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Dresden Nuclear Power Station
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December 9, 1991

CWS LTR #91-042

U.S. Nuclear Regulatory Commission
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Licensee Event Report 91-040, Docket 050237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(iv).

L. F. Merver for

Charles W. Schroeder
Station Manager
Dresden Nuclear Power Station

CWS/dwh

Enclosure

cc: A. Bert Davis, Regional Administrator, Region III
NRC Resident Inspector's Office
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 4
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Title (4) **Isolation Condenser Group V Isolation Due to Spurious Flow Spikes**

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)
11	11	99	1991	040	00	11	20	99	N/A	
									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 0 0	<input type="checkbox"/> 20.402(b) <input type="checkbox"/> 20.405(a)(1)(i) <input type="checkbox"/> 20.405(a)(1)(ii) <input type="checkbox"/> 20.405(a)(1)(iii) <input type="checkbox"/> 20.405(a)(1)(iv) <input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 20.405(c) <input type="checkbox"/> 50.36(c)(1) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.73(a)(2)(i) <input type="checkbox"/> 50.73(a)(2)(ii) <input type="checkbox"/> 50.73(a)(2)(iii)
	<input checked="" type="checkbox"/> 50.73(a)(2)(iv) <input type="checkbox"/> 50.73(a)(2)(v) <input type="checkbox"/> 50.73(a)(2)(vii) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(B) <input type="checkbox"/> 50.73(a)(2)(x)	<input type="checkbox"/> 73.71(b) <input type="checkbox"/> 73.71(c) Other (Specify in Abstract below and in Text)

LICENSEE CONTACT FOR THIS LER (12)

Name Mark Blakemore, Technical Staff System Engineer	Ext. 2421	TELEPHONE NUMBER AREA CODE 8 1 5 9 4 2 -12 9 10
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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)

<input type="checkbox"/> Yes (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	Expected Submission Date (15) Month Day Year
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On November 19, 1991, at 2355 hours with Unit 2 in cold shutdown with all control rods inserted, an unplanned Primary Containment Group V Isolation occurred, causing closure of the Isolation Condenser isolation valves. The isolation signal was reset after verification that the signal was spurious. In addition, following the event, all of the Group V initiating instrumentation setpoints were verified to be within their specified tolerances. The probable cause is differential pressure flow spikes in the Isolation Condenser condensate return line while starting the 2B Shutdown Cooling pump. Isolation Condenser operability is not required whenever reactor pressure is less than 90 psig; also, had this event occurred under power operation, the High Pressure Coolant Injection or Automatic Depressurization systems could have been utilized for reactor pressure control. Therefore, the safety significance of this event is minimal. A previous unplanned Group V Isolation was reported by LER 91-006/050237.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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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:

Isolation Condenser [BL] Group V Isolation [JM] Due to Spurious Flow Spikes

A. CONDITIONS PRIOR TO EVENT:

Unit: 2 Event Date: 11/19/91 Event Time: 2355 Hours

Reactor Mode: N Mode Name: Shutdown Power Level: 0%

Reactor Coolant System (RCS) Pressure: 0 psig

B. DESCRIPTION OF EVENT:

On November 19, 1991, at 2355 hours, with Unit 2 in cold shutdown, the 2A and 2B Shutdown Cooling [B0] pumps tripped and an unplanned Primary Containment Group V Isolation occurred while starting the 2B Shutdown Cooling pump. Group V Primary Containment Isolation signals are generated by differential pressure switches which monitor differential pressures across flow elements in the Isolation Condenser steam supply and condensate return lines. The trip setpoints correspond to the differential pressures across the flow elements at three times normal flow. A valid three times normal flow condition would be indicative of a line break in the Isolation Condenser System. All of the Isolation Condenser isolation valves responded automatically as expected when challenged by the spurious isolation signal. As an immediate corrective action the Primary Containment Group V Isolation signal was reset after verification that the signal was spurious and the 2A Shutdown Cooling pump was restarted. An attempt was made to duplicate the event eight hours later; however, and the 2A and 2B Shutdown Cooling pumps did not trip and a Group V Isolation did not recur. The Instrument Maintenance Department calibrated the Isolation Condenser High Condensate Flow Instrumentation and backfilled the instrument line. An investigation of the Isolation Condenser System and associated instrumentation did not reveal any abnormalities.

A review of system history records indicates that following a July, 1987 event involving a spurious Dresden Unit 3 Group V Isolation, Modification M12-3-87-37 was implemented to install a two second time delay in the Unit 3 Group V isolation circuitry. It should be noted that this design enhancement was specific to Unit 3 because it utilizes an annubar type flow instrument, which was determined to be more susceptible to spurious trips. The Unit 2 Group V instrumentation has not been as sensitive to this type of spurious tripping; however, on March 13, 1991 at 0615 hours, with Unit 2 shut down, an unplanned Primary Containment Group V Isolation occurred while opening Isolation Condenser valves in preparation for unit startup. Investigation was performed into the possibility of vibration transmitted through the instrument rack as a potential cause, and the instrumentation was also calibration checked at that time.

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C. APPARENT CAUSE OF EVENT:

This report is being submitted in accordance with 10CFR50.73(a)(2)(iv), which requires the reporting of any event or condition that results in the unplanned manual or automatic actuation of any Engineered Safety Feature (ESF).

The Instrument Maintenance Department took prompt action to attempt to determine the root cause of the event by performing Dresden Instrument Surveillance (DIS) 1300-2, Isolation Condenser Steam/Condensate Line High Flow Calibration. The test was successful and no problems were noted. These switches are functionally tested and calibrated monthly per DIS 1300-2; no adverse trends were observed in the calibration records. The probable cause of the unplanned Group V Isolation is differential pressure flow spikes in the Isolation Condenser Condensate return line while starting the 2B Shutdown Cooling pump. The Isolation Condenser Condensate return interfaces with the Shutdown Cooling System upon its return to the 'A' Reactor Recirculation [AD] loop. Upon further investigation, Operations personnel concluded that the cause of the Shutdown Cooling A and B pumps tripping was inadequate venting of the system prior to returning the pumps to service. At the time of the event, no personnel were identified as having inadvertently jarred the instrument rack.

D. SAFETY ANALYSIS OF EVENT:

The purpose of the Isolation Condenser is to control reactor pressure and/or remove decay heat from the reactor without loss of inventory during periods when the normal heat sink is unavailable. The Isolation Condenser can be manually or automatically initiated. An automatic initiation occurs when reactor pressure is sustained at greater than or equal to 1070 psig for 15 seconds. The Group V Primary Containment Isolation occurred with Unit 2 in a cold shutdown condition with the reactor depressurized. Technical Specification 3.5.E.1 allows the Isolation Condenser to be inoperable whenever reactor pressure is less than 90 psig. Had this event occurred during reactor operation, the consequences of a postulated accident would have been mitigated by the High Pressure Coolant Injection [BJ] System or the Automatic Depressurization [SB] System in conjunction with the Low Pressure Coolant Injection [BO] and Core Spray [BM] Systems; therefore, the safety significance of the unplanned Group V Isolation is considered minimal.

As described previously, two Shutdown Cooling pumps tripped during this event. Trips of the Shutdown Cooling pumps, when serving the purpose of maintaining coolant temperature, could result in an increase in coolant temperature if not restarted. Technical Specification section 3.7.2 states that for conditions when the reactor water temperature is at or below the boiling point, primary containment integrity must be maintained. During this occurrence primary containment was intact. At no time did reactor water temperature exceed 212 degrees F. For this reason, the trip of the 2A and 2B Shutdown Cooling Pumps also had no safety significance.

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E. CORRECTIVE ACTIONS:

The immediate corrective action was to investigate the system parameters prior to resetting the isolation signal. Testing and instrumentation checks were also performed. The System Engineer and Nuclear Engineering Department are continuing to investigate design improvements to the Group V Isolation instrumentation (237-200-91-21001).

F. PREVIOUS OCCURENCES:

LER/Docket Numbers Title

91-006/050237 Unplanned Primary Containment Group V Isolation Due to Unknown Cause

On March 13, 1991 at 0615 hours with Unit 2 in the refuel mode with all control rods fully inserted, an unplanned Primary Containment Group V Isolation occurred, causing spurious closure of the Isolation Condenser isolation valves. The isolation signal was reset after verification that the signal was spurious. Operations personnel were also dispatched to the area of the differential pressure instrumentation which initiates the Isolation. No personnel were identified as having inadvertently jarred the instruments in question; subsequent vibration testing at the instrument rack also could not duplicate the event. There was no affect on plant operation because Isolation Condenser operability was not required under the current plant conditions; the Primary Containment Group V circuitry functioned properly when challenged by the spurious signal.

G. COMPONENT FAILURE DATA:

This section is not applicable.