



Commonwealth Edison

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

August 5, 1992

CWS LTR #92-497

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

Licensee Event Report #92-25, Docket #050237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(iv).

L. F. Merwin for

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/714)

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LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1) <p style="text-align:center;">Dresden Nuclear Power Station, Unit 2</p>	Docket Number (2) <p style="text-align:center;">0 5 0 0 0 2 3 7</p>	Page (1) <p style="text-align:center;">1 of 0 5</p>
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Title (4)
Isolation Condenser Vent Valves 2-1301-17 and 2-1301-20 Closure Due to Unknown Causes

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	1	7	9	2	9	2	0	2	5	0	0	0	8	0	1	9	2	N/A	

OPERATING MODE (9) <p style="text-align:center;">N</p>	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)																				
POWER LEVEL (10) 0 4 9	<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 checked="" type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input 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 Mark Blakemore, Technical Staff System Engineer								TELEPHONE NUMBER Ext. 2421			
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)			
Yes (If yes, complete EXPECTED SUBMISSION DATE)								X NO			

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

At 0854 hours on July 17, 1992, during routine panel walkdowns, a Nuclear Station Operator (NSO) discovered that the normally open Isolation Condenser Vent Valves 2-1301-17 and 2-1301-20 were closed. No computer or annunciator alarms were received indicating the cause of this valve movement. The NSO verified on the computer that the valves had closed at 0848 hours. The valves were reopened via their common control switch at 0857 hours. Work Request 11013 was initiated and the Technical Staff System Engineer was notified to investigate the event. The investigation identified significant work activity in the vicinity of the 902-62 panel, which contains relays which are part of the control circuit for both valves. However, no conclusive evidence was obtained that could tie this work activity to the event; therefore, the cause is being reported as unknown. The Electrical Maintenance Department verified no loose wires in the 902-62 cabinet that would have made it more sensitive to vibrations. The safety significance of this event was minimal because the valves failed to their failsafe position and because they were closed for approximately only nine minutes. No previous events of this type have occurred.

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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:

Isolation Condenser Vent Valves 2-1301-17 and 2-1301-20 Closure Due to Unknown Causes

A. CONDITIONS PRIOR TO EVENT:

Unit: 2 Event Date: July 17, 1992 Event Time: 0848 Hours
 Reactor Mode: N Mode Name: Run Power Level: 49%
 Reactor Coolant System (RCS) Pressure: 940 psig

B. DESCRIPTION OF EVENT:

At 0854 hours on July 17, 1992, during routine panel walkdowns, a Nuclear Station Operator (NSO) discovered that the normally open Isolation Condenser Vent Valves 2-1301-17 and 2-1301-20 were closed. No computer or annunciator alarms were received indicating the cause of this valve movement. The NSO verified on the computer that the valves had closed at 0848 hours. The valves were reopened via their common control switch at 0857 hours. Work Request (WR) 11013 was initiated, and the Technical Staff System Engineer was notified to investigate the event.

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 2-1301-17 and 2-1301-20 Isolation Condenser Vent Valves which are also Primary Containment isolation valves.

The root cause of this event is unknown; however, the circumstances surrounding the event suggest that work in vicinity of relay cabinets associated with these valves may have inadvertently caused a momentary open in the control circuitry for these valves.

The investigation began with a review of the schematic diagram (See Figure 1) for the Isolation Condenser Vent Valves 2-1301-17 and 2-1301-20 to identify potential circuit locations that could cause both valves to close. The locations are:

- 1) Fuse (595-715) located in the 902-3 panel in the Control Room (CR).
- 2) Contacts from the control switch for valves 1301-17 and 20 on the 902-3 panel.
- 3) The 1301-17R relay contacts 2-8 located in the 902-61 panel in the Auxiliary Electric Equipment Room.

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- 4) The 1301-20R relay contacts 2-8 located in the 902-62 panel in the Unit 2 Battery Room.
- 5) Contacts from the 1301-3 valve control switch also located in the 902-3 panel.
- 6) The 595-118A(B) relays located in the 902-41 panel.
- 7) The 595-111A(B) and the 595-112A(B) relays located in the 902-40 and 41 panels.
- 8) The 595-116A(B) relays located in the 902-40 and 41 panels.

The key information obtained from the event and the circumstances surrounding it were:

- 1) The 2-1301-17 and 2-1301-20 valves closed without any associated alarms.
- 2) Both valves were successfully reopened via their common control switch.
- 3) The only significant work in progress at the time of the event was ventilation work for the control room which was in progress in the Unit 2 Battery Room.
- 4) Personnel were labeling equipment in the 902-62 panel in the Unit 2 Battery Room but stated that they did not begin work in this panel until approximately one and a half hours after the event.
- 5) The event has not reoccurred.

Upon reviewing the possible circuit failures that could have caused the event, several can be eliminated because no associated alarms were received, because simultaneous opens on individual contacts from separate relays would be required, and because no known activities were in progress in any other locations but the Unit 2 Battery room. Based on the available evidence, the postulated cause of this event can be attributed to the activity in the Unit 2 Battery room which may have jarred the 902-62 panel, causing the 2-8 contacts on the 1301-20R relay to momentarily open and de-energize the circuit.

Although the evidence leads to an apparent cause due to jarring of the 1301-20R relay, no conclusive evidence is available to determine a definite root cause.

D. SAFETY ANALYSIS OF EVENT:

The purpose of the 2-1301-17 and 2-1301-20 valves is to prevent the accumulation of non-condensable gasses that could potentially lessen the effectiveness of the isolation condenser system. The 2-1301-17 and 20 valves are also part of the Primary Containment Group I and Group V logic circuitry and will close when one of the following conditions is met;

Group I

- 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;

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

D. SAFETY ANALYSIS OF EVENT: (continued)

Group V

300% Isolation Condenser Steam or Condensate Flow;

Initiation Signal

The initiation signal for the Isolation Condenser occurs when reactor pressure is 1070 psig after a 15 second time delay. The 1301-17 and 1301-20 valves auto close upon the 1301-3 valve opening.

The Primary Containment Isolation System 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. The Group I Primary Containment Isolation System is comprised of those lines which penetrate both the reactor vessel and the primary containment and are open to other systems. The Group V Primary Containment Isolation System is comprised of the 1301-1,2,3,4,17, and 20 valves.

During normal operation, the 1301-17 and 1301-20 valves have steam flowing through them to the "A" Main Steam line. Upon a Group I or Group V isolation or upon an auto-initiation of the Isolation Condenser, both valves are required to close. For this event, the valves failed to their safe position. Furthermore, both valves were only closed for approximately nine minutes. Therefore, the safety significance of this event is considered to be minimal.

E. CORRECTIVE ACTIONS:

The immediate corrective action taken was to return the valves to their normally open position via their control switch. Because jarring of the 902-62 panel was determined to be the probable cause, the Electrical Maintenance department (EMD) performed a thermography inspection and verified that no loose connections were located in the 902-62 panel that could have made the 1301-20R relay more sensitive to vibrations. This work was completed under WR 11013 and no problems were identified. The Operations department will install signs on the 902(3)-61 and 902(3)-62 panels, to identify these relay cabinets as containing vibration sensitive equipment (237-200-92-13701).

F. Previous Occurrences

None

G. COMPONENT FAILURE DATA:

<u>Manufacturer</u>	<u>Nomenclature</u>	<u>Model Number</u>	<u>Mfg. Part Number</u>
N/A	N/A	N/A	N/A

An industry-wide NPRDS data search was not performed.

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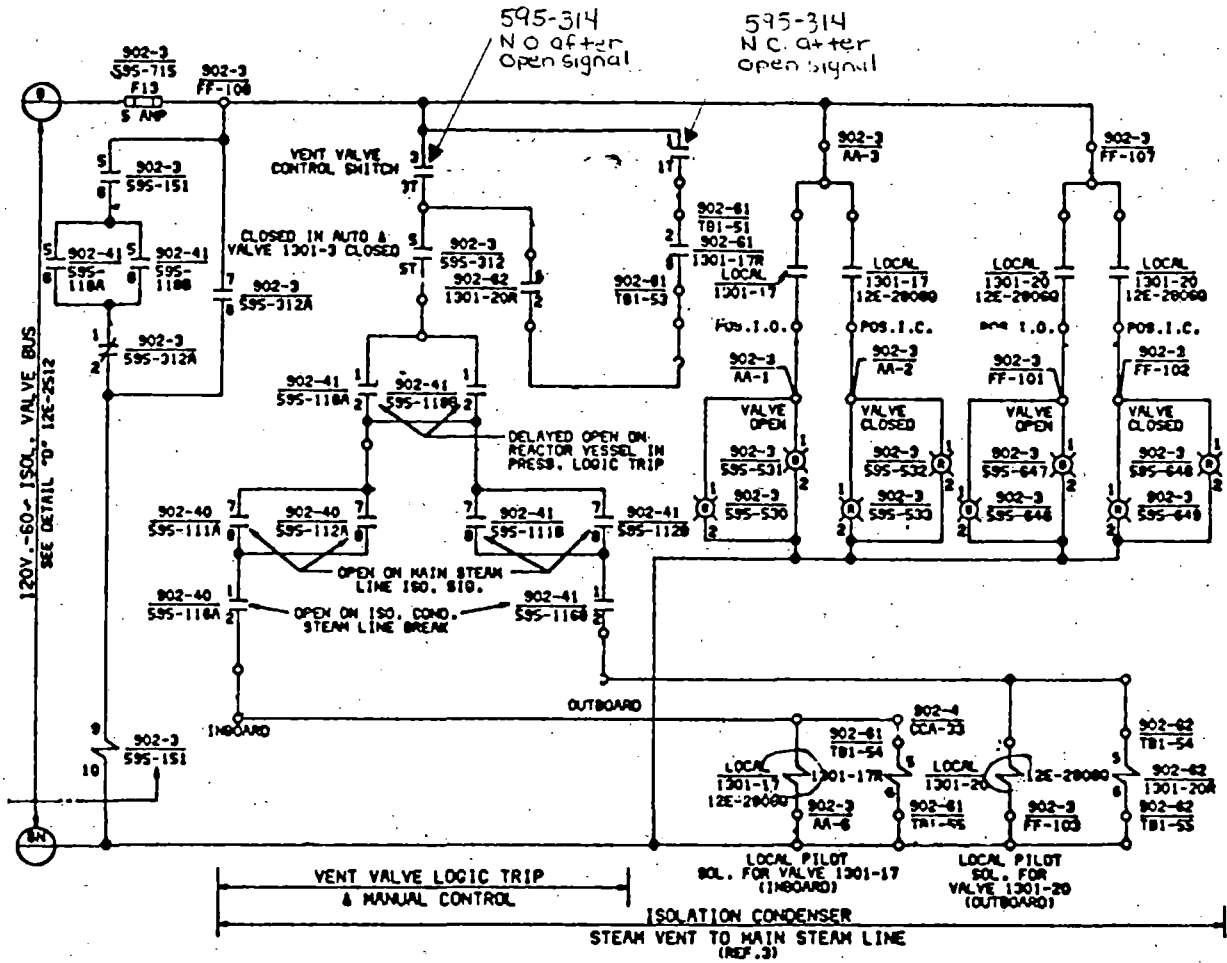


Figure 1