



Commonwealth Edison

Dresden Nuclear Power Station

R.R. #1

Morris, Illinois 60450

Telephone 815/942-2920

January 31, 1992

CWS LTR #92-052

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

Licensee Event Report 92-02 , Docket 050249 is being submitted as
required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73
(a)(2)(vii)(b).

L. F. Newer for

Charles W. Schroeder
Station Manager
Dresden Nuclear Power Station

CWS/cfq

Enclosure

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

050061

(ZDVR/461)

9202060047 920131
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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 0 15 10 10 12 14 19 Page (3) 1 of 0 4

Title (4) Primary Containment Isolation Valve Closure Due To A Damaged Control Relay

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	13	9	2	9	2	0	1	3	11	9	2	N/A	
													N/A	

OPERATING MODE (9) N

POWER LEVEL (10) 0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input 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 checked="" type="checkbox"/> 50.73(a)(2)(vii)(B)	<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: John Reid, Technical Staff System Engineer Ext. 2380

TELEPHONE NUMBER: 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	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

Expected Submission Date (15) Month Day Year

Yes (If yes, complete EXPECTED SUBMISSION DATE) X NO

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

On January 13, 1992, at 1115 hours, with Unit 3 shutdown for a refuel outage and the Shutdown Cooling (SDC) system cooling the reactor water, the Instrument Maintenance Department completed calibration checks of the SDC temperature switches under Work Request (WR) 05767. This procedure included a planned isolation of the SDC system. The SDC system suction high temperature instrument loop was found to be properly calibrated. However, when Operations attempted to restart the SDC system, the primary containment isolation valves would not open. It was discovered that the valves' failure to open was due to a damaged isolation control relay. The relay was replaced and the new relay was functionally tested. The SDC system was then returned to service at 1425 hours. The root cause was determined to be external damage to a control relay (3-595-114) in the SDC system isolation logic. The Electrical Maintenance Department then inspected all safety related relays of the same type, on both Dresden Units 2 and 3, for damage. This event had minimal safety significance due to the fact that the SDC system was promptly restored to operation and the reactor water temperature was maintained well below the 212 degree F limit required for primary containment integrity. A previous spurious SDC system isolation was reported by LER 92-1/050249.

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:

Primary Containment Isolation [JM] Valve Closure Due To A Damaged Control Relay

A. CONDITIONS PRIOR TO EVENT:

Unit: 3 Event Date: January 13, 1992 Event Time: 1115 Hours

Reactor Mode: N Mode Name: Refuel Power Level(%): 0%

Reactor Coolant System (RCS) Pressure: 0 psig

B. DESCRIPTION OF EVENT:

On January 13, 1992, with Unit 3 shutdown for a refuel outage, the Instrument Maintenance Department (IMD) performed a calibration check of the Shutdown Cooling (SDC) [B0] system suction high temperature instrument loop per Work Request (WR) 05767. During the SDC system suction high temperature instrument loop calibration, a planned SDC isolation occurred as expected. SDC Valves M03-1001-1A, 1B, 2B, 5A, and 5B went closed at this time. Following the completion of WR 05767, the Operators attempted to start the SDC system. However, the Primary Containment Isolation Valves M03-1001-1A, 1B, 2B, 5A, and 5B would not open. An inspection of the system control relays located in the rear of Main Control Panel (MCP) 903-4 was performed, and a damaged control relay was discovered. The relay, 3-595-114, provides for an isolation of the SDC system on high suction temperature. The relay was replaced and the new relay was functionally tested. The SDC system was then returned to service at 1425 hours on January 13, 1992.

C. APPARENT CAUSE OF EVENT:

This report is submitted in accordance with Title 10 of the Code of Federal Regulations Part 50, Section 73(a)(2)(vii)(B), which requires the reporting of any event where a single condition caused inoperability of a system designed to remove residual heat.

The root cause of this event was external damage to control relay 3-595-114. The relay is a standard 4-pole industrial type relay, General Electric model CR120A. The relay consists of a fire resistant plastic body that contains the coil, the stationary contacts, and the wiring terminals. Inserted into this body are a movable contact arm, and a white plastic retainer that functions to hold the contact arm in place.

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Immediately following the inability to open the SDC system primary containment isolation valves, Operations inspected the SDC system control relays located in the rear of MCP 903-4. They found the movable contact arm and the contact arm retainer for relay 3-595-114 on the floor of the control panel. The movable contact arm also had a broken position indicator. This relay isolates the SDC system on high suction temperature, and was exercised immediately prior to the event during performance of WR 05767. Inspection of the plastic retainer indicated a small hairline crack. However, this did not affect the function of the retainer. Bench testing of the relay with the retainer missing determined that the movable contact arm would remain in the relay as long as the relay remain energized. However, once the relay was deenergized, the movable contact arm would fall out. The last time the relay possibly could have been deenergized was on January 2, 1992, when a spurious SDC system isolation occurred (LER 92-1/050249). It could not be determined what caused that spurious isolation, but damage to relay 3-595-114 was ruled out because if that were the case, the SDC system could not have been restarted.

This event occurred during an extended refuel outage in which extensive work activities have been performed in the Main Control Room. It is believed that an individual working in the tight space of the 903-4 panel possibly bumped the relay, causing the plastic retainer to fall out. Since the relay would be energized (as no SDC system suction high temperature condition would exist), the movable contact arm remained in the relay until the relay became deenergized on January 13, 1992. The Electrical Maintenance Department (EMD) then inspected the safety related CR120A relays on both Dresden Units 2 and 3 for damage. One other relay, 3-595-119, which isolates the Reactor Water cleanup [CE] system on a high pressure condition, was identified to have a cracked movable contact arm retainer. This relay is located directly above relay 3-595-114 in MCP 903-4. A maintenance history review indicated no past history of relay failures of this type.

D. SAFETY ANALYSIS OF EVENT:

The primary purpose of the SDC system is to remove decay heat from the reactor coolant system during reactor shutdown. As designed, the system isolates as a result of the following conditions:

1. A high temperature condition on recirculation loop "A" or "B" sensed via recirculation loop temperature thermocouples (system protection trip only, not driven by Engineered Safety Feature (ESF) logic).
2. Low reactor water level condition (Primary Containment Group III Isolation Logic).

The purpose of the first condition is to protect the system pumps and other system components from extreme temperatures. The purpose of the second condition is to provide a means of ensuring primary containment integrity for conditions in which abnormal reactor inventory leakage is occurring via the SDC system. Isolation of the system, when serving the purpose of maintaining coolant temperature, could result in increasing reactor water temperature; however, at no time did the reactor water temperature approach 212 degrees F. Control Room personnel were fully aware of the reactor water temperature. All testing that could affect moderator temperature and reactor vessel level were halted. Increased monitoring of the fuel pool temperature and reactor vessel metal temperature was established. Contingency plans were implemented to provide supplemental decay heat removal if required. The damage to the relay did not impair the primary containment isolation function and would have maintained system isolation in the event of a low water level condition. The Operations Department was able to restart the SDC system shortly after the isolation, effectively minimizing the increase in reactor water temperature. Therefore, the safety significance of this event was minimal.

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

E. CORRECTIVE ACTIONS:

The immediate corrective actions consisted of replacing the damaged 3-595-114 relay with a new relay. The new relay was successfully functionally tested and the SDC system was restarted. Subsequently, the EMD inspected all safety related CR120A relays on both units and found one other relay, 3-595-119, to have a cracked movable contact arm retainer. This relay was directly above relay 3-595-114. The movable contact arm and the retainer for the contact arm for the 3-595-119 relay were replaced under WR 06040.

F. PREVIOUS OCCURENCES:

A previous Dresden Unit 3 spurious SDC isolation is referenced below.

LER/Docket Numbers Title

92-001/500249 Primary Containment Isolation Valve Closure Due To Shutdown Cooling System Spurious Isolation

During normal Unit 3 shutdown conditions, a spurious isolation of the SDC system due to an unidentified cause occurred. The system was promptly returned to service. No further problems were encountered.

G. COMPONENT FAILURE DATA:

Since this event was caused by external damage to the component, this section is not applicable.