

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 FACIL:50-315 Donald C. Cook Nuclear Power Plant, Unit 1, Indiana & 05000315  
 AUTH.NAME AUTHOR AFFILIATION  
 BEILMAN,T.P. Indiana Michigan Power Co. (formerly Indiana & Michigan Ele  
 BLIND,A.A. Indiana Michigan Power Co. (formerly Indiana & Michigan Ele  
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 89-002-01:on 900330,failure of main steam safety valves  
 to meet Tech Spec lift setpoint requirements.

W/9 ltr.

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 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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NRR/DET/EMEB9H3	1 1	NRR/DET/ESGB 8D	1 1
NRR/DLPQ/LHFB11	1 1	NRR/DLPQ/LPEB10	1 1
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NRR/DST/SELB 8D	1 1	NRR/DST/SICB 7E	1 1
NRR/DST/SPLB8D1	1 1	NRR/DST/SRXB 8E	1 1
REG FILE 02	1 1	RES/DSIR/EIB	1 1
RGN3 FILE 01	1 1		
EXTERNAL: EG&G STUART,V.A	4 4	L ST LOBBY WARD	1 1
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616 465 5901



March 30, 1990

United States Nuclear Regulatory Commission  
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Docket No. 50-315

Document Control Manager:

In accordance with the criteria established by 10 CFR 50.73  
entitled Licensee Event Reporting System, the following  
report is being submitted:

89-002-01

Sincerely,

A handwritten signature in dark ink, appearing to read 'A.A. Blind'.

A.A. Blind  
Plant Manager

AAB:clw

Attachment

cc: D.H. Williams, Jr.  
A.B. Davis, Region III  
M.P. Alexich  
P.A. Barrett  
J.E. Borggren  
R.F. Kroeger  
NRC Resident Inspector  
J.G. Giitter, NRC  
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TE22  
11

## LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) D. C. Cook Nuclear Plant - Unit 1										DOCKET NUMBER (2) 0   5   0   0   0   3   1   5										PAGE (3) 1 OF 0   4	
TITLE (4) Failure of the Main Steam Safety Valves to Meet Technical Specification Lift Setpoint Requirements.																					
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   3	0   3	8   9	8   9	0   0   2	0   1	0   3	3   0	9   0	D.C. Cook - Unit 2					0   5   0   0   0   3   1   6							
OPERATING MODE (9) 1			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																		
POWER LEVEL (10) 0   5   4			20.402(b)			20.405(c)			50.73(a)(2)(iv)			73.71(b)									
			20.405(a)(1)(i)			50.36(c)(1)			50.73(a)(2)(v)			73.71(c)									
			20.405(a)(1)(ii)			50.36(c)(2)			50.73(a)(2)(vi)			OTHER (Specify in Abstract below and in Text, NRC Form 366A)									
			20.405(a)(1)(iii)			50.73(a)(2)(ii)			50.73(a)(2)(viii)(A)												
			20.405(a)(1)(iv)			50.73(a)(2)(iii)			50.73(a)(2)(viii)(B)												
			20.405(a)(1)(v)			50.73(a)(2)(iii)			50.73(a)(2)(ix)												
LICENSEE CONTACT FOR THIS LER (12)																					
NAME T. P. Beilman - Maintenance Superintendent								TELEPHONE NUMBER													
								AREA CODE 6   1   6		4   6   5   -   5   9   0   1											
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																					
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs											
X	S   B	I   R   V	D   2   4   3	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 fifteen single-space typewritten lines) (16)

This LER updates 89-002-00 regarding determination of cause for MSSV liftpoints being out of tolerance. Changes marginally marked.

Between March 3, 1989 and March 15, 1989, during testing of Main Steam Safety Valves (MSSVs) in both Units of the D. C. Cook Nuclear Plant, a total of sixteen of the MSSVs lifted at setpoints outside of criteria required by plant Technical Specifications. In Unit 1, thirteen of the twenty valves were found outside the criteria. Unit 2 had three valves outside of the setpoint criteria. Subsequent determination of cause, based on reviews of other LER's, NRC documents and INPO correspondence, was that utilization of the one percent Technical Specification tolerance was incompatible with the inherent characteristics of the Dresser 3707 RA safety valves installed in both units.

A review relative to changing allowable setpoints was conducted per commitment. Based on ANSI OM-1 Committee Safety Valve Test Requirements which allow a 3 percent tolerance, AEPSC will take steps required to obtain a change to Technical Specification 3.7.1.1.



LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  D.C. Cook - Unit 1	DOCKET NUMBER (2)  0 5 0 0 0 3 1 5	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 9	0 0 2	0 1	0 2	OF	0 4

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

This LER updates 89-002-00 regarding determination of cause for MSSV liftpoints being out of tolerance. Changes marginally marked.

Conditions Prior to Occurrence

Unit One - 54 percent reactor thermal power.

Unit Two - 0 percent reactor thermal power (startup).

Description of Event

Between March 3, 1989, and March 15, 1989, during testing of Main Steam Safety Valves (MSSVs) (EIIS/SB-RV), in both Units 1 and 2, a total of sixteen of the MSSVs lifted at setpoints outside of criteria required by plant Technical Specifications. Upon discovery of high or low setpoint values the MSSV setpoint was immediately adjusted to bring the value within the Technical Specification required range. The action statement for Technical Specification 3.7.1.1 was complied with during the performance of testing.

The main steam header of each of the four steam generators (EIIS/SB-SG), in both units, are equipped with 5 safety valves for a total of 20 valves per unit.

The required relief pressure setpoint ranges and the as-found setpoints for the MSSVs found out of specification are listed below:

<u>Date</u>	<u>Valve I.D. No.</u>	<u>Steam Gen.</u>	<u>T/S Range(PSIG)</u>	<u>As Found(PSIG)</u>
3-3-89	1-SV-1A-2	2	1054/1076	1048
3-3-89	1-SV-1B-2	2	1054/1076	1106
3-3-89	1-SV-3-2	2	1074/1096	1068
3-4-89	1-SV-1B-3	3	1054/1076	1097
3-4-89	1-SV-2A-3	3	1064/1086	1061
3-4-89	1-SV-2B-3	3	1064/1086	1060
3-6-89	1-SV-1A-1	1	1054/1076	1082
3-6-89	1-SV-1B-1	1	1054/1076	1044
3-6-89	1-SV-2B-1	1	1064/1086	1111
3-7-89	1-SV-1A-4	4	1054/1076	1121
3-7-89	1-SV-1B-4	4	1054/1076	1094
3-7-89	1-SV-2A-4	4	1064/1086	1106
3-7-89	1-SV-3-4	4	1074/1096	1071
3-10-89	2-SV-1B-2	2	1054/1076	1078
3-15-89	2-SV-2B-1	1	1064/1086	1093
3-15-89	2-SV-3-3	3	1074/1096	1112

With the exception of the MSSVs there were no inoperative structures, components, or systems that contributed to this event.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  D. C. Cook Nuclear Plant - Unit 1	DOCKET NUMBER (2)  0 5 0 0 0 3 1 5	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 9	0 0 2	0 1	0 3	OF	0 4

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

Cause of Event

This condition is the result of the incompatibility of the required Technical Specification setpoint tolerance and the setpoint repeatability inherent to the valve's design.

Analysis of Event

The safety valve setpoints discovered in this event were found to be out of compliance with the Technical Specification (T/S) 3.7.1.1 requirements and therefore reportable per 10CFR50.73(a)(2)(i)(B).

The following FSAR Chapter 14 accident analyses consider secondary-side pressure relief:

1. Loss of External Electrical Load (Appendix 14C.3.6)
2. Loss of Normal Feedwater (Appendix 14C.3.7)
3. Loss of All A.C. Power to the Station Auxiliaries
4. Steam Generator Tube Rupture (14.2.3)
5. Loss of Reactor Coolant from Small Ruptured Pipes or from Cracks in Large Pipes which Actuates the ECCS (Appendix 14E.1)

The low as-found setpoints would not have affected the capacity to relieve the Steam Generator pressures during any analyzed event. Since the low as-found lift setpoints would have resulted in early opening of MSSVs, this situation would not have adversely affected plant safety. The only foreseeable ramification of low setpoint deviation would be a potential actuation of the safety valve prior to the actuation of the steam generator power relief valves which are set to actuate at 1025 psig. This should not have occurred in the present case since the lowest lift setpoint found was 1044 psig.

In the instance of the high setpoint deviation (worst case 1121 psig versus 1076 psig acceptable), the only potential consequence is that the pressure on the secondary side would reach a value of 1155 psig (the high point set pressure plus the 3 percent above set pressure code allowable for a valve to attain rated lift.) The consequence of the largest deviation noted would not have resulted in over pressurization of the system beyond its design criteria of 1356 psig.

Corrective Action

The immediate corrective action, as required by the Surveillance Test Procedure, was to reset the safety valves' setpoints to within their specified ranges. The lift setpoints were then tested satisfactorily. Subsequent investigation identified that present T/S tolerances and the valve's design characteristics were incompatible. A significant hazards analysis has been initiated for use in a request for changing the T.S. tolerance for MSSV liftpoints to 3 percent as allowed by ANSI OM-1 committee's 1987 Safety Valve Test Requirements.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATIONESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS  
INFORMATION COLLECTION REQUEST: 60.0 HRS. FORWARD  
COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS  
AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR  
REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO  
THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE  
OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  D. C. Cook - Unit 1	DOCKET NUMBER (2)  0 5 0 0 0 3 1 5	LER NUMBER (6)			PAGE (3)	
		YEAR 8 9	SEQUENTIAL NUMBER 0 0 2	REVISION NUMBER 0 1	0 4 OF 0 4	

TEXT (If more space is required, use additional NRC Form 368A's) (17)

Failed Component Identification

Main Steam Safety Valve

Manufacturer: Dresser Consolidated Valves  
Model: (Unit 2) 3707RA-RT22; (Unit 1) 3707RA-RT21  
EIIIS Code: SB-RV

Previous Similar Events

LER 50-315/86-020-00  
LER 50-315/87-011-00  
LER 50-316/88-004-00