

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Dresden Nuclear Power Station, Unit 2	DOCKET NUMBER (2) 05000237	PAGE (3) 1 of 4
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TITLE (4)
Unexpected High Pressure Coolant Injection System Steam Supply Isolation During Testing

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 NAME	DOCKET NUMBER
12	22	97	97	018	00	01	21	98	N/A	05000
									N/A	05000

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more) (11)									
POWER LEVEL (10) 099	20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)						
	20.2203(a)(2)(i)	20.2203(a)(3)(i)	50.73(a)(2)(ii)	50.73(a)(2)(x)						
	20.405(a)(1)(ii)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71						
	20.2203(a)(2)(ii)	20.2203(a)(4)	X	50.73(a)(2)(iv)	OTHER					
	20.2203(a)(2)(iii)	50.36(c)(1)		50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A					
	20.2203(a)(2)(iv)	50.36(c)(2)		50.73(a)(2)(vii)						

LICENSEE CONTACT FOR THIS LER (12)

NAME G. Tietz, Safety System Lead	TELEPHONE NUMBER (Include Area Code) (815) 942-2920 ext 2224
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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)		
X	YES (If yes, complete EXPECTED SUBMISSION DATE).		NO	MONTH	DAY	YEAR
				05	29	98

ABSTRACT (Limit to 1400 spaces, i. e., approximately 15 single-spaced typewritten lines) (16)

On December 22, 1997, at approximately 0303 hours, an unexpected Group IV (High Pressure Coolant Injection (HPCI)) Primary Containment Isolation signal was received while testing the HPCI Steam Line Low Pressure Isolation circuitry. Subsequent to the occurrence, a troubleshooting effort was initiated. However, no equipment faults were identified. The root cause of the event is currently under investigation. Two relays which were suspected to have caused the isolation were replaced and successfully tested. A supplemental report will be submitted upon completion of component failure analysis. The safety significance of this event is minimal due to other safety systems being available for operation. This LER is being submitted pursuant to 10 CFR 50.73(a)(2)(iv) which requires the reporting of any event or condition that results in a manual or automatic actuation of any Engineered Safety Feature.

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		97	018	00	

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

PLANT AND SYSTEM IDENTIFICATION:

General Electric - Boiling Water Reactor - 2527 MWt rated core thermal power

Energy Industry Identification System (EIIIS) Codes are identified in the text as [XX] and are obtained from IEEE Standard 805-1984, IEEE Recommended Practice for System Identification in Nuclear Power Plants and Related Facilities.

EVENT IDENTIFICATION:

Unexpected High Pressure Coolant Injection (HPCI) [BJ] System Steam Supply Isolation During Testing

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 2	Event Date: 12-22-97	Event Time: 0303
Reactor Mode: 1	Mode Name: Run	Power Level: 099
Reactor Coolant System Pressure: 1000 psig		

B. DESCRIPTION OF EVENT:

This LER is being submitted pursuant to 10 CFR 50.73(a)(2)(iv) which requires the reporting of any event or condition that results in a manual or automatic actuation of any Engineered Safety Feature.

On December 22, 1997, while performing Dresden Instrument Surveillance (DIS) 2300-03, High Pressure Coolant Injection Low Reactor Pressure Isolation Channel Functional Test, for Master Trip Unit (MTU) 2-2391-01B and trip relay 2-2391-02B, an unexpected HPCI Isolation (Group IV Primary Containment Isolation [JM]) signal was received. The HPCI steam supply isolation valves, MO 2-2301-4 and MO 2-2301-5, closed as designed. Following the isolation, HPCI was declared inoperable.

On December 22, 1997, at approximately 0100, a prejob brief was conducted in preparation for the performance of DIS 2300-03 for MTUs 2-2391-01B and 3-2391-01B. At approximately 0210, the surveillance was begun for MTU 3-2391-01B (Unit 3). The Unit 3 surveillance was completed satisfactorily at approximately 0225.

At approximately 0300, the surveillance was started for MTU 2-2391-01B (Unit 2). At approximately 0303, the Instrument Maintenance (IM) Control Systems Technician (CST) inserted a trip signal to MTU 2-2391-01B. An IM B Mechanic had been stationed in the Auxiliary Electrical Equipment Room to monitor relay contact position using a Fluke Digital Multimeter (DMM). Upon receipt of the trip signal, the IM B mechanic noted that the DMM indication increased as expected, but also noted that other relays chattered at the same time. The mechanic was unable to identify the relay or relays that had actuated during the trip.

The initial signal occurred at 0303:27. At 0303:39, approximately 12 seconds after the initial signal was received, the isolation signal reset and was received again at 0303:44. The signal reset at 0303:46 and immediately re-tripped. Finally, the signal cleared at 0303:49. At 0304:54, the Analog Trip System was returned to normal (times obtained from the process computer). HPCI was declared inoperable and the actions for Technical Specification 3.2.A.3 were entered at the time of the initial occurrence at 0303 hours.

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Two relays were suspected to have caused the isolation. The relays were replaced and satisfactorily tested on December 24, 1997. Due to a Unit 2 automatic shutdown that occurred on December 23, 1997, which was a result of an unrelated occurrence, the HPCI was no longer required to be operable at 1749 hours on December 23, 1997 when reactor pressure was reduced to less than 150 psig.

No other systems, components or structures were identified which contributed to the isolation event.

C. CAUSE OF EVENT:

The cause of this event is unknown at this time.

At approximately 1240 hours, on December 22, 1997, troubleshooting of the HPCI isolation circuit began per work request (WR) 970135027-01. No equipment faults were identified.

Interviews with the IM technicians involved in the surveillance indicated that the surveillance had been performed in strict accordance with the procedure.

As a precautionary step, MTU 2-2391-01C and 2-2391-01D trip relays were replaced. The relays which were removed were delivered to Materials Engineering for failure analysis.

D. SAFETY ANALYSIS

The HPCI subsystem is designed to pump water into the reactor vessel under those LOCA conditions which do not result in rapid depressurization of the reactor pressure vessel. The loss of coolant might be due to a loss of reactor feedwater or to a small line break which does not cause immediate depressurization of the reactor vessel.

There were no actual isolation conditions at the time of the Group IV isolation. Reactor pressure did not deviate from its steady state condition. Additionally, there were no indications of a high steam flow or high area temperature conditions which would have resulted in an isolation signal of the HPCI system during this event. The safety consequences of a degraded HPCI system were minimal at the time of the event due to the availability of the automatic depressurization system (ADS). The ADS is an ECCS subsystem which is employed as a backup to the HPCI subsystem to depressurize the reactor pressure vessel for small area breaks. In the event that HPCI is not effective, the ADS reduces pressure by blowdown through automatic opening of the relief valves to vent steam to the suppression pool. For small breaks, the vessel is depressurized in sufficient time to allow low pressure ECCS system to inject and provide adequate core cooling.

E. CORRECTIVE ACTIONS:

The immediate corrective action was to declare the Unit 2 HPCI system inoperable and enter an LCO actions in accordance with the Plant's Technical Specifications. (Completed)

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The suspect relays were replaced and successfully tested in accordance with the Instrument Department surveillance prior to declaring the system operable. (Completed)

Upon completion of the root cause analysis, a supplemental report will be submitted.
(237-180-97-01801)

F. PREVIOUS OCCURRENCES:

None.

G. COMPONENT FAILURE DATA:

None.