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Dresden Nuclear Power Station
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Telephone 815/942-2920

July 20, 1992

CWS LTR #92-418

U.S. Nuclear Regulatory Commission
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Washington, D.C. 20555

Licensee Event Report #92-23, Docket #050237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(iv).

L. J. Grewer for 7/23/92

Charles W. Schroeder
Station Manager
Dresden Nuclear Power Station

CWS/jmt

Enclosure

cc: A. Bert Davis, Regional Administrator, Region III
NRC Resident Inspector's Office
File/NRC
File/Numerical

(ZDVR/683)

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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 0 0 0 2 3 7			Page (3) 1 of 0 4		
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Title (4)
Reactor Recirculation Sample Valve 2-220-45 Closure and Loss of Outboard MSIV Indication Due to a Blown Fuse

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	7	0	2	9	2	9	2	0	2	3	0	0	0	7	2	0	9	2	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 7 7		<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)	<input type="checkbox"/> Other (Specify in Abstract below and in Text)

LICENSEE CONTACT FOR THIS LER (12)

Name Ronald R. Skoglund, Technical Staff System Engineer						Ext. 2543						TELEPHONE NUMBER AREA CODE 8 1 5 9 4 2 - 2 9 2 0					
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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	S B	F U	C 6 3 4	N					

SUPPLEMENTAL REPORT EXPECTED (14)

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

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

At 0005 hours on July 2, 1992, with Unit 2 at 77 percent power, with no plant operation evolutions in progress, a Nuclear Station Operator (NSO) received a computer alarm indicating that the Reactor Recirculation primary coolant sample valve 2-220-45 had closed. The NSO verified that the 2-220-45 valve had closed indication on the 902-4 Control Room panel. The NSO also observed that valve indication for all of the outboard Main Steam isolation valves (MSIVs) on the 902-4 panel were out. An investigation revealed that fuse 595-710-B had blown, causing relay 595-111-B to de-energize. The de-energization of this relay caused the 2-220-45 to close and the loss of the outboard MSIV position indications on the 902-4 panel. The outboard MSIVs remained in the open position. The fuse was replaced at approximately 0020 hours and all conditions returned to normal. A current check on the circuit was performed to verify that the fuse was adequately sized for the circuit. The fuse size was found to be acceptable for the circuit. The cause of the blown fuse could not be determined. The Safety Significance of this event was minimal because the 2-220-45 valve closed to its fail-safe position. Two previous non-reportable events involving similar results occurred in 1988. Both of these events involved an indicating lamp failure that created a short in the circuit. These shorts caused partial Group I Primary Containment isolations in both cases.

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:

Reactor Recirculation Sample Valve 2-220-45 Closure and Loss of Outboard MSIV Indication Due to a Blown Fuse

A. CONDITIONS PRIOR TO EVENT:

Unit: 2 Event Date: July 2, 1992 Event Time: 0005 Hours
 Reactor Mode: N Mode Name: Run Power Level: 77%
 Reactor Coolant System (RCS) Pressure: 980 psig

B. DESCRIPTION OF EVENT:

At 0005 hours on July 2, 1992, with Unit 2 at 77 percent power, with no plant operation evolutions in progress, a Nuclear Station Operator (NSO) received a computer alarm indicating that the Reactor Recirculation [AD] primary coolant sample valve 2-220-45 had closed. The NSO immediately verified that the 2-220-45 valve had closed indication on the control panel. The NSO also observed that all outboard Main Steam [SB] isolation valve (MSIV) position indications were out. A review of critical drawings and an inspection of the electrical components in the circuit revealed that fuse 595-710-B had blown. The blown fuse caused relay 595-111-B to de-energize, which in turn caused the 2-220-45 valve to fail closed and the loss of valve indication for the outboard MSIVs. The outboard MSIVs did not actually close. The fuse was replaced at 0020 hours and all conditions returned to normal.

C. APPARENT CAUSE OF EVENT:

This report is submitted in accordance with 10 CFR 50.73(a)(2)(iv), which requires the reporting of any unplanned Engineered Safety Feature (ESF) actuation, due to the unplanned movement of the 2-220-45 Reactor Recirculation sample valve which is also a Primary Containment isolation valve.

The apparent cause of the 2-220-45 valve closure was due to a blown fuse. A current check was performed on the associated circuitry to verify that the fuse is adequately sized for the circuit. The fuse size was found to be acceptable. A maintenance history review showed that the solenoid valve for the 2-220-45 was replaced in June 1992. A correlation between the solenoid valve replacement and this event could not be found. In 1988, two non-reportable events occurred when Operations personnel were replacing MSIV indicating lights. In both cases, a short caused another fuse in the circuit to blow and caused a partial Group I Primary Containment isolation.

Since no evolutions were in progress at the time that the fuse opened, a ground was suspected. However, the presence of a DC ground at the time of this event could not be proven. Therefore, the failure of the fuse could not be determined.

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

D. SAFETY ANALYSIS OF EVENT:

Fuse 595-710-B provides DC power to the 2-220-45 solenoid valve, the outboard MSIV position indication, and the outboard MSIV DC pilot solenoid valves. When the fuse opened, the 2-220-45 solenoid valve de-energized causing the 2-220-45 valve to close and the loss of outboard MSIV position indication. The outboard MSIVs did not close because each MSIV has both a DC and an AC pilot solenoid, and require both to deenergize for valve closure.

The air operated (AO) 2-220-45 valve is a Primary Containment Group I isolation valve and will close when one of the following conditions is met:

- Reactor low-low water level
- Main steam line high flow
- Main steam line high radiation
- Main steam tunnel high temperature
- Main steam line low pressure

The purpose of isolating the reactor recirculation sample line and the main steam lines is to prevent the release of radioactive materials in accordance with 10CFR100. The Primary Containment Isolation System (PCIS) logic is designed such that a component failure will not render the system inoperable. The logic system is normally energized and de-energizes when an isolation signal is present. When the fuse opened, the affected portion of the PCIS Group I logic circuitry failed in the conservative direction. Outboard Reactor Recirculation sample valve 2-220-45 closed as required, and the outboard MSIVs would have also closed if the AC pilot solenoids had been de-energized for any reason. The inboard Reactor Recirculation sample valve 2-220-44 and the inboard MSIVs were unaffected by this event. The ESF actuation of the 2-220-45 valve had minimal safety significance since the valve failed closed. The safety significance of the loss of the outboard MSIV position indication was minimal because the computer point valve indications were still available as well as the steam flow indicators for each main steam line.

E. CORRECTIVE ACTIONS:

The immediate corrective action taken was to replace the blown fuse. Additional corrective actions taken were to take current readings on the circuit to see if the fuse was adequately sized for the circuit. Results showed that the fuse was adequate. In addition, the drawings were reviewed to verify that the correct fuse, as designed, was in place. No further corrective actions are deemed necessary at this time.

F. PREVIOUS OCCURENCES:

<u>Non-Reportable event</u>	<u>Title</u>
12-2-88-046	Partial Primary Containment Group I Isolation Due to Open Fuses Caused by a Position Indicating Lamp Failure The inboard MSIV DC control power fuses opened, resulting in a partial Group I Primary Containment Isolation, due to the failure of a Control Room position indicating lamp for the 2-203-1D MSIV.
12-2-88-092	Partial Primary Containment Isolation Caused by an Open Fuse Due to a Position Indicating Lamp Failure A DC power control fuse opened, resulting in a partial Group I Primary Containment Isolation, due to the failure of a Control Room position indicating lamp.

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

G. COMPONENT FAILURE DATA:

<u>Manufacturer</u>	<u>Nomenclature</u>	<u>Model Number</u>	<u>Mfg. Part Number</u>
Bussman Division Cooper Industries	5 Amp Fuse	Buss Min 5	N/A

As this component is not reportable to the NPRDS data base, an industry wide NPRDS data search was not performed.