



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

April 5, 1991

EDE LTR #91-221

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

Licensee Event Report #91-006-0, Docket #050237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(iv).

E. D. Eenigenburg
Station Manager
Dresden Nuclear Power Station

EDE/ade

Enclosure

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

(ZDVR/185)

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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 5 10 10 10 12 13 17 Page (3) 1 of 0 4

Title (4) Unplanned Primary Containment Group V Isolation Due to Unknown Cause

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	13	9	1	9	1	0	4	0	5	10	10	10	1	1	1	1
									N/A								
									N/A								

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)														
POWER LEVEL (10)		20.402(b)			20.405(c)			X 50.73(a)(2)(iv)			73.71(b)					
0 0 0		20.405(a)(1)(i)			50.36(c)(1)			50.73(a)(2)(v)			73.71(c)					
		20.405(a)(1)(ii)			50.36(c)(2)			50.73(a)(2)(vii)			Other (Specify in Abstract below and in Text)					
		20.405(a)(1)(iii)			50.73(a)(2)(i)			50.73(a)(2)(viii)(A)								
		20.405(a)(1)(iv)			50.73(a)(2)(ii)			50.73(a)(2)(viii)(B)								
		20.405(a)(1)(v)			50.73(a)(2)(iii)			50.73(a)(2)(x)								

LICENSEE CONTACT FOR THIS LER (12)

Name							TELEPHONE NUMBER						
Mark Blakemore, Technical Staff System Engineer							Ext. 2421						
							AREA CODE						
							8 1 5 9 4 2 1 - 2 19 12 10						

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	
X	B	L	F	S							
			I	2	10	4				Y	

SUPPLEMENTAL REPORT EXPECTED (14)

[Yes (If yes, complete EXPECTED SUBMISSION DATE)]							Expected Submission Date (15)						
X							NO						

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

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. 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. A previous similar event was reported by LER 90-007/050237.

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:

Unplanned Primary Containment Group V Isolation [JM]. Due to Unknown Cause.

A. CONDITIONS PRIOR TO EVENT:

Unit: 2

Event Date: March 13, 1991

Event Time: 0615 Hours

Reactor Mode: N

Mode Name: Refuel

Power Level: 0%

Reactor Coolant System (RCS) Pressure: 0 psig

B. DESCRIPTION OF EVENT:

On March 13, 1991 at 0615 hours, with Unit 2 shut down, a spurious Primary Containment Group V Isolation occurred while opening the inboard Isolation Condenser [BL] condensate return line isolation valve in preparation for reactor startup. On receipt of Control Room Panel 902-5 alarms H-2, Isolation Condenser Line Break (Group V Isolation), and B-4, Isolation Condenser Valves Off Normal on the 902-5 panel, the Nuclear Station Operator (NSO) observed that the Isolation Condenser Motor Operated (MO) Valves 2-1301-1, 2, and 4 and Air Operated (AO) 2-1301-17 and 20 closed as designed upon occurrence of high Isolation Condenser condensate return line flow or steam line high flow conditions. The reactor was in the refuel mode with all control rods [AA] fully inserted. As an immediate corrective action the Primary Containment Group V Isolation signal was reset after verification that the signal was spurious. These switches are located in the Reactor Building on the ground elevation near the Primary Containment equipment hatch entrance. No personnel were identified as having inadvertently jarred the instruments in question. No other safety systems or components were inoperable at the time of this event which could have contributed to the event.

C. APPARENT CAUSE OF EVENT:

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

The Instrument Maintenance Department (IMD) 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. Plant parameters were reviewed, and none indicated any system changes which would be expected to cause this type of event. Therefore, the cause of this event could not be determined. A maintenance history review indicates that a spurious Unit 2 Primary Containment Group V Isolation previously occurred on August 2, 1990 at 0741 hours, and that one of the switches (2-1349A) contained in the Isolation logic had been replaced in 1986. The remaining switches (the Isolation Condenser steam supply and condensate return lines are each equipped with four Barton switches arranged in a one-out-of-two-twice logic) have not required corrective maintenance since that time. These switches are functionally tested and calibrated monthly per DIS 1300-2; no adverse trends were observed in the calibration records.

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D. SAFETY ANALYSIS OF EVENT:

The purpose of the Isolation Condenser is to control reactor pressure and/or remove decay heat from the reactor 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 Primary Containment Group V Isolation occurred with Unit 2 shut down at 0 psig reactor pressure. Technical Specification Table 3.5.E.2 allows the Isolation Condenser to be inoperable for up to seven days provided that all active components of the High Pressure Coolant Injection (HPCI) [BJ] system remain operable. Since Unit 2 was in the refuel mode and reactor pressure was less than 90 psig, operability of the Isolation Condenser was not required. Had this event occurred at power, the consequences of a postulated accident could have been mitigated by the HPCI system or the Automatic Depressurization [SB] system in conjunction with the Low Pressure Coolant Injection [BO] and Core Spray [BM] systems.

Initiation of the Primary Containment Group V Isolation demonstrated proper operation of the Containment Isolation valves when challenged by the spurious signal. Therefore, the safety significance of this event was considered to be minimal.

E. CORRECTIVE ACTIONS:

The immediate corrective action was to investigate the system parameters prior to resetting the isolation signal. A visual observation was also made of the instrumentation in the plant to identify if any personnel or equipment in the area of the transmitters could have caused the spurious isolation. The IMD monitored the isolation instrumentation for approximately one week, and there were no abnormalities observed. A placard was placed on the instrument rack after the last spurious event, to caution against inadvertent jarring of the flow switches; this action was also taken on Unit 3.

Also, a test was performed after the last spurious event on Unit 2 to determine if the differential pressure switches on Instrument Rack 2202-28A had actuated due to vibration of the switch or the instrument rack, or if the switch had actuated due to someone bumping the switch. The instrument rack, switches and the floor were impacted with a calibrated force hammer and the response to these blows were observed on the output of the accelerometers. The force varied from 10 pounds force on the switch to 85 pounds force on the instrument rack to 130 pounds force on the floor. No resonant frequencies were observed which are close to the running frequency of any near by equipment which could be transmitted through the floor to the switch. All frequencies observed were low amplitude (500-1000 hertz) and well dampened, indicating that the rack is well isolated and structurally sound. Neither the switch nor the instrument rack showed any response when the floor was impacted. Based on this test, it is felt that the switch did not trip due to floor or instrument rack transmitted vibration.

The System Engineer and IMD are currently investigating further corrective actions, including the possibility of retaining a vendor service representative to inspect the switches and potential replacement of the switches with improved equipment less susceptible to spurious tripping (237-200-91-04801).

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F. PREVIOUS EVENTS:

LER/DVR Number Title

90-06/050237 Unplanned Primary Containment Group V Isolation Due to Procedure Deficiency

This event occurred as a result of installing an improper voltage valve position indication bulb. The bulb shorted and opened a power supply fuse, resulting in the Primary Containment Group V Isolation. Corrective actions included a procedure revision and improved administrative controls.

90-07/050237 Unplanned Primary Containment Group V Isolation Due to an Unknown Cause

On August 2, 1990 at 0741 hours with Unit 2 in cold shutdown during an unscheduled outage, an unplanned Primary Containment Group V Isolation occurred. No abnormalities were found with the circuitry and the Isolation signal was reset. No personnel were found or identified as being near the instrumentation that generates the Isolation signal. As stated previously, corrective actions included caution signs and vibration testing.

G. COMPONENT FAILURE DATA:

<u>Manufacturer</u>	<u>Nomenclature</u>	<u>Model Number</u>	<u>MFG Part Number</u>
Barton	Isolation Condenser high flow switches	278-DS664	N/A

An industry-wide NPRDS data search indicated no other similar events of this type.