

Commonwealth Edison Company
Dresden Generating Station
6500 North Dresden Road
Morris, IL 60450
Tel 815-942-2920

ComEd

October 17, 1996

JSPLTR: 96-0190


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

Enclosed is Licensee Event Report 96-005, Revision 1, Docket 50-237, which is being submitted pursuant to 10CFR50.73(a)(2)(i)(b) which requires the reporting of any condition prohibited by the Technical Specifications.

This supplemental report is provided to report additional out of tolerance instances found on Unit 2 and Unit 3 while performing corrective actions of the original LER.

If you have any questions, please contact Pete Holland, Dresden Regulatory Assurance Supervisor at (815) 942-2920, extension, 2714.

Sincerely,


Stephen Perry
Vice President
BWR Operations

JSP/JZ:pt

Enclosure

cc: A. Bill Beach, Regional Administrator, Region III
NRC Resident Inspector's Office
Illinois Department of Nuclear Safety

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NRC FORM 366 (5-92)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95									
LICENSEE EVENT REPORT (LER)										ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.				
FACILITY NAME (1) Dresden Nuclear Power Station, Unit 2					DOCKET NUMBER (2) 05000237			PAGE (3) 1 OF 6						
TITLE (4) Unit 2 and Unit 3 Electromatic Relief Valve Pressure Switches Found Outside of Technical Specification Tolerance Due to 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 NAME	DOCKET NUMBER				
03	09	96	96	-- 005 --	01	10	17	96	Dresden Unit 3	05000249				
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)												
N		20.2201(b)			20.2203(a)(3)(i)			50.73(a)(2)(iii)		73.71(b)				
POWER LEVEL (10)		20.2203(a)(1)			20.2203(a)(3)(ii)			50.73(a)(2)(iv)		73.71(c)				
000		20.2203(a)(2)(i)			20.2203(a)(4)			50.73(a)(2)(v)		OTHER				
		20.2203(a)(2)(ii)			50.36(c)(1)			50.73(a)(2)(vii)		(Specify in Abstract below and in Text, NRC Form 366A)				
		20.2203(a)(2)(iii)			50.36(c)(2)			50.73(a)(2)(viii)(A)						
		20.2203(a)(2)(iv)			X 50.73(a)(2)(i)			50.73(a)(2)(viii)(B)						
		20.2203(a)(2)(v)			50.73(a)(2)(ii)			50.73(a)(2)(x)						
LICENSEE CONTACT FOR THIS LER (12)														
NAME D. Spencer						Ext. 3292		TELEPHONE NUMBER (Include Area Code) (815) 942-2920						
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	SB	63	B070	Y										
SUPPLEMENTAL REPORT EXPECTED (14)														
YES (If yes, complete EXPECTED SUBMISSION DATE).					X NO		EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR			

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On March 9, 1996, while in the Shutdown mode for a refueling outage during Dresden Instrument Surveillance (DIS) 0250-03, "Electromatic Relief Valve/Target Rock Valve Pressure Switches Calibration," the pressure switch setpoints for ERV 2-0203-3A,B,D, and E were identified with setpoints below the Technical Specification ERV Actuation Setpoint/Tolerance of $\pm 1\%$ of the setpoint value. The cause was attributed to setpoint drift. The drift resulted from an extended refueling outage that increased the time between calibration surveillances. The Technical Specification requirement of calibration each refueling outage was met. Each of the pressure switches was then recalibrated satisfactorily. The safety significance of this event is minimal since the "As Found" setpoint is in the conservative direction. Corrective Actions included changing the calibration surveillance frequency and recalibration of the affected switches on both units 2 and 3. This supplement is being submitted to report additional out of tolerance instances found on Unit 2 and Unit 3 while performing corrective actions.

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PLANT AND SYSTEM IDENTIFICATION

General Electric - boiling water reactor - 2527 Mwt rated core thermal power.

Energy Industry Identification System (EIIS) codes are identified in the text as [XX] and are obtained from IEEE Standard 805-1984, IEEE Recommendation Practice for System Identification in Nuclear Power Plants and Related Facilities.

EVENT IDENTIFICATION:

Unit 2 and Unit 3 Electromatic Relief Valve Pressure Switches Found Outside of Technical Specification Tolerance Due to Setpoint Drift

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 2 Event Date: March 9, 1996 Event Time: 1330 Hours
 Reactor Mode: N Mode Name: Shutdown Power Level: 0%
 Reactor Coolant System Pressure: 0 psig

B. DESCRIPTION OF EVENT:

This event is being reported as required by 10CFR50.73(a)(2)(1)(b) which requires the reporting of any condition prohibited by the Technical Specifications.

This supplement is being submitted to report additional Electromatic Relief Valve/Target Rock Valve Pressure Switches out of tolerance instances found on Unit 2 and Unit 3 while performing corrective actions as a result of LER 96-005 (Docket 05000237) and LER 96-010 (Docket 05000249).

On March 9, 1996 at 1330 with Unit 2 in the Shutdown mode for a refueling outage, while performing Dresden Instrument Surveillance (DIS) 0250-03, Electromatic Relief Valve/Target Rock Valve Pressure Switches Calibration, the pressure switch setpoints for ERV 2-0203-3A,B,D and E were identified with setpoints below Technical Specification 4.6.e ERV Actuation Setpoint/Tolerance of $\pm 1\%$ of the setpoint value.

The March 9, 1996 "As Found" setpoint of all pressure switches were as follows:

RELIEF VALVE	SETPOINT*	+1% TOLERANCE*	"AS FOUND"*	"AS LEFT"*
ERV 2-0203-3A	1134 PSIG	1123-1145 PSIG	1120 PSIG	1138 PSIG
ERV 2-0203-3B	1111 PSIG	1100-1122 PSIG	1096 PSIG	1113 PSIG
ERV 2-0203-3C	1111 PSIG	1100-1122 PSIG	1113 PSIG	1114 PSIG
ERV 2-0203-3D	1134 PSIG	1123-1145 PSIG	1120 PSIG	1136 PSIG
ERV 2-0203-3E	1134 PSIG	1123-1145 PSIG	1118 PSIG	1138 PSIG

* Technical Specification values plus head correction

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The Target Rock relief valve (2-0203-3A) has the ability to function as a safety valve as well as a relief valve. The ERVs are electrically actuated pressure relief devices. The pressure switches consist of a bourdon tube type pressure sensing element which actuates a snap-action dual control limit switch, which in turn energizes a heavy duty relay to switch the solenoid load. The pressure switch, in conjunction with the control switch and the Automatic Depressurization System (ADS) [SB] logic contacts, supplies 125V DC electrical power to the solenoid assembly in order to operate the pilot valve. The pilot valve in turn controls the opening and closing of the relief valve.

The pressure switches for ERV 2-0203-3A,B,D, and E were then calibrated satisfactorily in accordance with DIS 0250-03. DIS 0250-03 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 out of tolerance trip settings. The procedure then states to recalibrate the pressure switches and repeat the "As Found" trip test to obtain the "As Left" trip and reset setpoints.

Two weeks after the discovery of the out of tolerance condition, DIS 0250-03 was performed again and all five of the pressure switches were within the Technical Specification limits. Engineering identified that pressure switch 2-0203-3A drifted more than the others and was subsequently replaced under work request 960031495.

At the time of the Unit 2 event, no systems or components were inoperable which could have contributed to the event. In addition, no manual or automatic engineered safety feature (ESF) [JE] actuation occurred as a result of this event.

Unit 3 ERV Pressure Switch Discussion

The operation of Unit 3 ERV pressure switches was reviewed. It was determined that the Unit 3 switches should be calibrated and they were calibrated on July 30, 1996 while the unit was in cold shutdown. During this calibration the 3B and 3E switch were found to exceed the low limit of Technical Specifications.

The July 30, 1996 "As Found" setpoint of the Unit 3 ERV pressure switches follows:

Relief Valve	Tech Spec Setpoint	T.S. Required +1% Tolerance	As Found*	As Left*
ERV 3-0203-3B	1101 PSIG	1090-1112 PSIG	1073.6 PSIG	1100.6 PSIG
ERV 3-0203-3E	1124 PSIG	1113-1135 PSIG	1111.6 PSIG	1123.6 PSIG

* Calibration values less head correction.

Specifics of this Unit 3 out of tolerance condition was reported to the Commission by LER 96-010 (Docket 05000249). The pressure switches were subsequently recalibrated to within Technical Specification and procedural limits.

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C. CAUSE OF EVENT:

The root cause of the pressure switch out of tolerances was attributed to setpoint drift. The cause of setpoint drift has been determined to be instrument repeatability and time dependent drift. A statistical evaluation of instrument setpoints performed under calculation NED-I-EIC-0093 revision 2 indicates that the calibration frequency of the affected instruments must be increased to monthly in order to meet the tolerances stated in Limiting Condition for Operation 3.6. Prior to this event, these instruments had been calibrated on a refueling outage frequency which increased the potential for normal instrument drift to result in an out of tolerance setpoint.

An evaluation of instrument loop errors performed in the above referenced calculation has indicated that the +/- 1 percent of setpoint error stated in Technical Specification 4.6.2 is more restrictive than the calculated loop errors for this loop. The +/- 1 percent referenced in the Technical Specification is based on an allowable setpoint value for a valve, and does not reflect instrument tolerances and drift terms.

D. SAFETY ANALYSIS:

Technical Specification 4.6.e states that all ERVs shall have the pressure switch setpoint checked each refueling outage. The Technical Specification allowable setpoint error for each pressure switch is $\pm 1\%$. The safety significance of this event is minimal since the "As Found" setpoint was in the low or conservative direction. Reactor pressure safety limits would not have been exceeded during any design basis event.

The ERVs are the functioning components of the Automatic Depressurization System (ADS). ADS is a backup for the High Pressure Coolant Injection (HPCI) [BJ] system for depressurization of 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. Automatic initiation of ADS for line breaks outside secondary containment requires only the occurrence of reactor water low-low level sustained for 8.5 minutes. If the HPCI system failed to restore reactor inventory above the low-low reactor level setpoint within the 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) [BD] and Core Spray [BM] systems in order to restore reactor inventory. The ERV pressure setpoint discrepancies 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:

- E.1 Recalibrated all pressure switches to within their Technical Specification limits in accordance with DIS 0250-03.
- E.2 A setpoint calculation has been performed to reflect the setpoint and quantify normal drift factors. (Complete, NTS#2371809600501)
- E.3 Pressure switch 2-0203-3A was replaced prior to start-up from refueling outage D2R14 under work request 960031495.
- E.4 The calibration surveillance frequency has been increased to monthly in order to eliminate the time dependent instrument variable and provide further monitoring of performance for both units. A design change for test taps was installed to the instrumentation sensing lines in order to allow on line calibration for both units. (Complete, NTS#2371809600502)
- E.5 September 1996 performance data following initial out of tolerance conditions
 A calibration check was performed on the Unit 2 ERV pressure switches on September 17, and Unit 3 ERV pressure switches were tested on September 19, 1996. The Unit 2 "3A" switch and the Unit 3 "3B" and "3E" switches were found to be below the low Technical Specification limit.

The "As Found" (PSIG) setpoints of the out of tolerance pressure switches follows:

DATE	RELIEF VALVE	SETPOINT*	+1% TOLERANCE*	"AS FOUND"*	"AS LEFT"*
9/17/96	2-0203-3A	1137.6	1128.3-1146.9	1125.3	1136.1
9/19/96	3-0203-3B	1115.5	1106.2-1124.8	1100.3	1115.1
9/19/96	3-0203-3E	1134.8	1124.2-1145.4	1123.5	1135.7

* TS values plus head correction

The cause of this observed drift is due to random instrument drift as described previously.

Long term corrective actions will include a revision to Technical Specification 3/4.6 to reflect the fact that the affected relief function setpoints are not bounded by a lower limit. This change has already been reviewed by NRC-NRR as documented in license amendments number 140 for Unit 2 and 134 for Unit 3 (USNRC to ComED letter dated 9/21/96). Implementation of this specification change will follow the established regulatory schedule.

Calibration will continue on a monthly frequency until implementation of Updated Technical Specifications, at which time the calibration will be performed on a frequency and to values reflected in calculations and procedures.

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F. PREVIOUS OCCURRENCES:

LER No./Docket Number

007/05000237 Unsatisfactory Main Steam Relief Valve Pressure Setpoints Due To Instrument Drift and Limit Switch Failure.

Corrective actions included recalibration of 2-0203-3A, E. The faulty limit switch on 2-0203-3C was corrected by replacement of the pressure switch.

019/05000237 Electromatic Relief Valve Pressure Switch Outside Technical Specification Due to Instrument Setpoint Drift.

Corrective actions included replacing the Bourdon Tube that had an abnormally wide pressure rating and checked others for wide pressure rating. No other abnormal bourdon tubes were found.

010/05000249 Electromatic Relief Valves 3-0203-3B and E Pressure Switches Found Out of Tolerance Due to Setpoint Drift.

With Unit 3 in the Shutdown mode for a forced outage, pressure switch setpoints for Electromatic Relief Valve (ERV) 3-0203-3B and E were identified with setpoints below the Technical Specification Electromatic Relief Valve) ACTUATION Setpoint/Tolerance of $\pm 1\%$ of the setpoint value. The cause was attributed to setpoint drift. The drift resulted from an extended refueling outage that increased the time between calibration surveillances. Corrective Actions include calibration of the pressure switches and a modification to allow calibration of the switches at an increased frequency.

G. COMPONENT FAILURE DATA:

Manufacturer	Nomenclature	Model Number
Barksdale Controls	PRESSURE SWITCH	B2S-H12, B2T-M12

An industry wide NPRDS data base search was performed on Barksdale Control Division Models B2T-M12, B2T-H12, B2S-M12 and B2S-H12 pressure switches. A total of 84 events were identified, of which 73 events were associated with instrument setpoint drift. A majority of the 73 events were reported from a single station. Five of these events were reported for Dresden Station, although not on the Electromatic Relief Valve pressure switches.