



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

November 6, 1991

EDE LTR #91-680

U.S. Nuclear Regulatory Commission  
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Licensee Event Report #91-034, Docket #050237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(iv).

*L. J. Henner for*

E. D. Eenigenburg  
Station Manager  
Dresden Nuclear Power Station

EDE/dwh

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 10 15 10 10 12 13 17 Page (3) 1 of 0 4

Title (4) Primary Containment Isolation Valve Closure Due to Reactor Water Cleanup System 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)	
10	12	91	91	034	00	11	06	91	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 9 5	<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 checked="" 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)
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LICENSEE CONTACT FOR THIS LER (12)

Name: John Reid, Technical Staff System Engineer Telephone Number: 8 1 1 5 9 4 2 1 - 2 1 9 2 1 0 Ext. 2380

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

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

On October 12, 1991, at 1643 hours, with Unit 2 at 95% power, a Reactor Water Cleanup (RWCU) system isolation occurred resulting in Primary Containment Isolation Motor Operated Valves (MOV) 2-1201-1 and 2-1201-2 fully closing. Due to pressure oscillations in the RWCU system, Operations personnel were transferring the pressure control station from "Auto" to "Manual" when the RWCU system isolated on a high pressure signal. On investigation, it was found that the nitrogen gas blanket on the RWCU surge tank had been lost. Corrective actions were to drain the low pressure sensing line of the surge tank level transmitter, re-pressurize the RWCU surge tank with nitrogen, inspect RWCU pumps and piping, and reset/restart the RWCU system. This event had no adverse safety significance because the RWCU system properly isolated on the high pressure signal and isolation of the RWCU system for short periods has no effect on power operation or coolant chemistry limits. Two recent previous events involving closure of Primary Containment Isolation valves while adjusting pressure/flow on the RWCU system have been reported by LERs 91-014/0500237 and 91-019/0500237.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Form Rev 2.0

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			Page (3)		
		Year	Sequential Number	Revision Number			
Dresden Nuclear Power Station	0   5   0   0   0   2   3   7	9   1	-   0   3   4	-   0   0	0   2	of	0   4

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-XXXX)

**EVENT IDENTIFICATION:**

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

**A. CONDITIONS PRIOR TO EVENT:**

Unit: 2	Event Date: October 12, 1991	Event Time: 1643 Hours
Reactor Mode: N	Mode Name: Run	Power Level: 95%
Reactor Coolant System (RCS) Pressure: 1006 psig		

**B. DESCRIPTION OF EVENT:**

On October 12, 1991, at 1643 hours, with Unit 2 at 95% power, a Reactor Water Cleanup (RWCU) system isolation occurred resulting in Primary Containment Isolation [JM] Motor Operated Valves (MOVs) 2-1201-1 and 2-1201-2 fully closing. Prior to the isolation, a Reactor Operator (RO) noticed Control Room Panel 902-4 alarm [JL] D-12, RWCU Surge Tank Level Low, flashing without an audible horn. The RO then noticed RWCU system pressure oscillating. In an attempt to control the the pressure oscillations, the RWCU pressure control valve (PCV) control station was transferred from "Auto" to "Manual". Upon performing this transfer, the RWCU system isolated on a high pressure signal as Panel 902-4 alarm F-12, RWCU System After Non-Regenerative Heat Exchangers Pressure High, was received. The 2B RWCU recirculation pump automatically tripped and MOVs 2-1201-1, 2-1201-2 and 2-1201-7 closed. Although this event was not initiated by Primary Containment Isolation Logic, it did result in the closure of Primary Containment Isolation MOVs 2-1201-1 and 2-1201-2.

The pressure oscillations were not previously recognized by the RO because the RWCU system pressure and flow recorder, 2-1290-12, chart drive was not operating properly. On investigation, it was found that the nitrogen gas blanket on the RWCU surge tank had been lost. Immediate corrective actions were to drain the low pressure sensing line of the surge tank level transmitter, repressurize the RWCU surge tank with nitrogen, inspect RWCU pumps and piping, and reset/restart the RWCU system. Operations personnel monitored the surge tank level on an increased frequency throughout the shift. The total time the system was inoperable was 35 minutes. Recorder 2-1290-12 was repaired within 48 hours after the isolation.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)		
		Year	///	Sequential Number	///	Revision Number				
Dresden Nuclear Power Station	0   5   0   0   0   2   3   7	9   1	-	0   3   4	-	0   0	0   3	OF	0   4	

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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 cause of the RWCU recirculation pump trip and system isolation was due to a momentary pressure spike. The pressure spike was the result of the RWCU surge tank becoming filled with water. This occurred when the low pressure sensing line of the surge tank level transmitter became filled with water due to condensate accumulating in the line. As the condensate level in the sensing line increased, so did the normal level setting of the surge tank. Eventually, the surge tank became water bound, due to displacement of its dampening nitrogen blanket, and the pressure spikes began due to loss of the dampening nitrogen blanket. In accordance with the Level 1 Operator Round Book, an Operator had checked the surge tank pressure and level once a shift. However, the level changed and the nitrogen blanket was lost between Operator inspections. A maintenance history review indicates that this type of event has not been a recurring problem.

Another contributor to this event was the unavailability of the RWCU pressure/flow recorder 2-1290-12 due to the chart drive not operating properly. Without this recorder, there was no pressure/flow trending data displayed and the Operators were not able to detect the pressure oscillations. Work Request (WR) 03914 had been initiated on 9/27/91 to repair the recorder. The WR was not received by the IM department until 10/9/91.

WR 04230 was initiated to determine the cause of the flashing annunciator window without receiving an audible horn. On 11/4/91, the Electrical Maintenance Department (EMD) performed troubleshooting under this WR. It was determined that if, during annunciator window testing (which is performed routinely by the ROs), the Annunciator Reset pushbutton is depressed to reset the windows without first depressing the Acknowledge pushbutton, the first window to alarm after the test will flash but will not have an audible alarm. Presently, there is a modification being performed to upgrade the annunciator system and upon the completion of this modification, the horn logic will be improved to eliminate this concern.

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 in a timely manner, 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 no safety significance.

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E. CORRECTIVE ACTIONS:

Immediate corrective actions were to dispatch an Operator to the RWCU pump room to investigate. The Operator found the surge tank local level indication fluctuating. An accurate reading could not be obtained. The Operator checked the surge tank level by opening a drain valve on the low pressure sensing line to the surge tank level transmitter. Water was observed to be draining from this line, indicating that the surge tank no longer had a nitrogen blanket and was full of water. Nitrogen was added as required to return RWCU surge tank pressure and level indication to the normal range. The Operator also inspected the RWCU pumps and piping. No problems were found. The RWCU system was restarted. Operations personnel monitored the surge level on an increased frequency throughout the shift. Recorder 2-1290-12 was repaired by replacing the chart drive motor. These repairs were completed within 48 hours after the isolation.

The Training Department will issue a memo to inform the Operators that they must depress the Acknowledge pushbutton prior to the Reset pushbutton when performing annunciator lamp testing (237-200-91-18301).

F. PREVIOUS OCCURENCES:

LER/Docket Numbers Title

91-014/0500237 Primary Containment Isolation Closure Due To Reactor Water Cleanup System Isolation

This event involved unplanned automatic closure of two Primary Containment Group III Isolation valves due to shorting of an indicating light socket at a local control station, while an Operator was changing the bulb. Corrective action included addition of a precaution to the local control station surveillance.

91-019/0500237 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 a RWCU isolation while adjusting flow during a unit startup. Corrective actions included adding a precaution to Dresden Operating Procedure 1200-3 to warn of RWCU perturbations under low power conditions.

G. COMPONENT FAILURE DATA:

As no primary component failed during this occurrence, this section is not required.