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RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 89-004-01:on 890324,containment Type B & C leakage exceeds LCO value due to degradation of isolation valve. W/8 ltr.

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	NRR/DOEA/EAB 11	1	1	NRR/DREP/RPB 10	2	2
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August 31, 1989

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:

89-004-01

Sincerely,

A. Alan Blind

W. G. Smith, Jr.
Plant Manager

WGS:clw

Attachment

cc: D.H. Williams, Jr.
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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 Nuclear Plant, Unit 1	0 5 0 0 0 3 1 5	1 OF 0 4

TITLE (4) Containment Type B and C Leakage Exceeds L.C.O. Value Due to Degradation of Isolation Valve Seating Surfaces

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	2 4	8 9	8 9	— 0 0 4	— 0 1	0 8	3 1	8 9		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9): 5
POWER LEVEL (10): 0 0 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. K. Postlewait Technical Engineering Superintendent	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	K G	I S V	I 2 0 7	Y	B	I P	I S V	I 2 0 8	Y
B	I P	I S V	I 2 0 8	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 is a supplemental report submitted to provide additional information regarding the Type B and C Leak Rate Testing as reported on April 21, 1989.

On March 24, 1989, with the Reactor Coolant System in Mode 5 (Cold Shutdown), the accumulated leakage found while performing the Type B and C Leak Rate Tests on containment penetrations exceeded the L.C.O. value (0.60 La) of Technical Specification 3.6.1.2.b. The B and C Leak Rate Test was approximately 50 percent complete at that time. The total as-found B and C leak rate was 3.08 La. Test data revealed that 2.7 La was attributable to the leak rates of three valves. It was also determined that two valves had the valve stem packing replaced prior to obtaining as-found leak rate data. This action is contrary to 10 CFR 50 Appendix J requirements for this valve design.

Those Containment Isolation Valves that exhibited leak rates in excess of acceptance criteria have been repaired and retested to ensure the leak rates are within allowable limits.

The as-left leak rate for Type B and C testing was 0.142 La, which is well below the Technical Specification limit of 0.60 La.

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D. C. Cook Nuclear Plant Unit 1	0 5 0 0 0 3 1 5	8 9	— 0 0 4	— 0 1	0 2 OF 0 4

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

Conditions Prior To Occurrence

Unit 1 in Mode 5 (cold shutdown).

Description of Event

This is a supplemental report submitted to provide additional information regarding the subject violation reported on April 21, 1989.

On March 24, 1989, with the Reactor Coolant System (EIIS/AB) in Mode 5 (cold shutdown), the accumulated leakage found while performing the Type B and C Leak Rate Tests on containment penetrations exceeded the L.C.O. value of 0.60 La, Technical Specification 3.6.1.2.b. The B and C Leak Rate Test was approximately 50 percent complete at that time. The total B and C leak rate was 3.08 La using the maximum pathway methodology.

Test data revealed that 2.7 La was attributable to three valves (EIIS/ISV) which exhibited excessive leak rates:

Valve	As-Found Leakage
WCR-924 (EIIS/ISV-KG)	186,890 SCCM
ECR-26 (EIIS/ISV-IP)	53,952.9 SCCM
ECR-31 (EIIS/ISV-IP)	57,193.5 SCCM

Additionally, two valves had the valve stem packing replaced prior to obtaining as-found leak rate data. These valves are the Boron Injection Tank Outlet Valves (ICM-250 and ICM-251) (EIIS/ISV-BQ). Repairs to the Containment Isolation Valves without obtaining as-found leak rates are contrary to 10 CFR 50 Appendix J requirements for this valve design.

Cause

Excessive leakage rates of the three valves listed above, which are subject to the Type C test, was the cause for exceeding the Technical Specification Limit of 0.60 La. WCR-924 had a failed diaphragm, ECR-31 had dirt deposits on its seat and ECR-26 had a bad seat and was replaced.

Valves ICM-250 and ICM-251 were not tested prior to repairs due to personnel error. This error was contrary to an approved procedure and was made by Maintenance personnel.

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

Corrective Actions

All valves that exhibited leakage in excess of guideline acceptance criteria were repaired and retested. The major contributors to the high as-found leak rate were repaired as follows:

Valve	Repair
WCR-924	Failed diaphragm, diaphragm replaced.
ECR-26	Replaced valve, no repair attempted.
ECR-31	Dirt deposits on seat, cleaned seat.

Appropriate administrative actions were taken for the individual responsible for scheduling the repacking of valves ICM-250 and ICM-251 prior to obtaining as-found leak rate data.

Analysis of Event

The containment was designed to have two valves in series for each penetration that are tested during the Appendix J Type C test program. A review of the test data indicates that 2.7 La was attributable to valves WCR-924 (186,890 sccm), ECR-26 (53952.9 sccm) and ECR-31 (57193.5 sccm). Valves WCR-925 (400.4 sccm), ECR-16 (0 sccm), and ECR-32 (4000 sccm), respectively, are in series with these valves. If credit is taken for the good valves in series with the leaking valves, the total as-found leakage becomes 0.42 La, which shows that containment isolation could have been successfully achieved under the as-found conditions.

Valves ICM-250 and ICM-251 are double disc gate valves. The leak rate is measured by pressurizing the valve body between the seats. Even though the as-found leak rates were not obtained, the leak rates following replacement of the valve stem packing were minor. ICM-250 had an as-left seat leak rate of 20.0 sccm and ICM-251 had an as-left seat leak rate of 20.2 sccm. These leak rates were within the guideline acceptance criteria and no additional repairs were required.

Additionally, valves ICM-250 and ICM-251 have an equalizing line from the valve body to the downstream side of the valve. One check valve isolates ICM-250 and ICM-251 from each of the four Reactor Coolant System (RCS) Loops. If any one of the isolation check valves exhibit any leakage, the valve stem packing of ICM-250 and ICM-251 is exposed to RCS pressure. It is not known if the valve packing would have leaked under the Type C Leak Rate Test conditions (12 psig).

Based on the above, we believe that this event did not represent a significant hazard to public health and safety.

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

Failed Component Identification

1. Component Names:. NESW Supply to Containment Ventilation Unit HV-CUV-2
2. Plant I.D. No.: 1-WCR-924
3. Manufacturer: ITT, Grinnell
4. Model No.: CF8

1. Component Names: West Containment Dome Sample Isolation Valve
2. Plant I.D. No.: 1-ECR-26
3. Manufacturer: ITT, Hammel-Dahl
4. Model No.: 999

1. Component Names: Lower Containment Sample Isolation Valve
2. Plant I.D. No.: 1-ECR-31
3. Manufacturer: ITT, Hammel-Dahl
4. Model No.: 502

Previous Similar Events

Previous Similar Events include:

050-315/85-17
050-315/83-72
050-315/82-58
050-315/81-25
050-315/81-11
050-315/79-34

050-316/81-18
050-316/79-53
050-316/79-20