



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

October 12, 1989

EDE LTR #89-771

U.S. Nuclear Regulatory Commission  
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Licensee Event Report #89-025-0, Docket #050237 is being submitted as required by Technical Specification 6.6, NUREG 1022, and 10 CFR 50.73(a)(2)(iv).

*L. J. Homer for*

E. D. Eenigenburg  
Station Manager  
Dresden Nuclear Power Station

EDE/rme

Enclosure

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

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8910200008 891012  
PDR. ABGCK 09000137  
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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 4

Title (4) Inadvertent Automatic Isolation of the High Pressure Coolant Injection System Due to Design 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	9	15	8	9	0	2	15	0	0	1	0	1	2	8	9	None	

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	9	<input type="checkbox"/>	20.402(b)	<input type="checkbox"/>	20.405(c)	<input checked="" type="checkbox"/>	X	<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"/>		<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"/>		<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"/>		<input type="checkbox"/>	50.73(a)(2)(viii)(A)	<input type="checkbox"/>	
				<input type="checkbox"/>	20.405(a)(1)(iv)	<input type="checkbox"/>	50.73(a)(2)(ii)	<input type="checkbox"/>		<input type="checkbox"/>	50.73(a)(2)(viii)(B)	<input type="checkbox"/>	
				<input type="checkbox"/>	20.405(a)(1)(v)	<input type="checkbox"/>	50.73(a)(2)(iii)	<input type="checkbox"/>		<input type="checkbox"/>	50.73(a)(2)(x)	<input type="checkbox"/>	

LICENSEE CONTACT FOR THIS LER (12)

Name	Jerry Lizalek, Technical Staff System Engineer	Ext.	2421	TELEPHONE NUMBER	AREA CODE	8	1	5	9	4	2	-	2	9	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)	Month	Day	Year
<input checked="" type="checkbox"/> Yes (If yes, complete EXPECTED SUBMISSION DATE)			
<input type="checkbox"/> NO			

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

On September 15, 1989, at 2050 hours during normal Unit 2 Operation at 99% rated core thermal power, an unplanned Primary Containment Group IV isolation occurred during replacement of a High Pressure Coolant Injection (HPCI) system low reactor pressure isolation Master Trip Unit (MTU) 2391-01A. The Group IV isolation signal resulted in automatic closure of the HPCI steam supply isolation valves. To place the HPCI system in a conservative condition during replacement of the MTU, redundant MTU 2391-01B was previously manually tripped to initiate a Channel "A" half Group IV isolation signal. As MTU 2391-01A was being removed from Analog Trip System (ATS) panel 2202-73A, the unplanned Group IV isolation occurred due to inadvertent movement of an adjacent MTU. The root cause of this event was determined to be a design induced deficiency within the ATS panel such that removal of adjacent MTUs results in spurious trips. The safety significance of this event was considered to be minimal since the Group IV isolation signal was reset within four minutes, and since the Group IV isolation logic responded properly when challenged. In addition, all other Emergency Core Cooling Systems remained operable throughout this event. As corrective actions, procedures for replacement of HPCI isolation MTUs which are sensitive to this problem will be revised to include appropriate precautionary statements. Precautionary signs will be posted on all the Unit 2 and Unit 3 ATS panels. This is the first occurrence of this type.



FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			Page (3)	
		Year	Sequential Number	Revision Number		
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TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]

C. APPARENT CAUSE OF EVENT:

This event is being submitted in accordance with 10 CFR 50.73(a)(2)(iv), which requires the reporting of any event or condition that resulted in manual or automatic actuation of an Engineered Safety Feature (ESF).

The root cause of this event has been determined to be a design deficiency within ATS panel 2203-73A such that inadvertent tripping of MTU 2391-01C occurred due to vibration as MTU 2391-01A was being removed. MTU 2391-01A and MTU 2391-01C are physically located adjacent to each other within ATS panel 2202-73A. MTU 2391-01A is secured within the panel by means of a frictional fit. As the IMD mechanic removed MTU 2391-01A, the breakaway force required to overcome the frictional fit resulted in the vibration and spurious trip of MTU 2391-01C. Procedure deficiency was a contributing factor to this event as no procedural guidance was provided to the IMD mechanic regarding the vibration sensitivity of the MTUs.

D. SAFETY ANALYSIS OF EVENT:

The HPCI system reactor low pressure isolation is provided to protect the HPCI turbine from damage due to overheating as a result of the HPCI turbine stalling on low available energy as reactor pressure decreases below a design setpoint of 80 psig. Reactor pressure remained at the normal power operation value throughout this event. Also, the Group IV isolation logic did function properly when challenged by the spurious signal. The Automatic Depressurization System [SB], Isolation Condenser System [BL], and both low pressure Emergency Core Cooling Systems [BM, B0] were also available to provide reactor pressure and inventory control during any postulated design basis accident.

For the above reasons, and since the HPCI system isolation was reset only four minutes after initiation, the safety significance of this event was considered to be minimal.

E. CORRECTIVE ACTIONS:

After confirming that the unplanned HPCI system isolation was a result of work being performed on the MTU, the Primary Containment Group IV isolation signal was immediately reset and the HPCI system was restored to normal standby status at 2054 hours on September 15, 1989. DIS 2300-3 was also being performed as part of the MTU replacement. Therefore, both DIS 2300-3 and the appropriate work instructions of Work Request 87310 were performed a second time in an effort to determine the root cause of this event. However, both were performed without incident.

To prevent recurrence of this event, a review of HPCI system related Dresden Instrument Surveillance procedures was performed to determine which surveillances require removal of MTUs.

FACILITY NAME (1) Dresden Nuclear Power Station	UNIT NUMBER (2) 0   5   0   0   0   2   3   7	LER NUMBER						Page (3)		
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TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]

The review concluded that both DIS 2300-10, HPCI Steam Line Flow Isolation Differential Pressure Transmitters 2352 and 2353 Calibration and Maintenance Inspection, and DIS 2300-11, HPCI System Isolation - Reactor Pressure Transmitter Calibration and Maintenance Inspection, also require MTU removal if the gross failure trip setpoint requires adjustment. However, the MTUs for differential pressure transmitters 2352 and 2353 are located on separate panels and removal of one MTU will not create a disturbance to each other. DIS 2300-11 requires removal of MTUs located adjacent to each other. Therefore, appropriate precautionary statements will be added by the IMD to DIS 2300-11 requiring care when removing these MTUs, and prior notification of the Operations Shift Supervisor that the MTU replacement activity may result in an isolation signal (237-200-89-1330!).

Additionally, the IMD will post signs on all the Unit 2 and Unit 3 ATS panels warning that adjacent MTUs are vibration sensitive and require Shift Supervisor notification prior to MTU removal (237-200-89-13302). Review of maintenance and system history records indicates that this was an isolated event. Additionally, MTU removal is relatively rare due to high reliability of these components. Therefore, modification of the MTU mounting configuration is not appropriate at this time.

F. PREVIOUS OCCURRENCES:

A review of previous Licensee Event Reports did not reveal any previous similar events resulting in a spurious isolation of the HPCI system.

G. COMPONENT FAILURE DATA:

There was no component failure during this event; therefore, this section is not applicable.