



Commonwealth Edison

Dresden Nuclear Power Station

R.R. #1

Morris, Illinois 60450

Telephone 815/942-2920

June 5, 1989

EDE LTR #89-429

U.S. Nuclear Regulatory Commission

Document Control Desk

Washington, D.C. 20555

Licensee Event Report #89-003-0, Docket #050249 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(iv).

L. J. Mermer for

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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LICENSEE EVENT REPORT (LER)

Form Rev 2.0

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 5
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Title (4)
Spurious Group V Primary Containment Isolation While Shutdown Due to a 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	5	0	6	8	9	8	9	0	0	3	0	0	0	0		
N/A 0 5 0 0 0																
N/A 0 5 0 0 0 1																

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(c)	<input checked="" 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 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	TELEPHONE NUMBER
Scott Briley, Technical Staff Engineer Ext. 2526	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)

Yes (If yes, complete EXPECTED SUBMISSION DATE) NO

Expected Submission Date (15) _____

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

On May 6, 1989 Unit 3 was shutdown for a scheduled maintenance outage. At 1443 hours the Control Room received a Group V (Isolation Condenser) Primary Containment Isolation. 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. All of the Isolation Condenser isolation valves responded automatically as required. The cause of this event is believed to be due to differential pressure spikes and/or noise generated by an annubar flow instrument that was installed on the Isolation Condenser condensate return line during the 1985 Unit 3 refueling outage. Following an investigation to ensure that an Isolation Condenser line break had not occurred, the Group V Primary Containment Isolation signal was reset and the isolation valves were returned to their normal position. Three events similar to this have occurred since the annubar flow instrument was installed. Following the third occurrence a time delay was installed in the isolation circuitry to prevent differential pressure spikes from causing spurious isolations. This was the first occurrence of this type since the time delay was installed.

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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) code numbers are identified in the text as (XXX-XXX-XX-XXXXX).

EVENT IDENTIFICATION

Spurious Group V Containment Isolation While Shutdown Due to a Design Deficiency.

A. CONDITIONS PRIOR TO EVENT:

Unit: 3 Event Date: May 6, 1989 Event Time: 1443 hours
 Reactor Mode: N Mode Name: Shutdown Power Level: 0%
 Reactor Coolant System (RCS) Pressure: 0 psig

B. DESCRIPTION OF EVENT:

On May 6, 1989 Unit 3 was shutdown for a scheduled maintenance outage. Cold shutdown was achieved at 1330 hours. At 1443 hours the Control Room received a Group V (Isolation Condenser [BL]) Primary Containment Isolation [JM] signal. 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 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 to the isolation signal as required. Following an investigation to ensure that an Isolation Condenser line break had not occurred, the Group V Primary Containment Isolation signal was reset and the isolation valves were returned to their normal position.

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 manual or automatic actuation of any Engineered Safety Feature (ESF).

During the 1985 Unit 3 refueling outage an annubar flow instrument was installed on the Isolation Condenser condensate return line to sense high flow and initiate an isolation signal. Previously, an elbow tap type instrument was utilized. Following the August 7, 1987 Group V Primary Containment Isolation event, LER 87-013-0 Docket 050249, test recorders were installed on the system to determine the cause of event. The test recorder traces revealed that the cause was due to differential pressure spikes and/or noise generated by the annubar flow instrument.

The logic for a Group V Primary Containment Isolation is one out of two once as shown in Figure 1. Although the exact cause of this Group V Primary Containment Isolation event could not be determined, it is believed that it was again due to differential pressure spikes and/or noise generated by the annubar flow instrument. In addition, a review of Dresden Instrument Surveillance (DIS) 1300-2, Isolation Condenser Steam/Condensate Line High Flow Calibration, performed on April 17, 1989, revealed that the "as left" time delay on relay 3-595-115J was 1.5 seconds.

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Although this is acceptable, it is at the low end of the acceptable range. It is believed that this was a contributing factor in this event.

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 3 in a cold shutdown condition with reactor pressure less than 90 psig. 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 could 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 this event is considered minimal.

E. CORRECTIVE ACTIONS:

The immediate corrective action was to investigate the alarm and determine if an Isolation Condenser line break had actually occurred. When it was confirmed that no break had occurred, the Group V Primary Containment Isolation was reset and the isolation valves were returned to their normal position.

Following the August 7, 1987 event, Modification M12-3-87-37 was implemented to install a two second time delay in the isolation circuitry. A two second delay was sufficient to prevent most spurious trips without significantly affecting the safety of the plant. The acceptable range for this time delay was originally 1.5 - 2.5 seconds; however, these relays have a range of 0.2 - 180 seconds and setpoint drift to the high side became a problem. The setpoint range was then decreased to 1.5 - 2.0 seconds. To remedy this problem, time delay relays with a range of 0.5 - 5.0 seconds are scheduled to be installed during the next refueling outage which should prevent further setpoint drift problems (249-200-88-03901). In addition, Unit 3 has been shutdown several times since the modification was installed without any spurious trips. The Isolation Condenser was also used extensively on March 26, 1989 during a loss of offsite power event without any problems. As this is the first occurrence of this event since the time delay was added, no further corrective actions are deemed necessary at this time.

F. PREVIOUS EVENTS:

LER/Docket Number	Title
87-013/050249	Manual Reactor Scram Due to Reactor Feedwater System Oscillations During Unit Shutdown Due to Failure of Air Operated Containment Isolation Valve A03-1601-63 to Close During Surveillance Testing.
86-020/050249	Spurious Group V Containment Isolation Due to Design Deficiency.
86-018/050249	Spurious Group V Containment Isolation Due to Design Deficiency.

The 1987 event occurred while the Isolation Condenser was in use. Both of the 1986 events occurred with the Unit shutdown and depressurized. The cause of these events was attributed to differential pressure spikes and/or noise generated by the annubar flow instrument. The corrective action was to install a two second time delay in the Group V Primary Containment Isolation circuitry.

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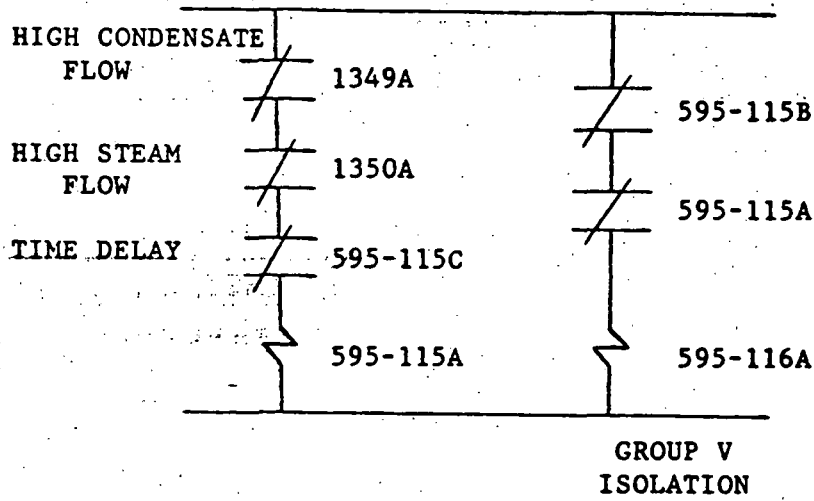
G. COMPONENT FAILURE DATA:

As no component failure occurred, this section is not applicable and an NPRDS data base search was not performed.

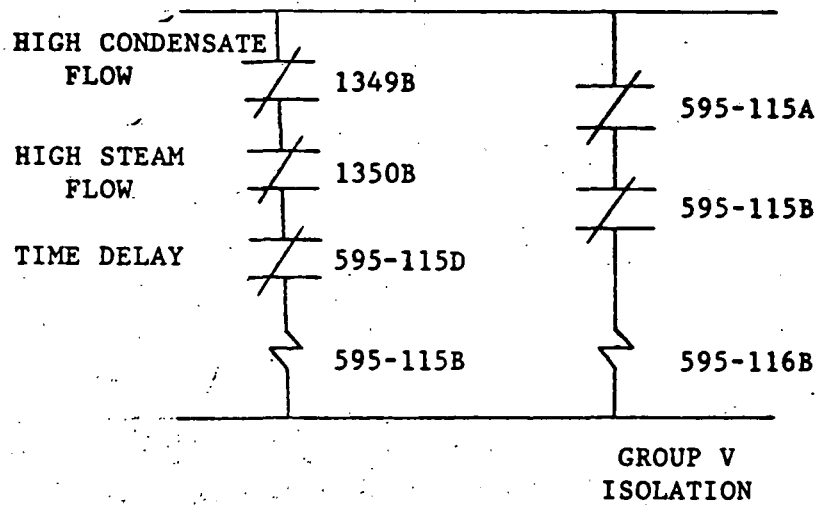
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'A' CHANNEL



'B' CHANNEL



GROUP V ISOLATION LOGIC (SHOWN ENERGIZED)

Figure 1