upcoming tailgate session (237-200-88-06402).

F. PREVIOUS EVENTS:

LER Number/Docket Number	Title
87-028/050237	Failure of Secondary Containment Leak Test Due to Excessive Air In-Leakage.

This event involved failure of an SCLRT on September 18, 1987 due to excessive air in-leakage. A major source of the in-leakage was determined to be degraded Main Steam Line penetration boot seals due to aging. Corrective actions included repairs and implementation of a periodic inspection.

G. COMPONENT FAILURE DATA:

The Main Steam Line boot seals utilize materials included in the design specification seal and hardware schedules.

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Morris, Illinois 60450
Telephone 815/942-2920

June 13, 1988

EDE LTR #88-447

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

Licensee Event Report #88-011-0, Docket #050237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(i)(B).

E.D. Eenigenburg
Station Manager
Dresden Nuclear Power Station

EDE/jmt

Enclosure

cc: A. Bert Davis, Regional Administrator, Region III
File/NRC
File/Numerical

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