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FACIL:50-316 Donald C. Cook Nuclear Power Plant, Unit 2, Indiana & 05000316
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RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 89-005-00:on 890221,containment type B&C leak rate exceeds LCO value due to excessive valve leakage.

W/8 ltr.

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

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RIDS/ADDS

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
D. C. Cook Plant, Unit 2	0 5 0 0 0 3 1 6	1 OF 0 4

TITLE (4) Containment Type B&C Leak Rate Exceeds L. C. O. Value Due To Excessive Valve Leakage

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 5 0 0 0
0 2	2 1	8 9	8 9	— 0 0 5	— 0 0	0 3	2 3	8 9		0 5 0 0 0

OPERATING MODE (9)	5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 0 0	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
T. K. Postlewait - Technical Engineering Superintendent	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 NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
B	B D	I S V	I 2 0 7	Y					
B	B D	I S V	C 4 1 8	Y					

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

In performing the Type B&C Containment Penetration Leak Rate Tests and Containment Integrated Leak Rate Test, during the 1988/1989 outage, the B and C "Penalty" applied to the total leakage was arrived at using the "minimum" pathway calculation method. On February 21, 1989, the Type B and C leak rate was recalculated using the "maximum" pathway methodology. This resulted in an as-found leak rate of 0.61 La, which exceeds the Technical Specification 3.6.1.2.b limit of 0.60 La.

The excessive leakage of several valves subject to the Type B&C test is the cause for exceeding Technical Specification 3.6.1.2.b limit of 0.60 La. Valves that exhibited excessive leakage were repaired and retested.

The total as-left B and C leakage was calculated to be 0.076 La, which is far below the 0.60 La limit required by Technical Specification 3.6.1.2.b.

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

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

Conditions Prior to Occurrence

Unit 2 in Mode 5 (Cold Shutdown) during Steam Generator Replacement Outage.

Description of Event

In performing the Type B&C Containment Penetration Leak Rate Tests and Containment Integrated Leak Rate Test, during the 1988/1989 outage, the B and C "Penalty" applied to the total leakage was arrived at using the "minimum" pathway calculation method. On February 21, 1989, the Type B and C leak rate was recalculated using the "maximum" pathway methodology. This resulted in an as-found leak rate of 0.61 La, which exceeds the Technical Specification 3.6.1.2.b limit of 0.60 La.

Cause of Event

The excessive leakage of several valves subject to the Type B and C test is the cause for exceeding Technical Specification 3.6.1.2.b limit of 0.60 La. The major contributors to the excessive leak rate were valves 2-SF-160 (EIIS:ISV/BD) and 2-VCR-205 (EIIS:ISV/BD). 2-SF-160 is the containment isolation valve from the Reactor Coolant Drain Tank to the Refueling Water Purification Pumps. 2-VCR-205 is the containment Isolation Valve for Upper Containment Purge Supply Air. The leak rates of valves 2-SF-160 and 2-VCR-205 represented 89 percent of the reported B and C leakage.

Analysis of Event

The containment is designed to have two valves in series for each penetration that is tested during the Appendix J Type B&C Test Program. During the Type C Test, there was not a case in which both of the in-series isolation valves for a given penetration exhibited excessive leakage. The Containment Integrated Leak Rate was below 0.75 La (The limit specified in Technical Specification 3.6.1.2) and takes into account the type B and C leakage rates. Therefore, the Containment would have performed its design function and this event is not of safety significance.

In conclusion, containment integrity was not compromised and this event did not represent a significant hazard to public health and safety.

Corrective Actions

2-VCR-205 was leaking at seat area near the stem. The clampseal bolts were tightened, eliminating the leakage.

2-SF-160 was repaired by replacing the diaphragm.

Valves 2-VCR-205 and 2-SF-160 were the major contributors for exceeding the B&C allowable leak rate limit.

Other valves that exhibited excessive leakage were repaired and retested.

The total as-left B and C leakage was calculated to be 0.076 La, which is far below the 0.60 La limit required by Technical Specification 3.6.1.2.b.

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

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

Failed Component Identification

Plant I.D. No: 2-VCR-205 (EIIS: ISV/BD)
Manufacturer: Clow Corporation (C418)
Component Name: Upper Containment Purge Supply Containment Isolation Valve
Model No: S

Plant I.D. No: 2-SF-160 (EIIS: ISV/BD)
Manufacturer: ITT Grinnell (I207)
Component Name: Reactor Coolant Drain Tank Isolation to Refueling Water Purification Pump
Model No: WREF-5-SS

Previous Similar Events

Previous Licensee event reports submitted for excessive type B&C Leak Rate Test results include:

050-315/79-34	050-316/79-20
050-315/81-11	050-316/79-53
050-315/81-25	050-316/81-18
050-315/82-58	050-316/83-16
050-315/83-72	050-316/84-05
050-315/85-17	050-316/86-09
050-315/87-12	

Indiana Michigan
Power Company
Cook Nuclear Plant
P.O. Box 458
Bridgman, MI 49106
616 465 5901

INDIANA MICHIGAN POWER

March 23, 1989

United States Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Operating License DPR-74
Docket No. 50-316

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:

89-005-00

Sincerely,

W. G. Smith, Jr.
Plant Manager

WGS:clw

Attachment

cc: D. H. Williams, Jr.
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