

LICENSEE EVENT REPORT (LER)

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 3
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TITLE (4)  
Unit 2 Reactor Scram on Greater Than 10% Stop Valve Closure Due to Valve Failure

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 1	8 6	8 6	0 0 1	0 0	0 2	1 9	8 6	N/A			0 5 0 0 0		
									N/A			0 5 0 0 0		

OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)									
POWER LEVEL (10) 0 4 7	20.402(b)		20.406(c)	X	50.73(a)(2)(iv)	73.71(b)				
	20.408(a)(1)(i)		50.38(e)(1)		50.73(a)(2)(v)	73.71(c)				
	20.408(a)(1)(ii)		50.38(e)(2)		50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)				
	20.408(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)					
	20.408(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)					
20.408(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(ix)						

LICENSEE CONTACT FOR THIS LER (12)							TELEPHONE NUMBER		
NAME Michael Moy, Technical Staff Engineer (X-489)							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	MANUFACTURER	REPORTABLE TO NRPDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS
B	I T	L I S	Y 0 1 0	Y					
X	S B	P S	B 0 7 0	Y					

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
<input checked="" type="checkbox"/> YES (if yes, complete EXPECTED SUBMISSION DATE)						0 7	0 1	8 6
<input type="checkbox"/> NO								

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

On January 21, 1986 at 1254 hours and at 47% power, Unit 2 scrambled on a greater than 10% turbine stop valve closure trip signal. The actuating scram signal was caused by a turbine trip resulting from a simulated reactor vessel high water level signal. This occurred as the emergency core cooling system yarway level indicating switch LIS 2-263-72C "high-side" test tap was opened during performance of Dresden Instrument Surveillance DIS 500-3. When the test tap was opened according to procedure, a small amount of instrument water leaked by creating a pressure drop on the instrument and concurrent reduction in pressure in the common instrument rack header. The turbine trip yarway indicating transmitting switch LITS 2-263-59A shares this instrument rack header. The root cause of the event was due to failure of the instrument valve manifold to operate properly. An abnormal excessive amount of turning force was required to completely isolate the manifold. Additionally, the high side isolation valve had developed a badly worn seat. Subsequent to the scram, a Group I isolation occurred due to a false actuating signal from main steam line pressure switch vibration. The isolation valve manifold for LIS 2-263-72C was replaced and calibrated. New valve isolating manifolds for each yarway instrument have been purchased and will replace existing manifolds.

To help prevent Group I isolations from pressure switch vibration the pressure switches will be replaced.

Safety significance of the event was minimal since all scram functions performed as designed and the Group I isolation occurred at a conservative pressure. An event of this type was last reported by Licensee Event Report #85-041 on Docket #050237.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

On January 21, 1986, at 1254 hours and at 47% rated power, Unit 2 scrambled on a greater than 10 percent turbine stop valve closure trip signal. The actuating scram signal was caused by a turbine trip resulting from a simulated reactor vessel high water level (+55 inches of water). The simulated high water level signal resulted when the emergency core cooling system (ECCS, EIIS Code JM) yarway level indicating switch LIS 2-263-72C high-side test tap was opened during performance of Dresden Instrument Surveillance DIS 500-3 (Reactor Vessel Low Water Level ECCS Initiation). The Instrument Mechanic was performing DIS 500-3 per procedure and based on operation of the instrument manifold's isolation valve, he believed that the high-side was completely isolated. However, when the instrument manifold's high-side test tap was opened a small amount of instrument water leaked by creating a pressure drop on the high-side of LIS 2-263-72C. This consequently reduced pressure in the common high-side instrument rack header. The turbine trip yarway level indicating transmitting switch LITS 2263-59A shares the high-side instrument rack header. This resulted in an erroneous high water level signal tripping the turbine and causing the reactor scram.

The root cause of the event was due to the failure of the instrument manifold's high-side isolation valve to operate properly and subsequent failure to completely isolate the flow path. Physical inspection of the manifold revealed that the concerned isolation valve experienced very difficult open/close movements. An excessive amount of turning force was required to completely isolate the high-side of the manifold. A properly functioning instrument manifold requires minimal turning force for isolation. Additionally, internal inspection of the instrument manifold revealed that the isolation valve had a badly worn seat to further add to difficulty in proper isolation valve operation.

Subsequent to the scram a Group I isolation occurred at a main steam line pressure greater than the isolation setpoint of 850 psig. The Group I isolation resulted from a false actuating signal from turbine trip vibration of the main steam line low pressure (</= 850 psig) switches on instrument rack 2-2252-1.

Immediate corrective actions were initiated and work request number 50476 was written requesting replacement of the instrument isolating valve manifold for ECCS switch LIS 2-263-72C. By approximately 2000 hours, on 1/21/86, the valve manifold was replaced. The calibration of LIS 2-263-72C was verified per DIS 500-3.

To help prevent future recurrence of this event new instrument valve block manifolds for each yarway instrument of Dresden Units 2 and 3 (six per unit) have been ordered and will replace the instrument valve manifolds currently in use. To help prevent recurrence of a Group I isolation resulting from vibration induced actuation of the main steam line (MSL, EIIS Code SB) low pressure switches, work request number 49695 was written requesting the replacement of pressure switches 3-261-30A, 3-261-30B, 3-261-30C, and 3-261-30D with new pressure switches of the same kind. This should be completed during the 1985 - 1986 Unit 3 refuel outage. Work request number 49696 requests the same work to be completed for Unit 2 but to be accomplished during the 1986 - 1987 Unit 2 refueling outage. The decision to replace the MSL low pressure switches with like switches was reached after an engineering evaluation was performed by the Station Nuclear Engineering Department. This evaluation was conducted in response to Licensee Event Report #85-001 on Docket #050249. The evaluation concluded that the switch actuations occurred only during

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

a surveillance or immediately after a turbine trip. Actuation of the switches under vibration was attributed to age of the pressure switches and loose hold down clamps and bolts. All problems with hold down clamps and bolts have been corrected.

The safety significance of the event was minimal since all scram functions performed as designed and the Group I isolation occurred at a more conservative pressure. An event of this type was last reported by Licensee Event Report #85-041 on Docket #050237.



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

February 19, 1986

DJS Ltr #86-134

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

Licensee Event Report #86-001-0, Docket #050237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73 (a)(2)(iv).

D.J. Scott  
Station Manager  
Dresden Nuclear Power Station

DJS/kjl

Enclosure

cc: J.G. Keppler, Regional Administrator, Region III  
File/NRC  
File/Numerical

IE22  
1/1