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Dresden Nuclear Power Station
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February 21, 1992

CWS LTR #92-102

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

Licensee Event Report 92-04 , Docket 050237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(iv).

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

(ZDVR/481)

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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 5
Title (4) Reactor Water Cleanup System Primary Containment Isolation Valve Closure Due to Procedure 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	1	2	6	9	2	9	2	0	10	4	0	0	0	2	2	1	9	2	N/A	
										N/A										

OPERATING MODE (9) POWER LEVEL (10) 0 0 0	N	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 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 Kenneth H. Neal, Technical Staff System Engineer Ext. 2237								TELEPHONE NUMBER AREA CODE 8 1 5 9 4 2 - 2 19 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 January 26, 1992, at 0112 hours, with Unit 2 shutdown, a Reactor Water Cleanup (RWCU) System isolation occurred, resulting in Primary Containment Isolation (PCI) Motor Operated Valves (MOVs) 2-1201-1 and 2-1201-3 fully closing. Operations personnel were attempting to start up the RWCU system with the RWCU Auxiliary pump when the event occurred. The RWCU system isolated twice on system high pressure signals. The root cause was a deficiency within the RWCU operating procedure; the sequence for startup of the RWCU auxiliary pump resulted in flow restriction. Flow was restricted by the flow controller at the discharge of the system upon the startup of the auxiliary pump. The flow restriction caused a pressure spike which could not be adequately mitigated by the Operator adjusting the pressure controller at the system inlet. Although this event was not initiated by PCI logic, it did result in closure of PCI valves. This event had minimal safety significance because the unit was shutdown and there was no adverse effect on reactor water chemistry. Immediate corrective actions were to reset and restart the RWCU System. The RWCU System was restored to normal operation at 0122 hours on January 26, 1992. A temporary procedure change was written to allow operation of the flow controller within a range of 25 to 50 percent open during auxiliary pump startup instead of five percent. A similar previous unplanned RWCU trip was reported by LER 91-38/050237.

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 Water Cleanup [CE] System Primary Containment Isolation [JM] Valve Closure Due To Procedure Deficiency

A. CONDITIONS PRIOR TO EVENT:

Unit: 2 Event Date: January 26, 1992 Event Time: 0112 Hours
 Reactor Mode: N Mode Name: Shutdown Power Level: 0%
 Reactor Coolant System (RCS) Pressure: 0 psig

B. DESCRIPTION OF EVENT:

On January 26, 1992, at 0112 hours, with Unit 2 shutdown, a Reactor Water Cleanup (RWCU) System isolation occurred, resulting in Primary Containment Isolation Motor Operated Valves (MOVs) 2-1201-1 and 2-1201-3 fully closing. Operations personnel were attempting to startup the RWCU system with the RWCU auxiliary pump, when the event occurred. The RWCU system was reset and at 0120 a second RWCU system start-up was attempted. However, the RWCU system tripped again. Each time the RWCU system isolated on a system high pressure signal, as Main Control Room Panel 902-4 alarm F-12 [JL], RWCU System After Non-Regenerative Heat Exchangers Pressure High, was received.

Although this event was not initiated by Primary Containment Isolation logic, it did result in closure of Primary Containment Isolation MOVs 2-1201-1 and 2-1201-3. Immediate corrective actions were to reset and restart the RWCU System. The RWCU System was restored to normal operation at 0122 hours on January 26, 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) (iv), which states that any event that results in the manual or automatic actuation of any Engineered Safety Feature, including the Reactor Protection System (RPS) [JE], must be reported.

The RWCU system takes water from the reactor vessel through the Reactor Recirculation [AD] system suction line (see attachment 1). During power operation, normal reactor pressure provides the driving force for the water to the RWCU system. The water then passes through heat exchangers and a pressure control valve (PCV 2-1217), to reduce the water temperature and pressure, prior to the demineralizers. After the demineralizers, the water is returned to the Feedwater [SJ] system through a recirculation pump and a flow control valve (FCV 2-1219).

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When the reactor is not at pressure, an auxiliary pump is used to pump the water from the reactor through the RWCU system. The RWCU recirculation pump is not required for this mode of RWCU system operation. Dresden Operating Procedure (DOP) 1200-01, RWCU System Operation During Startup and Shutdown, provides instructions for the Operator to startup the RWCU system using either the recirculation pump or the auxiliary pump.

For operation of the RWCU system using the auxiliary pump, DOP 1200-01 instructs the operator to place Pressure Controller (PIC) 2-1290-2 in MANUAL and apply a 20% demand signal to open pressure control valve PCV 2-1217. The procedure instructs the operator to adjust the demand on Flow Controller, RMC 2-1290-10 to 5%. This directly controls flow control valve FCV 2-1219 and restricts the flow through the RWCU system when the auxiliary pump is started. Once the system is started, pressure and flow are expected to stabilize at approximately 100 psig and 300 gpm. After the system stabilizes, PIC 2-1290-2 is placed in AUTOMATIC. However, a demand signal of 5% on RMC 2-1290-10 closes FCV 2-1219 too much, and when the auxiliary pump was started, RWCU system flow was restricted causing the pressure after PCV 2-1217 to increase above the system isolation setpoint of 150 psig. This occurred rapidly and the Operator was not able to position PCV 2-1217 to control pressure below the setpoint. The system tripped twice on a high pressure signal, with all equipment operating as designed on the trip signal. A further review of the procedure with the Operators and a General Electric Co. representative determined that DOP 1200-01 should be revised to allow a demand signal range on RMC 2-1290-10 of 25% to 50% in order to help prevent system pressure spikes. The underlying root cause of this event was therefore attributed to procedure deficiency within DOP 1200-01.

D. SAFETY ANALYSIS OF EVENT:

The purpose of the RWCU system is to maintain reactor water chemistry within Technical Specification requirements. As the RWCU system was returned to service promptly, Technical Specification limits were not exceeded. The RWCU system automatically isolated, as designed, upon receipt of a high pressure signal in the RWCU system. There was no effect on public health or safety. For these reasons, this event had minimal safety significance.

E. CORRECTIVE ACTIONS:

Immediate corrective actions were to reset/restart the RWCU system. The RWCU system then operated without further problems. A temporary procedure change (TPC), TPC 92-052, was written to allow operation of RMC 2(3)-1290-10 in the range of 25 to 50 percent open in step G.2.e. of DOP 1200-01. The Operations Department will incorporate TPC 92-052 into a permanent procedure revision. Design improvements to the RWCU pressure and flow control valves are also under review to facilitate easier system operation, as described in LER 91-38/050237. The Technical Staff System Engineer will also write a memo to all Licensed Operations personnel describing this event and system improvements being reviewed (237-200-92-01401).

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

F. PREVIOUS OCCURENCES:

Three similar Unit 2 RWCU isolation events are listed below.

LER/Docket Numbers Title

91-038/0500237 Primary Containment Isolation Valve Closure Due To Reactor Water Cleanup System Isolation

This event involved unplanned automatic closure of two Primary Containment Group III Isolation valves due to RWCU isolation while starting the RWCU auxiliary pump, after securing the RWCU 2B recirculating pump. Corrective actions included investigation by the System Engineer to improve the PCV and FCV in order to facilitate smoother RWCU operation using a single demineralizer. Designs are currently being developed for installation of PCV/FCV improvements during the next refuel outage.

91-034/0500237 Primary Containment Isolation Valve Closure Due To Reactor Water Cleanup System Isolation

This event involved unplanned automatic closure of two Primary Containment Group III Isolation valves due to pressure oscillations caused by the loss of the RWCU surge tank nitrogen blanket. Corrective actions included adding nitrogen and reset/restart of the RWCU system.

91-033/0500237 Primary Containment Isolation [JM] Valve Closure Due To Reactor Water Cleanup System Operation

This event involved unplanned automatic closure of two Primary Containment Group III Isolation valves due to a RWCU isolation while returning the RWCU system to normal operation after it had been isolated to support 250 VDC battery [EJ] switching. Corrective actions included replacing the FCV 2-1219 valve diaphragm and performing a diaphragm spring tension adjustment on the valve under WR 04403.

G. COMPONENT FAILURE DATA:

Since there was no component failure, this section does not apply.

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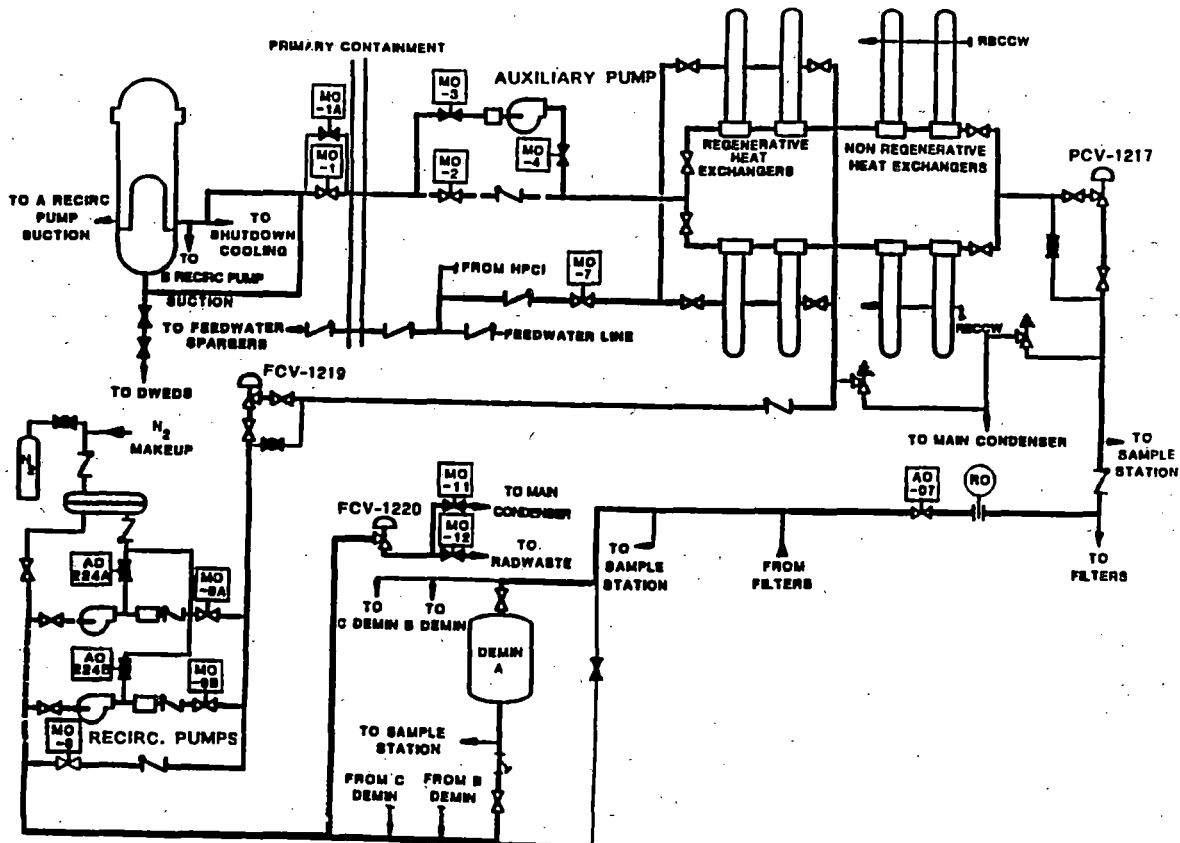
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TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]

Attachment 1



Reject With Low Pressure RCU System Flow