

LICENSEE EVENT REPORT (LER)

Facility Name (1) Dresden Nuclear Power Station, Unit 3 Docket Number (2) 0 | 5 | 0 | 0 | 0 | 2 | 4 | 9 Page (3) 1 | of | 0 | 4

TITLE (4) Flued Head Anchor Supports in Excess of FSAR Design Criteria Due to Design and Construction Deficiencies

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   3	2   3	8   8	8   8	0   0   3	0   1	0   7	15	8   8	N/A	0   5   0   0   0	
N/A											

OPERATING MODE (9) N

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

POWER LEVEL (10) 0   9   6	<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 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 checked="" 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: Michael Moy, Technical Staff Engineer (X-421) TELEPHONE NUMBER: AREA CODE 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

SUPPLEMENTAL REPORT EXPECTED (14)

Expected Submission Date (15) Month | Day | Year

Yes (If yes, complete EXPECTED SUBMISSION DATE)  NO

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

On March 23, 1988 at 1115 hours during Unit 3 operation at 96% power Station management was notified by the BWR Engineering Department (BWRED) that three primary containment pipe penetration flued head anchors (FHAs) did not meet Final Safety Analysis Report (FSAR) design requirements. This was discovered as a result of analysis of FHA data from FHA inspections performed in January of 1988. Two of the FHAs were determined to not meet FSAR pipe rupture design requirements due to a design deficiency when the anchors were redesigned during the 1986 Unit 3 recirculation piping replacement refuel outage. The third FHA was determined to be deficient due to a brace that was identified as missing due to an original construction deficiency.

Subsequently, at 1147 hours on May 4, 1988, with Unit 3 shutdown in the refuel mode, BWRED determined that two Low Pressure Coolant Injection (LPCI) Flued Heads did not meet FSAR criteria because of missing shims due to an original construction deficiency. Additionally, at 1405 hours on May 17, 1988, it was found that a Main Steam FHA guide structure did not meet FSAR allowable stress requirements because of missing pins and structural parts due to an original construction deficiency. Assessment of the FHAs determined that they were within operability limits and capable of performing their intended functions under all design basis events. For these reasons, this event was considered to be of minimal safety significance. Repairs to the FHAs will be completed during the Unit 3 1988 refuel outage. No previous occurrences of FHA deficiencies were discovered.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)		
		Year	///	Sequential Number	///	Revision Number				
Dresden Nuclear Station, Unit 3 TEXT	0   5   0   0   0   2   4   9	8   8	-	0   0   3	-	0   1	0   2	OF	0   4	

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:

Three primary containment [NH] pipe penetration flued head anchors failed to satisfy Final Safety Analysis Report (FSAR) design requirements.

A. CONDITIONS PRIOR TO EVENT:

Unit: 3	Event Date: March 23, 1988	Event Time: 1115 hours
Reactor Mode: N	Mode Name: Run	Power Level: 96%
Reactor Coolant System (RCS) Pressure: 1000 psig		

B. DESCRIPTION OF EVENT:

On March 23, 1988 at 1115 hours during normal Unit 3 operation at 2426 MW thermal power (96%) the Dresden Station Assistant Superintendent of Technical Services was notified by the Boiling Water Reactor Engineering Department (BWRED) that three primary containment pipe penetration flued head anchor (FHA) supports did not meet FSAR requirements. The three FHAs however did meet operability design requirements as determined by BWRED. The three affected flued pipe penetrations are penetration X-113 for Reactor Water Cleanup (RWCU) [CE] supply line 3-1201-10-A, penetration X-108A for Isolation Condenser [BL] steam supply line 3-1302-14-A, and penetration X-109A for Isolation Condenser condensate return line 3-1303-12-A.

The deficiencies of the three FHAs were discovered as a result of analysis of FHA inspection data. These inspections were performed in January of 1988 by BWRED personnel and Nuclear Regulatory Commission inspectors.

Subsequently, at 1147 hours on May 4, 1988, with Unit 3 shutdown in the refuel mode, Station management was notified by BWRED personnel that two Low Pressure Coolant Injection (LPCI) [B0] primary containment penetration flued heads were in excess of FSAR design criteria because of missing shims. These flued heads are located at primary containment penetrations X-116A and X-116B. This was discovered upon completion of engineering analysis of inspection data from an April, 1988 inspection of LPCI piping flued head components.

At 1405 hours on May 17, 1988, with Unit 3 shutdown in the refuel mode, Station management was notified by BWRED personnel that a Main Steam [SB] piping flued head guide structure did not meet FSAR allowable stress requirements because of missing pins and structural parts. The guide structure, which supports FHAs at main steam penetrations X-105A, B, C and D, met operability requirements as determined by BWRED. This was discovered upon completion of engineering analysis of inspection data from a May 6, 1988 inspection of feedwater and main steam piping flued head components. This inspection program, as described in section E, was implemented following discovery of the RWCU and Isolation Condenser FHA discrepancies.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)		
		Year	Sequential Number	Revision Number						
Dresden Nuclear Power Station, Unit 3	0   5   0   0   0   2   4   9	8   8	-   0   0   3	-	0   1	0   3	0   F	0   4		

TEXT

C. APPARENT CAUSE OF EVENT:

The FHAs for penetration X-109A (isolation condenser condensate return) and penetration X-113 (reactor water cleanup supply) were determined to not meet FSAR pipe rupture design requirements due to a design deficiency. During the 1985-1986 Dresden Unit 3 recirculation [AD] piping replacement (RPR) refueling outage these two FHAs were redesigned and replaced. However, the new design only considered seismic load requirements and did not consider pipe rupture load requirements.

The FHA for penetration X-108A (isolation condenser steam supply) was not replaced during the Unit 3 RPR outage. However, during the FHA walkdown of January 1988 it was determined to be deficient due to a brace that was identified to be missing. The missing brace was determined to be an original construction deficiency.

The main steam guide structure at penetrations X-105A, X-105B, X-105C, and X-105D were determined to be deficient due to a missing pin and inadequate bracing resulting from an original construction deficiency. The LPCI primary containment flued heads at X-116A and X-116B were determined to be deficient due to missing shims resulting from an original construction deficiency.

D. SAFETY ANALYSIS OF EVENT:

A preliminary assessment of the FHAs identified in this report was performed by the BWRED and presented to the Nuclear Regulatory Commission by the Commonwealth Edison Nuclear Licensing Staff. The preliminary assessment determined that due to the redundancy of these structures and the margin inherent in the original design of these FHAs, the anchors were within operability limits and would perform their intended functions. No Technical Specification requirements were violated as a result of the FHAs' deficiencies. For the above reasons, this event was determined to be of minimal safety significance.

E. CORRECTIVE ACTIONS:

Final evaluation of the FHAs' compliance with FSAR requirements determined that repairs would be necessary for all the deficient FHA components. Sargent and Lundy architectural engineers performed the evaluations and subsequently issued Engineering Change Notices (ECNs) D-88S-09, D-88S-10, D-88S-11, D-88S-23, and D-88S-21 for penetrations X-113, X-108A, X-109A, X-105A, X-105B, X-150C, X-105D, X-116A, and X-116B respectively. The repairs as stated in these five ECNs will be performed under modification M12-3-88-20 and Work Requests 75448 and 75749, scheduled for completion during the Unit 3 1988 refueling outage (249-200-88-022-001).

There are a total of 32 individual FHAs at Dresden Station (16 per unit). To date, all Unit 3 FHAs have been evaluated with only the FHAs identified in this Licensee Event Report being determined as deficient. Evaluation of the remaining Unit 2 FHAs, as well as any further walkdowns, will also be performed (249-200-88-022-002). If any additional FHA deficiencies are discovered, they will be reported as a supplement to this Licensee Event Report (249-200-88-022-003).

It is believed that the current level of inspection would help prevent a recurrence of this type under the present modification program. Dresden Administrative Procedure (DAP) 5-1, Plant Modification Program, was revised on December 4, 1986 to require the performance of a final field walkdown of the entire modification by the station cognizant engineer, using the installation documents as a reference. Furthermore, the present program requires that all modifications involving safety-related load bearing supports must be dimensionally verified.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Dresden Nuclear Power Station, Unit 3	DOCKET NUMBER (2) 0   5   0   0   0   2   4   9	LER NUMBER (6)			Page (3)		
		Year 8   8	Sequential Number -   0   0   3	Revision Number -   0   1			
TEXT							0   4   0   4

F. PREVIOUS EVENTS:

<u>LER Number/Docket</u>	<u>Title</u>
87-003/50-237	Primary Containment Structural Steel Connections Outside FSAR Design Criteria Due to Apparent Original Construction Oversight
87-017/50-237	Embedment Plate for Support Number M-3210-03 in Excess of FSAR Design Limits Due to Apparent Original Construction Oversight

G. COMPONENT FAILURE DATA:

There were no component failures reported in this Licensee Event Report, therefore this section is not applicable. The work being performed under modification M12-3-88-20 and Work Requests 75448 and 75749 is considered as repairs since the function of FHAs as intended in the original design is not being changed.



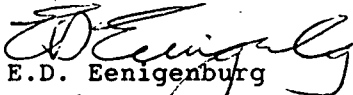
**Commonwealth Edison**  
Dresden Nuclear Power Station  
R.R. #1  
Morris, Illinois 60450  
Telephone 815/942-2920

July 15, 1988

EDE LTR #88-466

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

Licensee Event Report #88-003-01, Docket #050249 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(ii)(B). This revised report is being submitted to report the determination that two Low Pressure Coolant Injection Primary Containment Flued Heads and a Main Steam Flued Head guide structure did not meet FSAR allowable stress requirements. This was discovered by engineering personnel performing analysis of flued head inspection data. The Flued Head Inspection Program, as described in the original report, was implemented following discovery of three flued head anchors associated with Reactor Water Cleanup and Isolation Condenser piping in excess of FSAR requirements.

  
E.D. Eenigenburg  
Station Manager  
Dresden Nuclear Power Station

EDE/ade

Enclosure

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

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