



Commonwealth Edison

Dresden Nuclear Power Station

R.R. #1

Morris, Illinois 60450

Telephone 815/942-2920

January 28, 1991

EDE LTR #91-068

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

Licensee Event Report #90-001-0, 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/131)

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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
Title (4) Partial Group I Isolation Due To Shorting of 1B MSIV Position Indicating Light Socket		

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 1	0 15	9 1 1	9 1 1	0 10 11	0 10	0 1	2 18	9 1 1	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 6	<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 Neil Spooner, Technical Staff System Engineer	TELEPHONE NUMBER
Ext. 2789	AREA CODE: 8 1 1 5 9 4 2 - 12 19 12 10

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
X	E I	I L	G 10 18 10	N					

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> Yes (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> X NO
Expected Submission Date (15)	Month Day Year

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

On January 5, 1991 while performing Dresden Operating Surveillance (DOS) 250-2, Full Closure Timing and Exercising of Main Steam Isolation Valves (MSIVs); the Unit 2 Nuclear Station Operator (NSO) noted that the open position indication for the 1B MSIV was not illuminated. While the NSO was attempting to replace the bulb, the bulb socket shorted causing fuse 595-709-A in Control Room panel 902-3 to blow. The blown fuse, which powers half the Primary Containment Group I Isolation logic, initiated the closure of both the Recirculation Loop Sample Valve 2-220-44 and Main Steam Line Drain Valve 2-220-1. In addition, the blown fuse caused the loss of position indication and the de-energization of the DC pilot valve solenoid for each inboard MSIV. Unit 2 was in the Startup mode at 6 percent power when this event occurred. The cause of the shorted socket and subsequent partial Group I isolation was the introduction of foreign material into the light bulb socket. As corrective action, the light socket was replaced, affected circuitry was then energized, and the system was returned to normal. The safety significance of this event was considered minimal because none of the MSIVs experienced automatic closure, and closure of Recirculation Loop Sample Valve 2-220-44 and Main Steam Line Drain Valve 2-220-1 had minimal effect on plant operation. A previous occurrence of this type at Dresden Station was reported by LER 90-002/0500237.

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TEXT Energy Industry Identification System (EIIIS) codes are identified in the text as [XX]

PLANT AND SYSTEM IDENTIFICATION:

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

Nuclear Tracking System (NTS) tracking code numbers are identified in the text as (XXX-XXX-XX-XXXXX)

EVENT IDENTIFICATION:

Partial Group I Isolation Due To Shorting of 1B MSIV Position Indicating Light Socket

A. CONDITIONS PRIOR TO EVENT:

Unit: 2	Event Date: January 5, 1991	Event Time: 0906 Hours
Reactor Mode: N	Mode Name: Startup	Power Level: 6%
Reactor Coolant System (RCS) Pressure: 918 psig		

B. DESCRIPTION OF EVENT:

On January 5, 1991 at 0906 hours with Unit 2 in the Startup mode at 6% rated core thermal power, while performing Dresden Operating Surveillance (DOP) 250-2, Full Closure Timing and Exercising of Main Steam Isolation Valves (MSIVs) [SB], the Unit 2 Nuclear Station Operator (NSO) noted that the open position indication for the 1B MSIV was not illuminated. While the NSO was attempting to replace the bulb in accordance with Dresden Operating Procedure (DOP) 040-4, Control Panel Light Bulb Replacement, the bulb socket shorted causing fuse 595-709-A in Control Room panel 902-3 to blow. The blown fuse, which powers half the Primary Containment Group I Isolation [JM] logic, de-energized relay 595-111-A, thereby initiating the closure of both the Recirculation [AD] Loop Sample Valve 2-220-44 and Main Steam [SB] Line Drain Valve 2-220-1 (Refer to Figure 1, attached). In addition, the blown fuse caused the loss of both open and closed position indication, and the de-energization of the DC pilot valve solenoid on each inboard MSIV. Work Request 97472 was written to replace the burnt light socket.

C. APPARENT CAUSE OF EVENT:

The apparent cause of the 1B MSIV light bulb socket failure was the introduction of foreign material into the light bulb socket. The area beneath the lens cover was vacuumed prior to removal of the burned out bulb, as required by DOP 040-4. It should be noted that all horizontal Unit 2 Control Room panel sockets had also been vacuumed prior to startup. After the bulb was removed, the NSO began vacuuming the light socket per DOP 040-4, at which time the socket shorted. It is believed that foreign material, which had either originally been in the socket or had fallen from the vacuum snorkel, positioned itself between the base of the socket and the center contact point, providing an electrical path, or short, to ground. The establishment of increased current through the related Group I isolation logic resulted in the blown fuse 595-709-A. A Maintenance History Review indicated the previous LER described in Section F below.

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D. SAFETY ANALYSIS OF EVENT:

At the time of this event fuse 595-709-A immediately blew upon the shorting of the light bulb socket, therefore performing its intended function by keeping excessive current from damaging related Group I isolation circuitry. The closure of Recirculation Loop Sample Valve 2-220-44 and Main Steam Line Drain Valve 2-220-1 was an expected occurrence of the partial Group I isolation which was received as a result of the de-energization of relay 595-111-A. Although all DC pilot valve solenoids de-energized as a result of the blown fuse, none of the inboard MSIVs experienced automatic closure since all AC pilot valve solenoids on the MSIVs were energized (de-energization of both AC and DC solenoids are required to cause MSIV closure). Even if all MSIVs had closed during this event, all Electromatic Relief Valves and main steam Safety Valves were operable to ensure reactor vessel protection from an overpressurization transient. Unexpected closure of the Recirculation Loop Sample Valve and Main Steam Line Drain Valve had minimal effect on plant operation. For these reasons, the safety significance of this event was minimal.

E. CORRECTIVE ACTIONS:

As immediate corrective actions, the light bulb socket for the open indication on the 1B MSIV was replaced under Work Request 97472. The new light socket and nearby areas were again vacuumed before bulb replacement and energization of the circuitry. Fuse 595-709-A in Control Room panel 902-3 was then replaced and DOS 250-2 was satisfactorily completed for all inboard MSIVs. Recirculation [AD] Loop Sample Valve 2-220-44 and Main Steam Line Drain Valve 2-220-1 were also re-positioned after replacement of fuse 595-709-A. Prior to Unit 2 Startup, all horizontal Control Room panels had been vacuumed. DOP 040-4, requiring vacuuming of Control Room panel light sockets before and after installation of new light bulbs, will help prevent recurrences of this type.

F. PREVIOUS OCCURENCES:

LER/Docket Numbers Title

90-002/0500237 Reactor Scram Following Condensate/Condensate Booster Pump Failure and Subsequent Loss of Offsite Power

During this event, an Electromatic Relief Valve (ERV) open position indicating lamp socket shorted due to foreign material in the socket base. The socket was replaced, and all Unit 2 ERV sockets were vacuumed as well as various other Unit 2 sockets.

A system history search indicates other non-reportable events involving foreign material in light sockets; it is believed that extensive work on the Control Room panels during a recently-completed human factors project may have been a contributing factor in these events.

Corrective actions included implementation of the improvements to DOP 040-4 involving vacuuming described previously in this event.

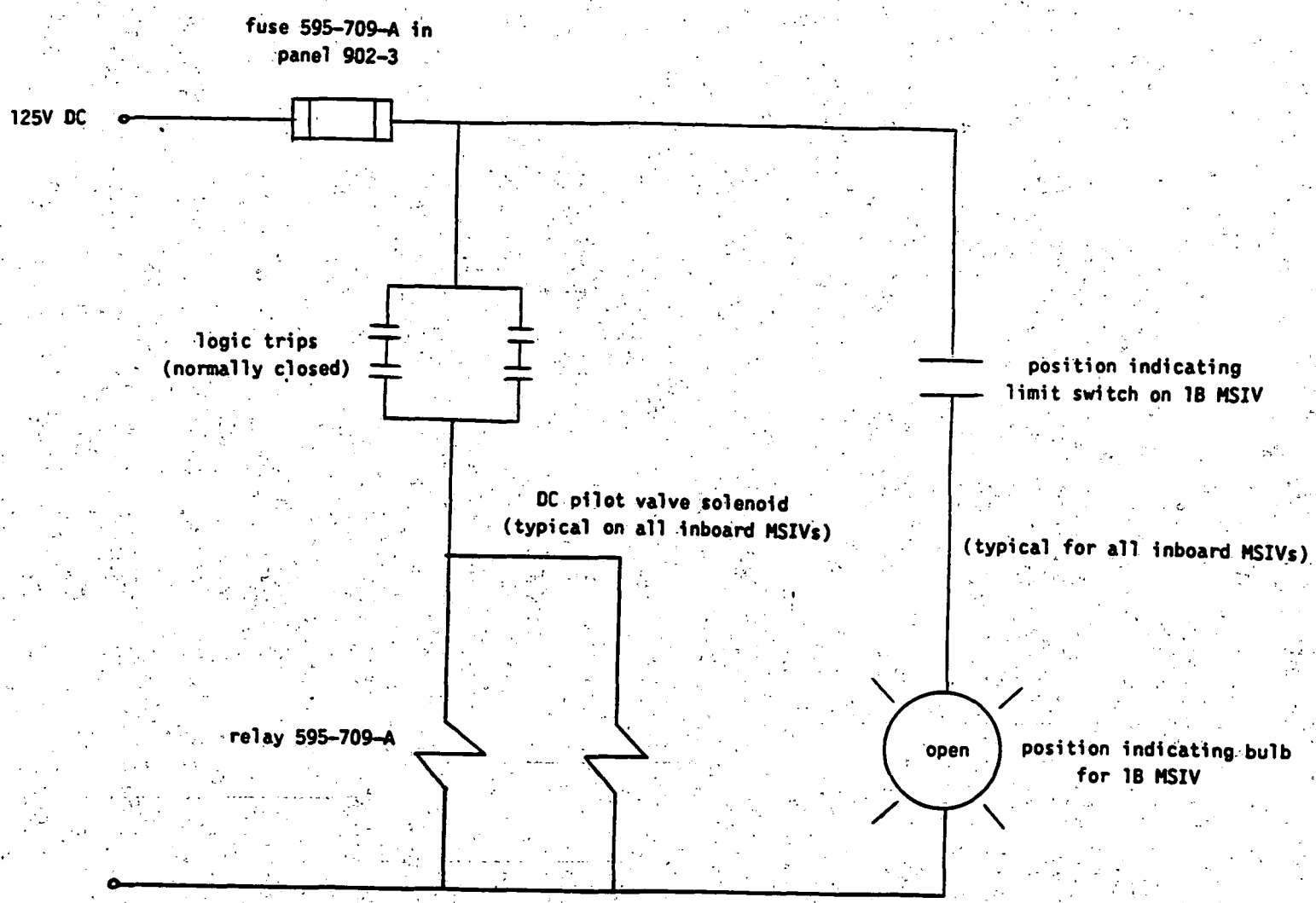
G. COMPONENT FAILURE DATA:

<u>Manufacturer</u>	<u>Nomenclature</u>	<u>Model Number</u>	<u>Mfg. Part Number</u>
General Electric	MSIV 2-203-1B open indicating socket	CR103C1102B	N/A

This component is not reportable to the NPRDS data base.

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SIMPLIFIED DIAGRAM OF AFFECTED CIRCUITRY

FIGURE 1