



**Commonwealth Edison**  
Dresden Nuclear Power Station  
6500 North Dresden Road  
Morris, Illinois 60450  
Telephone 815/942-2920

August 5, 1994

GFSLTR 94-0261

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

Licensee Event Report 94-005-01, Docket 05000237, is being submitted in accordance with Technical Specification 6.6, NUREG 1022 and 10CFR50.73(a)(2)(iv). This supplement is being issued with added corrective actions as required after engineering evaluation.

Sincerely,

Gary F. Spedl  
Station Manager  
Dresden Station

GFS/MB:cfq

Enclosure

cc: J. Martin, Regional Administrator, Region III  
NRC Resident Inspector's Office  
File/NRC  
File/Numerical

100107

9408170130 940321  
PDR ADOCK 05000249  
S PDR

DAP FORM 02-08C  
SUPPLEMENTAL REPORT TO LER

DVR NO.					SYSTEM AFFECTED	
D	- 12	- 3	- 94	- 001-01		
<b><u>PART 1</u> TITLE OF EVENT</b>					<b><u>OCCURRED</u></b>	
Containment Atmosphere Monitor Check Valve 3-2499-28B Exceeded Technical Specification Leakage Limit of 0.6 L <sub>a</sub> Due to Foreign Materials on Seat					02/26/94 _____ DATE	1330 _____ TIME
<b>REASON FOR SUPPLEMENTAL REPORT</b> Added corrective actions as required after engineering evaluation.						
<b><u>PART 2</u></b>						
ACCEPTANCE BY STATION REVIEW  DATE					_____ _____ _____	
SUPPLEMENTAL REPORT APPROVED AND AUTHORIZED FOR DISTRIBUTION					*See attached DAP 10-01 Rev 16 Form 10-1A and 10-1B for Approval <u>Signatures</u> _____	
					STATION MANAGER	DATE

NRC FORM 366 (5-92)			U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95					
<b>LICENSEE EVENT REPORT (LER)</b>						ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.					
<b>FACILITY NAME (1)</b> Dresden Nuclear Power Station, Unit 3						<b>DOCKET NUMBER (2)</b> 05000249			<b>PAGE (3)</b> 1 OF 4		
<b>TITLE (4)</b> Containment Atmosphere Monitor Check Valve 3-2499-28B Exceeded Technical Specification Leakage Limit of 0.6 L Due to Foreign Materials on Seat											
<b>EVENT DATE (5)</b>			<b>LER NUMBER (6)</b>			<b>REPORT DATE (7)</b>			<b>OTHER FACILITIES INVOLVED (8)</b>		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER	
02	26	94	94	-- 001 --	01	03	21	94	None	None	
<b>OPERATING MODE (9)</b> N			<b>THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)</b>								
<b>POWER LEVEL (10)</b> 064			20.2201(b)			20.2203(a)(3)(i)			50.73(a)(2)(iii)		
			20.2203(a)(1)			20.2203(a)(3)(ii)			50.73(a)(2)(iv)		
			20.2203(a)(2)(i)			20.2203(a)(4)			50.73(a)(2)(v)		
			20.2203(a)(2)(ii)			50.36(c)(1)			50.73(a)(2)(vii)		
			20.2203(a)(2)(iii)			50.36(c)(2)			50.73(a)(2)(viii)(A)		
			20.2203(a)(2)(iv)			50.73(a)(2)(i)			50.73(a)(2)(viii)(B)		
			20.2203(a)(2)(v)			X 50.73(a)(2)(ii)			50.73(a)(2)(x)		
<b>LICENSEE CONTACT FOR THIS LER (12)</b>											
<b>NAME</b> Michael Baron, System Engineer									<b>TELEPHONE NUMBER (Include Area Code)</b> Ext. 2414 (815) 942-2920		
<b>COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)</b>											
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
B	IK	45	R203	No							
<b>SUPPLEMENTAL REPORT EXPECTED (14)</b>											
<b>YES</b> (If yes, complete EXPECTED SUBMISSION DATE).						<b>NO</b>					
						<b>EXPECTED SUBMISSION DATE (15)</b>					
						MONTH DAY YEAR					

**ABSTRACT** (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

At approximately 1330 hours on February 26, 1994 with Unit 3 in the Run mode at 64% power. While performing the operational Local Leak Rate Test (LLRT) Special Procedure (SP 93-8-73) of the 3-2499-28B (3-B H<sub>2</sub>O<sup>2</sup> monitor return line lift check valve made by Rockwell International) leakage exceeded the capacity of the flowmeters by an undetermined amount. The Technical Specification leakage limit of 0.6 L was exceeded per Dresden Technical Specification 3.7.A.2.b(2)(a). Upon internal inspection of the check valve, black debris was found between the seating surfaces holding the seats open a sufficient amount to fail the leak rate test. The Mechanical Maintenance department cleaned the valve internals and made a final visual inspection. No physical damage to valve internals was found. The valve was closed and leak tested. Final leakage of zero was recorded. This is a reoccurring problem and redesign is being evaluated.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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TEXT (if more space is required, use additional copies of NRC Form 366A) (17)

## EVENT IDENTIFICATION:

Containment Atmosphere Monitor Check Valve 3-2499-28B Exceeded Technical Specification Leakage Limit of 0.6 L<sub>v</sub> Due to Foreign Materials on Seat

## A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: 3 Event Date: 02/26/94 Event Time: 1330 hrs.

Reactor Mode: N Mode Name: Run Power Level: 64%

Reactor Coolant System Pressure: 1000 psig

## B. DESCRIPTION OF EVENT:

At approximately 1330 hours, on February 26, 1994 with Unit 3 in the Run mode at (64% power) while performing the operational LLRT (SP 93-8-73) of the 3-2499-28B, 3B H<sub>2</sub>O<sup>2</sup> monitor [IK] return line lift check valve (Rockwell International) leakage exceeded capacity of the flow meters by an undetermined amount. Therefore, the Technical Specification leakage limit of 0.6 L<sub>v</sub> was exceeded per Dresden Technical Specification 3.7.A.2.b(2)(a). After the check valve failed its test, the valve was mechanically agitated and tested again for trouble shooting reasons but the leakage was still undetermined. At 15:45 the Shift Engineer received a Problem Identification Form and determined that a one hour ENS phone call per 10CFR50.72 (b)(1)(ii), be made, the call was made at 1626 CST (Central Standard Time). The H<sub>2</sub>O<sup>2</sup> system was taken Out-of-Service and isolated. A work request was issued to the Mechanical Maintenance Department (WR# D20151) to disassemble the valve as needed for internal inspection.

With the valve open, a Dresden Administrative Procedure (DAP) 11-25, "Check Valve Inspection", was performed by the Dresden check valve coordinator. This inspection revealed black debris on the valve seats that enabled air leakage past the seat. The check valve seat was not physically degraded and had no scratches or dents. An independent inspection was performed by System Engineering with the same conclusions. Mechanical Maintenance was then instructed to clean all valve internals and assemble the valve for an informational test. The test passed and final assembly and valve seal welding was performed. On 3/4/93, a final LLRT was performed per Dresden Technical Surveillance (DTS) 1600-32 "Local Leak Rate Testing of Containment Atmosphere Monitoring Closed Loop Piping", with a stabilized and corrected flow reading of zero scfh. The system was then returned to service and declared operable.

This issue has become a frequent problem. Black debris that appears to be a corrosion product of the stainless steel line, a moist drywell atmosphere and pipe configuration appears to be the root cause of the check valve failure on both Units 2 and 3.

Previously the H<sub>2</sub>O<sup>2</sup> suction inlet lines have experienced similar moisture problems. The problem was corrected on the suction side of the system by reconfiguring the piping in such a manner that the angle of the pipe would allow any moisture to run back into containment. This coupled with heat tracing has

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corrected the problem on this side of the system. The return line is not heat traced and piping had not been reconfigured.

A Site Engineering services request 94-015 has been initiated for evaluation of the following items; redesign of the return piping, possible valve replacement and heat tracing. An NTS item has been issued to track this concern.

NOTE: On February 14, 1994, while this report was in progress the 2499-28B valve failed its local leak rate test per Dresden Technical Surveillance 1600-01 with a undetermined amount of leakage.

Root cause of this failure has also been attributed to corrosion products. The corrective action for the February 14, 1994 occurrence will be addressed by this LER corrective action.

C. CAUSE OF EVENT:

This report is being submitted in accordance with 10CFR50.73(a)(2)(ii) which requires the reporting of any operation or condition prohibited by Technical Specifications.

The apparent cause of this event is stainless steel pipe corrosion produced by a damp drywell atmosphere and pipe configuration that is stagnant when the system is not in service thus promoting a moist corrosive atmosphere.

This corrosion flakes off the internals of the line and works its way down inside of the check valve inhibiting movement and increasing the risk of valve leakage.

D. SAFETY ANALYSIS:

The safety significance of the leakage past the 2499-28B valve is considered to be minimal since the as built piping configuration is a closed loop system. Any leakage passed the check valve would return to its point of origin inside primary containment. The closed loop piping is challenged per Dresden Technical Surveillance 1600-32 "Local Leak Rate Testing of Containment Atmosphere Monitoring Closed Loop Piping" and 1600-1 "Local Leak Rate Testing of Primary Containment Isolation Valves". These Surveillances are reviewed by the IST coordinator to verify integrity is maintained.

E. CORRECTIVE ACTIONS:

As stated in Revision 0 of Licensee Event Report 94-001, an evaluation of currently installed H<sub>2</sub>O<sub>2</sub> system components was conducted by Dresden Engineering. The H<sub>2</sub>O<sub>2</sub> check valves currently installed are Rockwell Edwards, 1500 psi lift check valves.

Improvements to these valves were implemented during D3R13 Refuel Outage. These improvements have enhanced the performance of the check valves.

Testing repeatability was consistent and the valves have passed their local leak rates.

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Although improvements have been implemented successfully, Engineering has recommended that the lift style check valves be replaced with an Anchor/Darling Model E3265-109 swing check valve at the earliest possible convenience. This design change should further enhance check valve performance and local leak rate testing consistency. Immediately following the installation of the new swing check valves, a one cycle evaluation period will be conducted to determine if further enhancements will be required to the system.

A supplemental report will be issued if further corrective actions are required pending this evaluation period ending August 22, 1996.

**F. PREVIOUS OCCURRENCES:**

No previous LER's on file.

**G. COMPONENT FAILURE DATA:**

The failed check valve was manufactured by the Rockwell International Company.

A Nuclear Plant Reliability data system general report was issued with no records meeting the search conditions and no failure data available.