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FACIL:50-315 Donald C. Cook Nuclear Power Plant, Unit 1, Indiana & 05000315
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RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 90-016-00:on 901221,two of three pressurizer safety valves sent to test lab required by Tech Spec 4.4.3 found w/ lift settings outside criteria.Cause being investigated.W/ 910121 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 4
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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Indiana Michigan
Power Company
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Bridgman, MI 49106
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AEP
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January 21, 1991

United States Nuclear Regulatory Commission
Document Control Desk
Rockville, Maryland 20852

Operating Licenses DPR-58
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:

90-016-00

Sincerely,

A. Alan Blind

A.A. Blind
Plant Manager

AAB:sb

Attachment

c: D.H. Williams, Jr.
A.B. Davis, Region III
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J.E. Borggren
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NRC FORM 366 (6-89)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WTH 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)	DOCKET NUMBER (2)	PAGE (3)
D. C. Cook Nuclear Plant - Unit 1	0 5 0 0 0 3 1 5	1 OF 0 3

TITLE (4) Failure of two pressurizer safety valves to meet Technical Specification required surviellance test criteria.

EVENT DATE (5) MONTH	DAY	YEAR	LER NUMBER (6) YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	REPORT DATE (7) MONTH	DAY	YEAR	OTHER FACILITIES INVOLVED (8) FACILITY NAMES	DOCKET NUMBER(S)
1 2	2 1	9 0	9 0	0 1 6	0 0	0 1	2 1	9 1		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9): 5

POWER LEVEL (10): 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check one or more of the following)* (11)

[ ] 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)(vii)	[ ] OTHER *(Specify in Abstract below and in Text, NRC Form 366A)*
[ ] 20.405(a)(1)(iii)	[X] 50.73(a)(2)(i)	[ ] 50.73(a)(2)(viii)(A)	
[ ] 20.405(a)(1)(iv)	[ ] 50.73(a)(2)(ii)	[ ] 50.73(a)(2)(viii)(B)	
[ ] 20.405(a)(1)(v)	[ ] 50.73(a)(2)(iii)	[ ] 50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER AREA CODE	
T. P. Bielman - Maintenance Superintendant	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	MANUFAC-TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS
X	A B	R V	C 7 1 0	Y					

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
[X] YES *(If yes, complete EXPECTED SUBMISSION DATE)*	[ ] NO		0 6	0 1	9 1

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

On December 21, 1990 it was determined that two of three pressurizer safety valves sent to a test laboratory off site for testing required by Technical Specification 4.4.3 had been found with lift settings outside of the acceptance criteria. Acceptable settings are between 2461 psig and 2509 psig. Valve 1-SV-45B lifted at 2451 psig and valve 1-SV-45C at 2548 psig.

An evaluation of the test data revealed that the valve with a lift setting of 10 psi below acceptance criteria would have had no impact on the operability of affected components, as it would have lifted prematurely. The valve with a lift setting exceeding the acceptable range did so by 39 psi. Calculations performed indicate that if the reactor coolant system pressure had reached 2548 psig, no damage would have been incurred by pipe, fittings, valves and/or the pressurizer. The UFSAR was reviewed for impact of the as-found setpoints. The high setpoint would have been offset by the additional capacity of power operated relief valves and full safety valve capacity is not required. Also reviewed were criteria associated with Departure from Nucleate Boiling. No adverse consequences applied to safety analyses.

An investigation into the cause is being conducted by the valve manufacturer.

ESTIMATED BURDEN PER RESPONSE TO COMPLY WTH 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)	DOCKET NUMBER (2)	LER NUMBER (6) YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	PAGE (3)
D. C. Cook Nuclear Plant - Unit 1	0 5 0 0 0 3 1 5	9 0	0 1 6	0 0	0 2 OF 0 3

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

Conditions Prior to Occurrence

Unit One - Mode 5 (Cold Shutdown).

Unit Two - Mode 1 (Power Operation).

Description of Event

On December 21, 1990 it was determined that two of the three pressurizer safety valves (EIIS/AB-RV) sent off site to a test laboratory for testing required by Technical Specification 4.4.3 had been found with lift settings outside acceptance criteria. The valves are required by Technical Specification 4.4.3 to lift between 2461 and 2509 psig. Replacement valves tested by the same laboratory have been installed in place of the three valves removed for testing. Valve 1-SV-45B lifted at 2451 psig and 1-SV-45C lifted at 2548 psig. The third valve, 1-SV-45A, was acceptable. Technical Specification 4.4.3 requires that each pressurizer code safety valve be demonstrated operable per Section XI of the ASME Boiler and Pressure Vessel Code, 1974 Edition.

Cause of Event

An investigation into the cause for the change in lift setting from acceptable at installation to out-of-range when tested is being conducted by the valve manufacturer. Upon receipt of their report, we will submit an updated LER. The expected submittal date for the updated LER is June 1, 1991.

Analysis of Event

Test data was assessed following receipt. The valve which was found with a lift setting of 10 psi below acceptance criteria would have had no impact on the operability of affected components. It would have lifted prematurely and the plant maintained in a safe condition. The valve with a lift setting which exceeded acceptance criteria did so by 39 psi. Calculations subsequently performed indicate that, had the reactor coolant system reached the setpoint lift pressure of 1-SV-45C, no damage would have been incurred by the pipe, fittings, valves and/or the pressurizer.

The UFSAR Chapter 14 safety analyses applicable to Unit 1 were reviewed for the impact of "as found" safety valve opening setpoints of 2451 psig for 1-SV-45B and 2548 psig for 1-SV-45C.

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

For over-pressurization cases, the additional capacity of the PORVs would offset the higher final setpoint, and the full safety valve capacity is not required for any case. Therefore, the increased setpoint of the higher valve is of no concern.

For Departure from Nucleate Boiling (DNB) cases, the lowered setpoint would have been reached for only one case, the loss of external load/turbine trip case, minimum feedback, with pressure control. The accident analysis minimum DNBR for this case is approximately 1.79, and the acceptable value is 1.45, so the slight pressure reduction is easily offset by the existing margin.

In conclusion, the specified "as found" pressurizer safety valve setpoint would have no consequence on the applicable safety analyses. The failures of the valves to meet the surveillance test criteria are being reported under 10CFR50.73 (a)(2)(i)(B), "Any operation or condition prohibited by the plant's Technical Specifications."

Corrective Action

Considerations concerning corrective/preventive action will be addressed following completion of the valve manufacturer's cause analysis.

Failed Component Identification

Pressurizer Safety Valve
Plant Designation: 1-SV-45B and 1-SV-45C
Manufacturer: Crosby Valve Company
Model: HB-86-BP
EIIS Code: AB-RV

Previous Similar Events

LER 89-004