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 FACIL:50-305 Kewaunee Nuclear Power Plant, Wisconsin Public Servic      05000305  
 AUTH.NAME      AUTHOR AFFILIATION  
 SCHOMMER,K.J.      Wisconsin Public Service Corp.  
 MARCHI,M.I.      Wisconsin Public Service Corp.  
 RECIP.NAME      RECIPIENT AFFILIATION

SUBJECT: LER 95-002-00:on 950406,improperly seated check valves caused local leak rate "As Found" leakage to exceed TS requirements.Disassembled & inspected CVC-205B & CVC-206A. W/950508 ltr.

DISTRIBUTION CODE: IE22T      COPIES RECEIVED:LTR   1   / ENCL   1        SIZE:   6    
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**WISCONSIN PUBLIC SERVICE CORPORATION**

NRC-95-056

600 North Adams • P.O. Box 19002 • Green Bay, WI 54307-9002

May 8, 1995

10 CFR 50.73

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

Ladies/Gentlemen:

Docket 50-305  
Operating License DPR-43  
Kewaunee Nuclear Power Plant  
Reportable Occurrence 95-002-00

In accordance with the requirements of 10 CFR 50.73, "Licensee Event Report System," the attached Licensee Event Report (LER) for reportable occurrence 95-002-00 is being submitted.

Sincerely,

M. L. Marchi  
Manager - Nuclear Business Group

KJS/jmf

Attach.

cc - INPO Records Center  
US NRC Senior Resident Inspector  
US NRC, Region III

9505150227 950508  
PDR ADOCK 05000305  
S PDR

**LICENSEE EVENT REPORT (LER)**

(See reverse for required number of digits/characters for each block)

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.

FACILITY NAME (1)

Kewaunee Nuclear Power Plant

DOCKET NUMBER (2)

05000305

PAGE (3)

1 OF 5

TITLE (4) Improperly Seated Check Valves Causes Local Leak Rate "As Found" Leakage to Exceed Technical Specification Requirements

EVENT DATE (5)			LER NUMBER (6)			REPORT NUMBER (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
04	06	95	95	002	00	05	08	95	N/A	05000
									FACILITY NAME	DOCKET NUMBER
										05000

OPERATING MODE (9)	POWER LEVEL (10)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)				
N	000	20.402(b)	20.405(a)(1)(i)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(ii)	20.405(a)(1)(iii)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(iv)	20.405(a)(1)(v)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER
			X	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)
				50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
				50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

Keith J. Schommer - Plant Engineer

TELEPHONE NUMBER (Include Area Code)

414) 388-2560 Ext. 2619

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	KO	ISV	K085	Y					
X	KO	ISV	K085	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On April 6, 1995, with the plant in refueling shutdown, two local leak rate test volumes associated with the reactor coolant pump A and B seal injection lines displayed high leak rates. Each of the test volumes had a leak rate of 160,000 standard cubic centimeters per minute (scm) due to check valves CVC-206A and CVC-205B not seating completely. As a result, Kewaunee's total "as found" maximum pathway leakage exceeded 0.60 La. For Kewaunee, 0.60 La is equal to a leakage of 322,800 scm. The redundant seal injection line check valves indicated acceptable leakages of 592 scm for CVC-205A and 2.3 scm for CVC-206B. The seal injection check valves were disassembled following "as-found" testing, and an inspection of the valve discs found the soft-seat inserts to be non-concentric on the disc. The valve disks were replaced and the valves retested satisfactorily.

There are minimal safety implications associated with this event since in each instance that a valve had a high leak rate, the redundant valve had an acceptable leak rate as shown by the total "as found" minimum pathway leakage of 24,643 scm. In addition, the seal injection line outside of containment is a secure system with QA-1 seismically mounted lines connected to positive displacement charging pumps. As of May 5, 1995, Kewaunee's total "as left" maximum pathway leakage was 50,648 scm. Kewaunee is continuing to investigate the failures of these valves and the associated inspection results.

**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

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.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (8)			PAGE (3)
Kewaunee Nuclear Power Plant	05000305	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 5
		95	- 002 -	00	

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

Description of Event

This report describes an event which resulted in a condition prohibited by Kewaunee's Technical Specifications. Technical Specification 4.4.b.8.a requires a combined leak rate from all type B and C local leak rate tests be less than 0.60 La. For Kewaunee, 0.60 La is equal to a leakage of 322,800 standard cubic centimeters per minute (sccm). On April 6, 1995, with the plant in refueling shutdown, the local leak rate test volumes associated with the reactor coolant pump (RXCP) [P] A and B seal injection lines displayed high leak rates. These test volumes had high leak rates due to check valves [ISV] CVC-206A and CVC-205B not seating completely. CVC-205B had a leak rate of 160,000 sccm and CVC-206A had a leak rate of 160,000 sccm also. CVC-206A and CVC-205B are Kerotest model 9911S spring loaded piston check valves. The redundant A train seal injection line check valve, CVC-205A, indicated an acceptable leakage of 592 sccm. The redundant B train seal injection line check valve, CVC-206B, also indicated an acceptable leakage of 2.3 sccm. The seal injection lines are 2-inch lines that supply water to the seals on each RXCP.

As a result of the seal injection valves' high leak rates, Kewaunee's "as found" maximum pathway leakage exceeded 322,800 sccm when the remaining "as found" leak rates were tabulated. Kewaunee's total "as found" maximum pathway leakage was 388,205 sccm. Kewaunee's total "as found" minimum pathway leakage was 24,643 sccm. Maximum and minimum pathway leakages represent the sum of each penetration's highest and lowest barrier leak rates, respectively. On May 5, 1995, the total "as left" maximum pathway leakage had been reduced to 50,648 sccm and the total "as left" minimum pathway leakage was 24,214 sccm.

**LICENSEE EVENT REPORT (LER)  
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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

Cause of Event

In April 1995, with the plant in refueling shutdown, the failed seal injection check valves were disassembled and inspected. The inspection did not reveal excessive wear or foreign matter in the valve. However, the inspection did reveal the soft seat insert for the valves to be non-concentric. The non-concentric portion of the valve disc seat was raised up to 1/16" for approximately 15 percent of the valve disc. Therefore, the cause of the high leakages is attributed to the non-concentricity of the soft seat insert. In addition, minimal mechanical binding may be present although inspection results did not indicate any wear on the valves.

Analysis of Event

As a result of the 1995 containment isolation valve type B and type C leak rate testing, it was discovered that Kewaunee exceeded the associated Technical Specification 4.4.b.8.a. This event is being reported in accordance with 10 CFR 50.73 (a)(2)(i)(B) as a condition prohibited by technical specifications.

There are minimal safety implications associated with this event since in each instance in which a valve had a high leak rate, the redundant valve had an acceptable leak rate as shown by the total "as found" minimum pathway leakage of 24,643 sccm. Since the minimum pathway leakage was such an insignificant fraction of the maximum allowable leakage (7.6 percent), Kewaunee operated within its design bases. In addition, the seal injection line outside of containment is a secure system with QA-1 seismically mounted lines connected to positive displacement charging pumps. This configuration provides an additional leakage barrier for each of the seal injection penetrations. Therefore, if one of the redundant check valves also failed, containment atmosphere would be contained.

**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

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

Corrective Actions

In April 1995, with the plant in refueling shutdown, CVC-205B and CVC-206A were disassembled and inspected. The valve discs for each of the valves were replaced. A retest in April 1995 indicated acceptable leakages of 5.9 sccm for CVC-206A and 46.7 sccm for CVC-205B.

Kewaunee has experienced similar events in the past (LER 92-005, LER 93-007, and 94-003) and had previously scheduled the disassembly of the seal injection line check valves for April 1995. In addition to the two valves above, Kewaunee also inspected two other Kerotest 9911S check valves, CVC-10 and CVC-55. Inspection of these valves revealed minimal abnormalities with the soft seat inserts. The valve discs were replaced and the valves were successfully retested. Kewaunee will further investigate the inspection results of the Kerotest model 9911S valves and will continue to pursue potential replacement valves.

Additional Information

Similar Events:

<u>LER</u>	<u>Title</u>
84-006	Redundant containment isolation valves with excessive leakage.
86-002	Local leak rate test results exceed Tech. Spec. limits due to degraded component performance at three penetrations.
92-005	Local leak rate "as found" leakage exceeds technical specifications.

**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

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

93-007            Local leak rate "as found" leakage exceeds technical specification requirements due to a check valve not seating properly.

94-003            Local leak rate "as found" leakage exceeds technical specification requirements due to improperly seated check valves.

Equipment Failures:            CVC-206A and CVC-205B are 2-inch stainless steel spring loaded piston check valves. The check valves are manufactured by Kerotest Corporation (model 9911S).