



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

January 13, 1993

CWS LTR #93-0019

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

Licensee Event Report 92-44, Docket 050237 is being voluntarily submitted in accordance with Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73.

L. F. Gerner for 1/13/93
Charles W. Schroeder
Station Manager
Dresden Station

CWS/slb

Enclosure

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

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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
 Title (4) Primary Containment Isolation Valve Closure Due To Shutdown Cooling System Spurious Isolation

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)
1	2	9	2	0 4 4	0 0	0	1	1	5	9 3
									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 0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
	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)	X Other (Specify
	20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	in Abstract
	20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	below and in
	20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	Text) Voluntary

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 -2 9 2 0

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

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 December 16, 1992, at 2221 hours, a Shutdown Cooling (SDC) System isolation occurred resulting in Primary Containment Isolation Motor Operated Valves (MOVs) 1001-1A and 1001-1B, 1001-2A and 1001-2B, 1001-4A and 1001-4B, 1001-5A and 1001-5B fully closing. Unit 2 was in refuel mode with the A and B Shutdown Cooling loops in service maintaining reactor water temperature. The B Reactor Recirculation loop temperature on Control Room Temperature Recorder 2-260-11 spiked high to approximately 350 degrees F (A loop temperature remained normal). Control Room Panel 902-4 alarm H-8, Recirc Loop B Water High Temp, was received and the SDC System automatically isolated. Approximately 50 minutes later the Instrument Maintenance Department induced a current to the B thermocouple to correct resistive connections. The alarm cleared and the SDC System was restarted. This event had minimal safety significance because the SDC System was promptly restored to normal operation and the reactor water temperature was maintained well below the 212 degree F limit required for maintaining a cold shutdown condition.

The SDC System is designed to serve both protective (ESF) and non-protective (non-ESF) functions. SDC valve actuations resulting from a signal originating in the non-ESF circuitry (i.e., faulty thermocouple signal) are not considered to be ESF actuations. Therefore this LER is being submitted on a voluntary basis.

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 Shutdown Cooling [BO] System Spurious Isolation

A. CONDITIONS PRIOR TO EVENT:

Unit: 2 Event Date: December 16, 1992 Event Time: 2221 Hours

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

Reactor Coolant System (RCS) Pressure: 0 psig

B. DESCRIPTION OF EVENT:

On December 16, 1992, at 2221 hours, with Unit 2 in the refuel mode, a Shutdown Cooling System (SDC) isolation occurred as a result of a spurious high Reactor Recirculation [AD] loop temperature (350 degrees F or above nominal setpoint) signal. The A and B SDC loops were in service maintaining reactor water temperature. The B recirculation loop indication on Control Room Recirculation Loop Temperature Recorder 2-260-11 spiked high to approximately 350 degrees and Control Room Panel 902-4 alarm H-8 [JL] Recirc Loop B Water High Temp, was received. Subsequently, the SDC system isolated and Primary Containment Isolation Motor Operated Valves (MOVs) 1001-1A and 1001-1B, 1001-2A and 1001-2B, 1001-4A and 1001-4B, 1001-5A and 1001-5B fully closed. Because the SDC valve actuations resulted from a signal originating in the non-ESF circuitry, the other Group III Primary Containment Isolation valves did not isolate. This was not an ESF actuation. Temperature indication for the A recirculation loop, and other reactor water temperature indications remained normal. Approximately fifty minutes after the isolation, Instrument Maintenance Department induced a current to the B thermocouple to correct resistive connections, clearing the alarm. The SDC system was then restarted.

C. APPARENT CAUSE OF EVENT:

This LER is submitted voluntarily.

The root cause of the temperature spike could not be determined. However, a maintenance history review indicates that spiking has previously occurred due to poor connections at the temperature element and at the primary containment penetration. The fact that the thermocouple could be repaired by inducing a current to the thermocouple to correct resistive connections it provides evidence that the failure was due to poor connections at the temperature element and/or at the primary containment penetration. The cable terminations at the temperature element were changed in December, 1989 and the spiking occurrences have decreased since then.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

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. The SDC System is not a safety-related system. As designed, the system isolates as a result of the following conditions:

1. A high temperature condition on Recirculation loop "A" or "B" via recirculation loop temperature thermocouples (system protection trip only, not driven by 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 excessive reactor inventory leakage is occurring. Isolation of the system, when serving the purpose of maintaining coolant temperature, would result in increasing reactor water temperature, possibly to the boiling point (212 degrees F) or more. At no time did the reactor water temperature approach 212 degrees F. Control Room personnel were fully aware of reactor water temperature. The Operations Department was able to restart the Shutdown Cooling System shortly after the isolation, minimizing the reactor water temperature increase. For this reason, the safety significance of this event is considered to be minimal.

E. CORRECTIVE ACTIONS:

The immediate corrective action consisted of returning the Shutdown Cooling System to operation. This was accomplished by the Instrument Maintenance Department inducing a current to the B thermocouple to correct resistive connections. Inducing a current to a resistive connection is a process that uses a power supply to repair thermocouple or penetration connections by sending a comparatively large (200 milliamp) amperage current through the thermocouple wiring. The increased current will "weld" the shorting wires or thermocouple. A review of the Recirculation Loop Temperature Recorder chart since the isolation occurred has shown that the A and B recirculation loop temperatures have tracked normally and no further spiking has occurred.

As a long term corrective action from a previous occurrence, a modification request was initiated to evaluate the installation of a second drywell penetration for temperature element cabling. Temperature elements with damaged or faulty cabling would then be transferred from penetration X-202F to the new penetration (NTS Item No: 237-200-90-00901). The new penetration will be installed under Work Request D92967, during the upcoming Unit 2 refuel outage (D2R13).

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

F. PREVIOUS OCCURRENCES:

Review of recent system history indicated two previous events involving a spurious Shutdown Cooling System isolation.

Event No. Title

91-0361050237 Primary Containment Isolation Valve Closure Due To Shutdown Cooling System Spurious
(LER) Isolation

During normal operation with Unit 2 in cold shutdown, an isolation of the shutdown Cooling System on high suction temperature (350 degrees F or above) occurred. Approximately five minutes later the alarm cleared and the SDC system was restarted. The cause of the system isolation was an unidentified spurious signal. A modification request to install a new drywell penetration was written previously.

12-2-90-009 Shutdown Cooling System Isolation On High Recirculation Loop Temperature Due To
(Non-reportable DVR) Penetration Wiring Movement

During normal operation with Unit 2 Shutdown, an isolation of the Shutdown Cooling System on high suction temperature (350 degrees F or above) occurred. The second attempt to unisolate the system was successful and the system was returned to normal. Dresden Operating Surveillance (DOS) 1600-17, Periodic Monitoring of Electrical Penetration Nitrogen Inerting Pressures, was being performed on the electrical penetration (X-202F) that houses the thermocouple cables carrying the signal that can cause isolations of the Shutdown Cooling System. Corrective action was to initiate a modification request to install a new drywell penetration.

G. COMPONENT FAILURE DATA:

Since no component failure occurred, this section is not applicable.