

LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1) Dresden Nuclear Power Station, Unit 3	Docket Number (2)	Page (3)		
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Title (4)
Type B and C Primary Containment Local Leak Rate Testing Limit of 0.6L₁ Exceeded Due to Leakage Past Atmospheric Containment Atmosphere
Dilution (ACAD) System Check Valve 3-2599-23A

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	9	2	9	9	3	9	3	---	0	1	6	---	0	0	1	0	2	9	9	3	N/A				

OPERATING MODE (9) N
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIRMENTS OF 10CFR
(Check one or more of the following) (11)

POWER LEVEL (10)		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)
		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)		

LICENSE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER											
	AREA CODE											
M. McGivern, Local Leak Rate Test Coordinator	Ext. 2526	8	1	5	9	4	2	-	2	9	2	0

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
X	B	B	I S V H O 3 7	YES					

SUPPLEMENTAL REPORT EXPECTED (14)				Expected Submission Date (15)	Month	Day	Year			
X	Yes (If yes, complete EXPECTED SUBMISSION DATE)		NO			0	4	1	5	9

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

At approximately 1600, on September 29, 1993 with Unit 3 operating at 99% power, the performance of Dresden Special Procedure SP 93-8-73 revision 0, Local Leak Rate Testing Of Primary Containment Isolation Valves During Reactor Operation, identified the Atmospheric Containment Atmosphere Dilution (ACAD) System Check Valve 3-2599-23A to be leaking an undetermined amount. This value, when added to the existing maximum pathway leakage rate exceeded the maximum pathway leakage rate for Type B and C primary containment leakage, 488.452 scfh (0.6L₁), as listed in Technical Specification 3.7.A.2.b.(2)(a). The inboard ACAD System isolation valve 3-2599-2A was then challenged with a local leak rate test, which yielded a leakage rate of 7.93 scfh. Valve 3-2599-23A was declared inoperable and valves 3-2599-2A and 3-2599-6A were taken out of Service in the closed position. The safety significance of the leakage past valve 3-2599-23A was considered to be minimal since the additional leakage out of containment, on a minimum pathway basis, was 7.93 scfh and would not cause the maximum off-site dose rates established in 10 CFR 100 to be exceeded. Maintenance was completed on October 1, 1993 after which the valve was retested. This test yielded a leakage rate of 2.44 scfh. A supplement to this report will be submitted to identify the cause and corrective actions for any other valve failures which occur during the course of the Unit 3 exemption period.

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TEXT Energy Industry Identification System (EIS) codes are identified in the text as [XX]

PLANT AND SYSTEM IDENTIFICATION:

General Electric-Boiling Water Reactor-2527 MWT rated core thermal power.

Nuclear Tracking System (NTS) tracking code numbers are identified in the text as (XXX-XXX-XX-XXXXX)

EVENT IDENTIFICATION:

Type B and C Primary Containment Local Leak Rate Testing Limit of 0.6L, Exceeded Due to Leakage Past Atmospheric Containment Atmosphere Dilution (ACAD) System Check Valve 3-2599-23A

A. CONDITIONS PRIOR TO EVENT:

Unit: 3 Event Date: 09/29/93 Event Time: 1600 hrs
 Reactor Mode: N Mode Name: Run Power Level: 99%
 Reactor Coolant System (RCS) Pressure: 1003 psig

B. DESCRIPTION OF EVENT:

At approximately 1600, on September 29, 1993 with Unit 3 operating at 99% power, the performance of Dresden Special Procedure SP 93-8-73 revision 0, Local Leak Rate Testing Of Primary Containment Isolation Valves During Reactor Operation, identified the Atmospheric Containment Atmosphere Dilution (ACAD) [BB] System Check Valve 3-2599-23A to be leaking an undetermined amount. This value, when added to the existing maximum pathway leakage rate exceeded the maximum pathway leakage rate for Type B and C primary containment leakage, 488.452 scfh (0.6L), as listed in Technical Specification 3.7.A.2.b.(2)(a).

In order to verify primary containment could still be maintained, the inboard ACAD System isolation valve 3-2599-2A was then challenged with a local leak rate test, which yielded a leakage rate of 7.93 scfh. The new sum of this pathway's leakage rate, when added to the current sum of Type B and C leakage, caused the new total leakage rate to be 288.70 scfh. The Shift Control Room Engineer (SCRE) was notified of the event and with valve 3-2599-2A closed, primary containment integrity could be maintained and reactor power operation could continue per Technical Specification 3.7.D.2. Valve 3-2599-23A was declared inoperable and valves 3-2599-2A and 3-2599-6A were taken Out of Service in the closed position. This ensured that primary containment could be maintained by preventing the inadvertent opening of the inboard isolation valve. Additionally, since the leakage rate exceeded the administrative leakage limit of 80% of 0.6L, (390.76 scfh) which was established as a condition of being granted a schedular exemption (by NRR) from the testing interval required by 10 CFR 50, Appendix J, a courtesy ENS phone notification was made at 1805 on September 29, 1993.

A Problem Identification Form (PIF) was initiated per Dresden Administrative Procedure (DAP) 02-27, Integrated Reporting Process. Check Valve 3-2599-23A was repaired under Work Request (WR) 20130, which had previously been submitted on June 16, 1993 as a contingency work request pending as-found LLRT results for the upcoming Unit 3 Refueling Outage D3R13.

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Maintenance was completed on October 1, 1993 after which the valve was retested. This test yielded an acceptable leakage rate of 2.44 scfh. The ACAD System check valve was declared operable and returned to service.

C. APPARENT CAUSE OF EVENT:

This report is being submitted in accordance with 10 CFR 50.73(a)(2)(i) which requires the reporting of any operation or condition prohibited by the Technical Specifications. The ACAD System lift-type check valve 3-2599-23A was inspected to determine cause of leakage. Both seating surfaces of the piston and the seat in the body were corroded. The seat had a small scratch across the seating area. However, this scratch did not cause the undetermined leakage. This corrosion and debris would not allow the valve to close properly, thus yielding the leakage path. The cause of the corrosion is from moist air originating from the drywell and ACAD Compressor condensing in the line. Neither the check valve nor the attached piping is heat traced. A review of maintenance history since 1985 has shown that one other failure has occurred (WR 04143). The piston was found stuck to its guide and debris was found on the seat. LLRT records dating back to 1980 indicate no other failures of this valve. Dresden Unit 3 has been granted a schedular exemption (by NRR) from the testing interval required by 10 CFR 50, Appendix J. The exemption entails performing LLRTs on those volumes which can be tested with the reactor at power operation and exempts those volumes which would require the reactor to be shutdown. This exemption lasts until the Unit 3 refueling outage D3R13, which is scheduled for early March 1994. A supplement to this report will be submitted to identify the cause and corrective actions for any other valve failures which occur during the course of the Unit 3 exemption period. This supplement is expected to be submitted by April 15, 1994 (249-180-93-01601).

D. SAFETY ANALYSIS OF EVENT:

The safety significance of the leakage past valve 3-2599-23A was considered to be minimal since the redundant ACAD System isolation valve leaked 7.93 scfh; therefore, the total leakage out of the penetration, on a minimum pathway basis, was 7.93 scfh. The current as-left leakage (Type A test) is .6706 wt%/day. If the minimum pathway leakage of the ACAD penetration is .0157 wt%/day (7.93 scfh) and is added to the current as-left minimum pathway leakage total (.6706 wt%/day), then the new total leakage would be .6863 wt%/day. This total is still less than the Technical Specification limit of 0.75L₁ (1.2 wt%/day); therefore, the maximum off-site dose rates established in 10 CFR 100 would not have been exceeded in case of a LOCA.

E. CORRECTIVE ACTIONS:

The ACAD System Check Valve 3-2599-23A was inspected and repaired under WR 20130. Based on the results of the inspection, both the piston and the seat were replaced. After the check valve was reassembled, the final as-left leakage rate was 2.44 scfh.

Site Engineering will investigate the possibility of initiating a preventative maintenance program for the ACAD Primary Containment check valves (249-180-93-01602). This investigation will be performed with due consideration given to the possible replacement/retirement of the ACAD system with a new post accident combustible gas control system.

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F. PREVIOUS OCCURRENCES:

<u>LER/Docket Numbers</u>	<u>Title</u>
92-031/0500237	Failure of the Outboard Drywell Air Sample Valve 2-8501-5B During Its 24 Month Local Leak Rate Testing Surveillance Due to Improper Valve Seating
88-004/0500249	Local Leak Rate Test Limit Exceeded Due to Leakage Through Primary Containment Isolation Valves

G. COMPONENT FAILURE DATA:

<u>Manufacturer</u>	<u>Nomenclature</u>	<u>Model Number</u>	<u>Mfg. Part Number</u>
Hancock	ACAD Check Valve 3-2599-23A	5580W	N/A

An industry - wide data base search revealed nineteen failures for the Hancock Model 5580W lift-type check valve. Thirteen failures were attributed to debris and corrosion of valve internals not allowing the valve to close. One of the failures reported was used in a similar system application.