



Commonwealth Edison

Dresden Nuclear Power Station

R.R. #1

Morris, Illinois 60450

Telephone 815/942-2920

November 21, 1989

EDE LTR #89-895

U.S. Nuclear Regulatory Commission
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Washington, D.C. 20555

Licensee Event Report #89-030-0, 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/jt

Enclosure

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

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LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1) Dresden Nuclear Power Station, Unit 2	Docket Number (2) 0 15 10 10 10 12 13 17	Page (3) 1 of 0 6
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Title (4)
Reactor Building Fire Rated Wall Degraded by an Unauthorized Penetration Opening 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)
1	0	2 16 8 9	8 9	0 3 10	0 0	1	1	2 18 9	Dresden Unit 3	0 15 10 10 10 12 14 19
									N/A	0 15 10 10 10 11 11

OPERATING MODE (9) N

POWER LEVEL (10) 1 0 0

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

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> Other (Specify in Abstract below and in Text)
<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	
<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

Name Eric Skowron, Technical Staff System Engineer	Ext. 2353	TELEPHONE NUMBER AREA CODE 8 1 5 9 4 2 - 2 19 2 10
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)

Expected Submission Date (15)

Yes (If yes, complete EXPECTED SUBMISSION DATE) NO

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

On October 26, 1989 at 1200 hours, with Unit 2 at 99.6% power and Unit 3 at 94.8% power, the Station Manager discovered a three inch diameter core hole stuffed with rags in a third floor fire wall separating the Unit 2 and Unit 3 Reactor Buildings. Operations Department Supervision was notified, and a once per hour fire watch was established at 1300 hours in accordance with Dresden Administrative Technical Requirement (DATR) 3/4.1.6.

Investigation revealed that this condition had existed for approximately one day before being discovered. The cause of this event is attributed to management deficiency. The safety significance of this event was considered to be minimal because of the small size of the opening, the location of the opening with respect to the fixed combustibles in the area, and the fire detection and manual suppression systems available in the area.

Corrective actions to this event include various administrative and programmatic changes. In addition, a fire barrier reference guide will be prepared. A previous occurrence involving a degraded fire barrier was reported in LER 89-8/050249. The event involved the inadvertent obstruction of a fire damper.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)		
		Year	///	Sequential Number	///	Revision Number				
Dresden Nuclear Power Station	0 5 0 0 0 2 3 7	8 9	-	0 3 0	-	0 0	0 2	OF	0 6	

TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]

PLANT AND SYSTEM IDENTIFICATION:

General Electric - Boiling Water Reactor - 2527 Mwt rated core thermal power.
 Nuclear Tracking System (NTS) tracking code numbers are identified in the text as (XXX-XXX-XX-XXXXX).

EVENT IDENTIFICATION:

Reactor Building [NG] Fire Rated Wall Degraded by an Unauthorized Penetration Opening Due to Management Deficiency.

A. CONDITIONS PRIOR TO EVENT:

Unit(s): 2(3) Event Date: October 26, 1989 Event Time: 1300 hours
 Reactor Mode(s): N (N) Mode Name(s): Run (Run) Power Level: 99.6% (94.8%)
 Reactor Coolant System (RCS) Pressure(s): 1018 (1018) psig

B. DESCRIPTION OF EVENT:

On October 26, 1989 at 1200 hours, with Unit 2 in the Run mode at 99.6% rated core thermal power and Unit 3 in the Run mode at 94.8% rated core thermal power, the Station Manager discovered a three inch diameter core hole stuffed with rags in a third floor (elevation 570'0") wall separating the Unit 2 and Unit 3 Reactor Buildings. The Technical Staff was immediately notified and an engineer was dispatched to examine the penetration. After review, the penetration was identified to be a breach in a three hour rated fire wall. Refer to Figure 1 for a plan view of the affected fire areas. Operations Department Shift Supervision was then notified, and a once per hour fire watch was established within one hour in accordance with Dresden Administrative Technical Requirement (DATR) 3/4.1.6. Mechanical Maintenance installed a temporary fire seal which was inspected and approved at 2045 hours. Work Request 88289 was also initiated to permanently seal the opening.

C. APPARENT CAUSE OF EVENT:

The Station's Technical Specifications include a license amendment that requires adherence to the approved fire protection program. The intent of this amendment is implemented through the Dresden Administrative Technical Requirements (DATR) for fire protection. DATR 3.1.6.1.a requires that a fire watch be posted within one hour whenever a fire rated sealing device is inoperable. Because the investigation into this event established that the fire watch time constraint was exceeded, this event is reportable under 10CFR50.73(a)(2)(i)(B) for a condition that is prohibited by the Technical Specifications.

The Mechanical Maintenance Department was in the process of dismantling and cleaning an area which was formerly a Control Rod Drive (CRD) [AA] maintenance area. This work was being performed under Blanket Work Request No. 208 for general plant cleanup. The work that was to be performed was not intended to disrupt or alter plant components or systems. The work described on the Blanket Work Request form must be approved by a Maintenance Department Supervisor. Prior to commencing on the cleanup work, the Radiation Protection Department surveyed the work area and identified a drain line as a source of high radiation. The drain line was connected to a CRD flush tank and routed through the Unit 2 and Unit 3 Reactor building common wall directly to a

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (5)						Page (3)		
		Year	///	Sequential Number	///	Revision Number				
Dresden Nuclear Power Station	0 5 0 0 0 2 3 7	8 9	--	0 3 0	-	0 0	0 3	OF	0 6	

TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]

floor drain. Because the CRD flush tank was to be removed per the blanket work request, removal of the drain line was added to the blanket work request job scope. In order to reduce personnel exposure, the drain line was hydrolazed and removed before other work in the area resumed.

A substantial portion of the line was hydrolazed and removed between October 24 and October 26, 1989. On October 26, 1989, the final portion of pipe remaining in the Reactor Building common wall was removed. At approximately 1100 hours, the Maintenance Mechanics stuffed the penetration with rags and left the area.

Further investigation into this incident revealed that the drain line penetration was originally installed in 1982 per fire protection requirements for a three hour barrier. However, subsequent to its initial installation, sections of the piping were replaced with Polyvinyl Chloride (PVC) plastic piping including the portion that went through the common wall penetration. It could not be ascertained when the PVC pipe alterations took place.

The most recently performed Technical Staff Fire Protection Procedure (DFPP) 4175-2, Operating Fire Stop/Break Surveillance, failed to identify the drain line penetration. The fire barrier location drawings, which were first issued in 1985 following a detailed fire barrier survey, also failed to show the penetration. The DFPP 4175-2 surveillance, which is performed on an 18 month cycle, includes instructions to inspect Appendix R wall and floor fire barriers for evidence of new penetrations or breaches. If an unrated penetration seal or breach in an Appendix R fire barrier is identified, the Operations Department Shift Supervisor is to be notified to implement immediate corrective actions. The penetration would then be documented in the surveillance procedure, and in the fire barrier location drawings. It is believed that performance of the penetration surveillance was hampered due to the continuing maintenance work in the areas on either side of the wall. The surveillance technicians's line of sight was most likely obscured or obstructed in each case while inspecting the third floor Unit 2/3 Reactor Building wall, thus preventing detection of the drain line penetration.

The Mechanical Maintenance Supervisor and the crew performing the work under the blanket work request stated that they were unaware that the wall was a fire rated barrier, or that the open penetration was in violation of the Station's Administrative Technical Requirements. Therefore, the root cause of this event was attributed to a management deficiency. Procedure deficiencies were also contributing factors, as described above.

D. SAFETY ANALYSIS OF EVENT:

In the event of severe fire in fire area RB2-II (refer to Figure 1), Dresden Safe Shutdown Procedure (DSSP) 100-B1, Hot Shutdown Procedure Path B1, would be used to achieve hot shutdown for Unit 2. Similarly, DSSP 100-A1, Hot Shutdown Procedure Path A1, would be used for a fire in area RB3-II for hot shutdown of Unit 3. Each procedure requires the use of each Unit's Isolation Condenser [BL], the Unit 2/3 Diesel Generator [KK], and the opposite Unit's electrical distribution system. A study of the Safe Shutdown Analysis report revealed that 125 VDC distribution panel 3 [EJ] and 480 V Motor Control Center (MCC) 38 [ED], equipment necessary for hot shutdown of Unit 2, are located directly opposite of the open penetration in Unit 3 fire zone 1.1.1.4 (see Figure 1). Also, 125 VDC Distribution Panel 2 [EJ] and 480 V MCC 28 [ED], are located opposite the penetration in Unit 2 fire zone 1.1.2.4. Thus, it is postulated that the hot shutdown path for each unit could be impaired if a fire were to breach the Reactor Building common wall fire barrier.

FACILITY NAME (1)	BUCKET NUMBER (2)	LER NUMBER (6)				Page (3)		
		Year	Sequential Number	Revision Number				
Dresden Nuclear Power Station	0 5 0 0 0 2 3 7	8 9	- 0 3 0	- 0 0	0 4	OF	0 6	

TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]

The Unit 2 and Unit 3 Reactor Building common wall at floor elevation 570'-0" separates fire zone 1.1.1.4 which is a part of Unit 3 fire area RB3-II and fire zone 1.1.2.4 which is a part of Unit 2 fire area RB2-II. The wall is a minimum 2'-0" thick reinforced concrete and is rated as a three hour fire barrier. The maximum fire loading in either zone is 7460 BTU per square foot which is comprised chiefly of cable insulation located in electrical panels and cable trays. This combustible loading is rather low by comparison to the ASTM E119 Standard Time/Temperature Curve which defines a combustible load of 80,000 BTU per square foot for a one hour fire. The penetration is centered 12 inches off of the floor. The closest fixed combustibles in the vicinity of this opening is cabling in cable trays on either side of the opening located 30 feet away horizontally and 11 feet overhead. Any heat generated from a fire in these trays would be concentrated at the upper elevations which would make propagation of flames or heat through the opening extremely unlikely. The Safe Shutdown electrical distribution panels and MCCs have a minimum spatial separation of approximately 100 feet between units, and the Reactor Building common wall would still provide a substantial fire barrier. Both fire zones are monitored by ionization detection [IC] throughout, and are equipped with various fire water hose reels and hand held fire extinguishers. The detection system alarms both locally and in the control room. Any fire would be promptly detected, and the fire brigade would be quickly dispatched to extinguish the fire. Transient combustibles in the area are minimal, and are administratively controlled by Dresden Administrative Procedure (DAP) 3-3, Control of Transient Combustibles. Additionally, regular housekeeping inspections are performed in accordance with DAP 3-11, Station Material Condition and Housekeeping Program. Therefore, the safety significance of this event is considered to be minimal.

E. CORRECTIVE ACTIONS:

The immediate corrective actions were notification of Operations Department Shift Supervision, and the initiation of an hourly fire watch pursuant to DATR 3/4.1.6. The penetration was then sealed with a temporary fire seal in accordance with Dresden Fire Protection Procedure (DFPP) 4175-1, Fire Barrier Integrity and Maintenance. Once the temporary fire seal was inspected and approved, the fire watch was terminated. Contrary to DFPP 4175-1, however, a permanent seal was not installed within the prescribed seven days. Materials to make the repair were not made available in time to complete the repair. The Station Fire Marshall, at his discretion, permitted the seven day administrative limit to expire provided that the temporary barrier was intact, and that the permanent barrier was installed as soon as practicable. Mechanical Maintenance has installed the permanent seal under Work Request 88289 (237-200-89-16101).

Additional corrective actions include the following:

1. Dresden Fire Protection Procedure (DFPP) 4175-2, Operating Fire Stop/Break Surveillance, will be revised by the Technical Staff to include this fire seal on the surveillance checklist. Also, to aid in performing the next fire barrier surveillance, a Drawing Change Request (DCR) will be initiated to identify the fire seal location on fire barrier drawings F-88 sheets 1 and 2 (237-200-89-16102).
2. In order to make rated fire walls in the plant more easily identifiable, the Technical Staff system engineer will prepare a fire barrier reference guide including plan views of all the fire areas for use by all working departments. A revision to DAP 3-1, Fire Protection Program, will also be implemented to control preparation and updating of the reference guide (237-200-89-16103).
3. The Assistant Superintendent - Maintenance will issue a memo requiring work to be performed on any walls, ceilings or floors in the plant to be controlled by the Station Work Request Program in accordance with Dresden Administrative Procedure (DAP) 15-1 entitled "Work Requests" (237-200-89-16104).

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)		
		Year	///	Sequential Number	///	Revision Number				
Dresden Nuclear Power Station	0 5 0 0 0 2 3 7	8 9	-	0 3 0	-	0 0	0 5	OF	0 16	

TEXT Energy Industry Identification System (EIIIS) codes are identified in the text as [XX]

4. The Fire Marshall will provide the Training Department with training material on fire barriers (237-200-89-16105).
5. Training on fire barriers will be given to the Mechanical Maintenance Department during an upcoming continuing training session. A review of this event shall be included in the material to be presented (237-200-89-16106).
6. This event will be reviewed in a future tailgate meeting for all station personnel. A tailgate meeting topic on the proper handling of fire stops and fire breaks is already presented periodically for the benefit of all station personnel (237-200-89-16107).
7. This event will be reviewed with the Mechanical Maintenance Supervisor and Crew who were directly involved (237-200-89-16108).
8. A statement on the appropriate use of the Blanket Work Request system will be added to DAP 15-1 by the Maintenance Staff (237-200-89-16109).
9. The Station Fire Marshall will revise DFPP 4175-1 to clarify the process by which temporary seals may be approved for longer than seven days (237-200-89-16110).

F. PREVIOUS EVENTS:

<u>LER/Docket Numbers</u>	<u>Title</u>
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89-8/050249	Fire Damper Discovered Obstructed by Welding Equipment Due to Management Deficiency.
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This event involved the inadvertent obstruction of a fire damper in a fire rated wall. The cause of this event was determined to be management deficiency because Maintenance supervision failed to identify the ventilation opening as being part of a fire barrier. As a corrective action, the frames for fire rated ventilation openings which do not have connected duct work are to be painted red.

G. COMPONENT FAILURE DATA:

Since no component failures were associated with this event, this section is not applicable.

FACILITY NAME (1)

BUCKET NUMBER (2)

LER NUMBER (6)

Page (3)

Year	Sequential Number	Revision Number
89	030	00

Dresden Nuclear Power Station

0 | 5 | 0 | 0 | 0 | 2 | 3 | 17

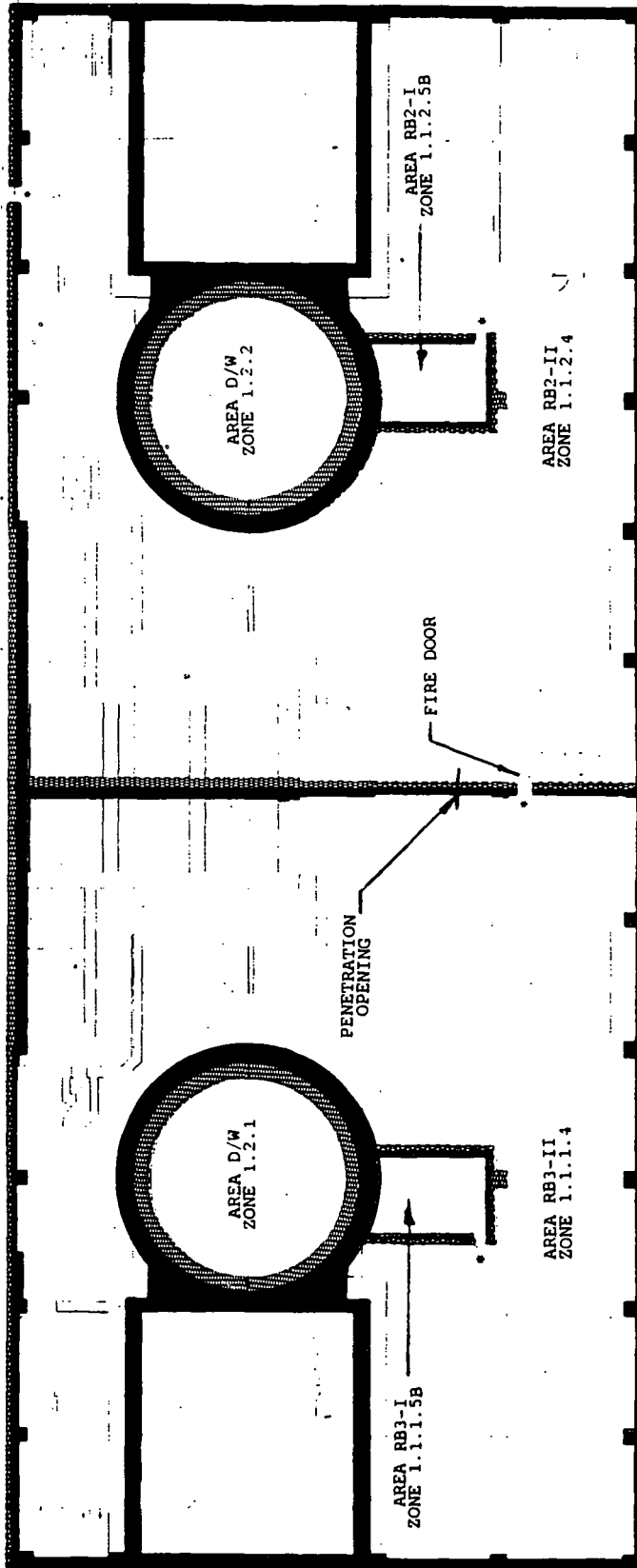
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TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX].



UNIT 2 AND UNIT 3 REACTOR BUILDING PLAN
ELEVATION 570'-0"

Figure 1