



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

January 16, 1991

EDE LTR #91-008

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

Licensee Event Report #90-019, Docket #050237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(i)(B).

E. D. Eenigenburg
Station Manager
Dresden Nuclear Power Station

EDE/dal

Enclosure

cc: A. Bert Davis, Regional Administrator, Region III
File/NRC
File/Numerical

ZDVR/105

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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 10 10 10 12 13 17
 Page (3) 1 of 0 5

Title (4) Electromatic Relief Valve Pressure Switch Outside Technical Specification
 Due to Instrument Setpoint Drift

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	1990	9	0	0	1	1	1990	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 type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> Other (Specify
<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	in Abstract
<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)	below and in
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	Text)

LICENSEE CONTACT FOR THIS LER (12)

Name: Neil Spooner, Technical Staff System Engineer
 Ext. 2789
 TELEPHONE NUMBER: AREA CODE 8 1 5 9 14 2 -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	
X	S	B	P	C	0	D	2	4	3	Y

SUPPLEMENTAL REPORT EXPECTED (14)

Expected Submission Date (15) X NO
 Yes (If yes, complete EXPECTED SUBMISSION DATE)

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

On December 19, 1990 while performing Dresden Instrument Surveillance (DIS) 250-3, Electromatic Relief Valve (ERV)/Target Rock Valve Pressure Switch Calibration, the pressure switch for ERV 2-203-3C was found outside the Technical Specification 4.6.E setpoint tolerance limit of +/- 1%. During recalibration of the pressure switch, difficulty was encountered adjusting the setpoint to within the allowable range. Unit 2 was in a refuel outage when this setpoint discrepancy was discovered. The root cause of this setpoint discrepancy has been attributed to instrument setpoint drift, contributed to by the pressure switch Bourdon tube having an abnormally wide pressure rating. As corrective action, the Bourdon tube was replaced with one of normal pressure range, and the pressure switch for ERV 2-203-3C was recalibrated to within Technical Specification limits per DIS 250-3. The remaining ERV pressure switches tested satisfactorily, and all Unit 2 and Unit 3 ERV pressure switch Bourdon tubes were checked for proper rating. The safety significance of this event was minimal because the main steam line Safety Valves were available to insure that the reactor coolant system pressure limit would not be exceeded, and the ERV setpoint discrepancy had no effect on the operation of the Automatic Depressurization System (ADS). A previous occurrence of this type at Dresden Station was reported by LER 89-7/050237.

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

The setpoint is a mechanical type adjustment with a spring tensioned screw. DIS 250-3 instructs the Instrument Maintenance Department personnel to isolate the pressure controller being tested and then obtain the "as found" trip and reset setpoints. This revealed the incorrect trip setting. The procedure then states to recalibrate the pressure switch and repeat the "as found" trip test to obtain the "as left" trip and reset setpoints. During recalibration of the pressure switch, difficulty was encountered adjusting the setpoint to within the allowable range. Further investigation revealed that the pressure switch was equipped with a Bourdon tube having a pressure range of 160 to 3200 psig, as opposed to the normal Bourdon tube pressure range of 50 to 1200 psig for this application. It is believed that this abnormally wide Bourdon tube pressure rating contributed to amplification of a minor amount of setpoint drift (resulting in an upward shift of 1.4% during the operating cycle), and complicated recalibration efforts. Upon replacement of the Bourdon tube with one of normal pressure range, calibration and repeatability checks were completed satisfactorily. All the remaining Unit 2 and Unit 3 ERV pressure switch Bourdon tubes were verified to have the normal pressure rating. A Maintenance History Review indicated the previous event described in Section F below; however, the previous case did not involve Bourdon tube pressure ratings, and there appears to be no adverse trend upon reviewing previous history.

D. SAFETY ANALYSIS OF EVENT:

Technical Specification 4.6.E states that all ERVs shall have the pressure switch setpoint checked each refuel outage. The allowable setpoint tolerance for each pressure switch is +/- 1%. Although the ERV 2-203-3C setpoint was potentially 1.4% out of tolerance at some time during the previous cycle, it would have operated if challenged at the as-found setpoint. The remaining ERVs were verified to satisfy the Technical Specification tolerance band.

The frequency and testing requirements for the ERVs are also specified in the In-Service Testing (IST) Program which is based on Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code. Adherence to these code requirements provides adequate assurance regarding the proper operational readiness of these valves. The ASME overpressurization transient analysis, which verifies that the reactor coolant system pressure Safety Limit is not exceeded, does not take credit for ERV operation; the analysis is based only upon automatic operation of the main steam [SB] Safety Valves, which open at higher pressure setpoints and discharge directly to the Primary Containment.

The ERVs also are the functioning components of the ADS which is provided as a backup for the High Pressure Coolant Injection (HPCI) [BJ] System to depressurize the reactor pressure vessel during a postulated design basis loss of coolant accident, involving small area breaks within primary system piping. Automatic actuation of the ADS requires coincident occurrence of reactor water low-low level and drywell high pressure signals sustained for a period of two minutes, and at least one Low Pressure Emergency Core Cooling System (ECCS) pump [BM, BO] operating to provide reactor inventory control. This time delay circuit is provided in order to allow for automatic initiation of the HPCI system. If the HPCI system failed to restore reactor inventory above the low-low reactor water level setpoint within the two minute time delay period, automatic initiation of ADS would open the ERVs and depressurize the reactor to provide for automatic injection of the Low Pressure Coolant Injection (LPCI) [BM] and Core Spray [BO] Systems in order to restore reactor inventory. Also, to give additional protection for postulated primary system breaks outside the primary containment, automatic ADS initiation will occur if the reactor low-low level condition is sustained for a period of 8.5 minutes provided at least one low pressure ECCS pump is operating to provide reactor inventory control. The ERV pressure setpoint discrepancy would have had no effect on proper operation of the ADS function. For these reasons, the safety significance of this event can be considered minimal.

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E. CORRECTIVE ACTIONS:

1. The Bourdon tube for ERV 2-203-3C was replaced; calibration and repeatability checks were then completed satisfactorily.
2. All remaining Unit 2 and Unit 3 ERV pressure switch Bourdon tubes were verified to be equipped with the normal Bourdon tube type.
3. Consultation with the vendor indicates that these components are only assembled and shipped with the specified Bourdon tube pressure range. However, since the Bourdon tube is internal to the assembly and was replaced as a unit during the previous refuel outage, it is believed that a manufacturing error may have been the cause. The following actions were therefore initiated.
 - a. Current parts receiving inspection/dedication procedures were verified to contain verification of proper Bourdon tube pressure range and precycling to insure repeatability. The spare components in Stores have received these inspections.
 - b. The System Engineer will submit a Network item to inform other sites of this event (237-200-90-15401).
 - c. Although it is believed that this event did not result in functional failure of ERV 2-203-3C (i.e., only contributed to relatively minor setpoint drift), the Engineering and Construction 10CFR 21 Coordinator has been notified to perform an evaluation to insure that 10CFR 21 reporting is not required (237-200-90-15402).

F. PREVIOUS OCCURRENCES:

LER/Docket Numbers Title

89-007/0500237 Unsatisfactory Main Steam Relief Valve Pressure Setpoints Due to Instrument Drift and Limit Switch Failure

During performance of DIS 250-3, pressure switches for ERV 2-203-3A and 2-203-3E were found outside Technical Specification tolerance of +/- 1%. Additionally, the pressure switch for ERV 2-203-3C was found to have shorted micro switch contacts. The pressure switch for ERV 2-203-3C was replaced, and all pressure switches were recalibrated to within Technical Specification.

This is the second reportable occurrence of this type at Dresden Station.

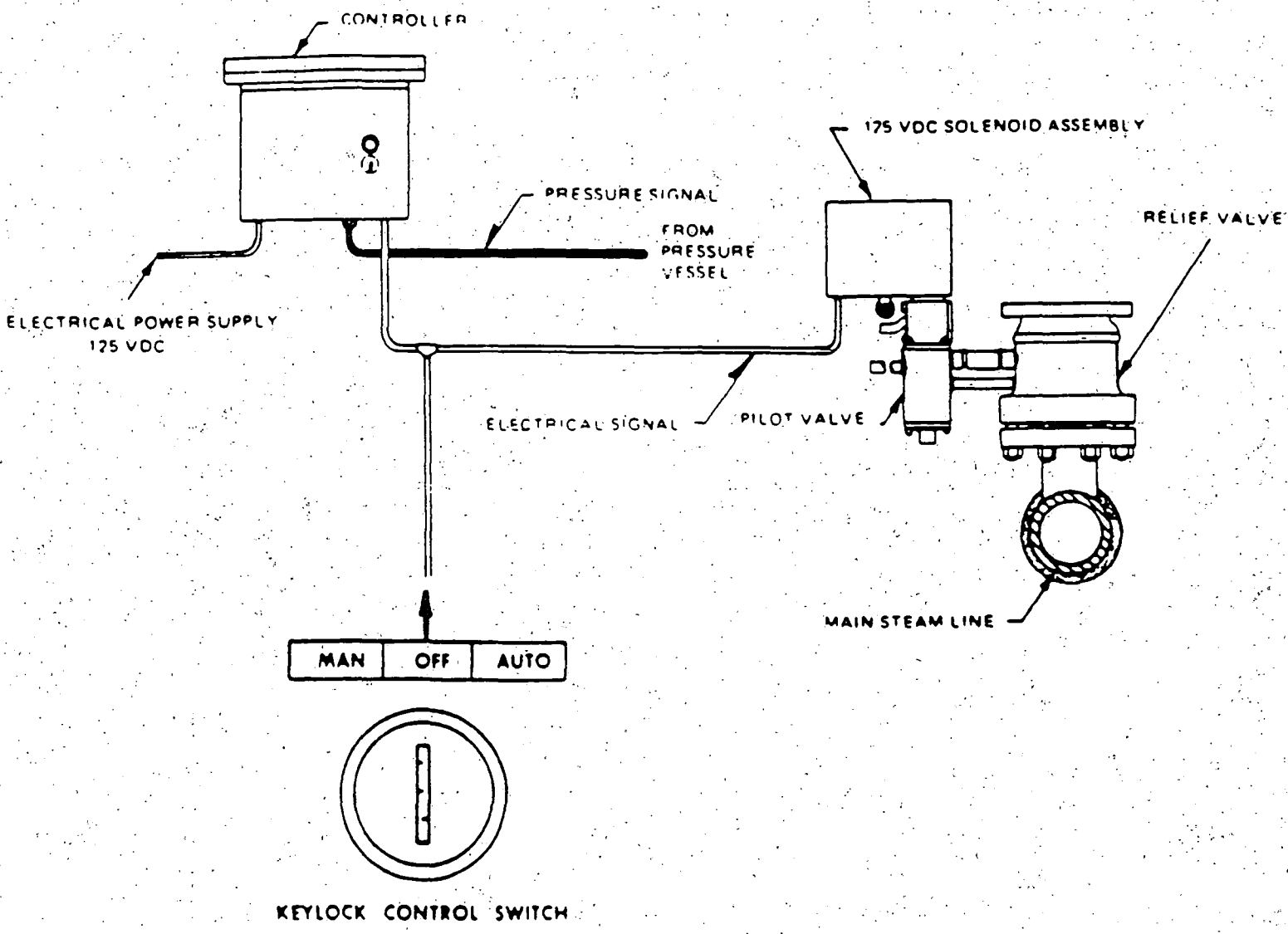
G. COMPONENT FAILURE DATA:

<u>Manufacturer</u>	<u>Nomenclature</u>	<u>Model Number</u>	<u>Mfg. Part Number</u>
Dresser Industries	Pressure Controller	1539VX-DC-1-XCR	27597C

An industry wide NPRDS data base search was performed on all Dresser Industries Model 1539 pressure controllers. A total of 59 events were identified, of which 52 events were associated with instrument setpoint drift. Only two of these events were listed for Dresden Station.

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ELECTROMECANICAL RELIEF VALVE AND CONTROLS

Figure 1