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AUTH.NAME AUTHOR AFFILIATION
SCHOMMER,K.J. Wisconsin Public Service Corp.
SCHROCK,C.A. Wisconsin Public Service Corp.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 94-003-00:on 940407,two LLRT vols associated w/RCP A & B seal injection lines could not be pressurized to required 46 psig due to check valves CVC-206A & CVC-205B not seating properly.Subj valves replaced.W/940509 ltr.

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May 9, 1994

10 CFR 50.73

U. S. Nuclear Regulatory Commission
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Ladies/Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Reportable Occurrence 94-003-00

In accordance with the requirements of 10 CFR 50.73, "Licensee Event Report System," the attached Licensee Event Report for reportable occurrence 94-003-00 is being submitted.

Sincerely,

C. A. Schrock
Manager-Nuclear Engineering

RTS/cjt

Attach.

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

LER\COVERLTR.WP

NRC FORM 366 (5-92)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

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.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Kewaunee Nuclear Power Plant	05000305	1 OF 5

TITLE (4) Local Leak Rate "As Found" Leakage Exceeds Technical Specification Requirements Due To Improperly Seated Check Valves.

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	07	94	94	-- 003 --	00	05	09	94	N/A	05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	N
POWER LEVEL (10)	000

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (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
	20.405(a)(1)(iii)	X	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)
	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 (Include Area Code)
Keith J. Schommer - Plant Nuclear Engineer	414 388-2560

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
X	KO	ISV	K085	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 15 single-spaced typewritten lines) (16)

On April 7, 1994, with the plant in refueling shutdown, two local leak rate test volumes associated with the reactor coolant pump A and B seal injection lines could not be pressurized to the required 46 psig. The test volumes did not pressurize due to check valves CVC-206A and CVC-205B not seating properly. 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 standard cubic centimeters per minute (sccm). The redundant seal injection line check valves indicated acceptable leakages of 227 sccm and 12.2 sccm. The seal injection lines are 2-inch lines that supply water to the seals on each reactor coolant pump. On April 20, 1994, a 2-inch check valve in the charging line also failed to seat properly preventing the associated test volume from pressurizing to 46 psig. The redundant valves indicated an acceptable combined leakage of 58.4 sccm.

There are no 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 3,561.1 sccm. As of May 4, 1994, Kewaunee's total "as left" maximum pathway leakage was 7,496.8 sccm. Kewaunee has initiated an engineering support request which will further investigate the failures of these valves and determine if acceptable replacement options are available.

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 7, 1994, 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 did not pressurize to the required 46 psig. These test volumes did not pressurize due to cheek valves [ISV] CVC-206A and CVC-205B not seating properly. CVC-206A and CVC-205B are Kerotest model 9911S spring loaded piston check valves. As a result, Kewaunee's "as found" maximum pathway leakage exceeded 322,800 sccm. The redundant A train seal injection line check valve, CVC-205A, indicated an acceptable leakage of 227 sccm. The redundant B train seal injection line check valve, CVC-206B, also indicated an acceptable leakage of 12.2 sccm. The seal injection lines are 2-inch lines that supply water to the seals on each RXCP.

On April 20, 1994, with the plant in refueling shutdown, a 2-inch charging line check valve, CVC-10, did not seat properly. CVC-10 is a Kerotest model 9911S spring loaded piston check valve. The associated test volume could not be pressurized to the required 46 psig. The redundant isolation valves, CVC-7 and CVC-9 were found to have an acceptable combined leakage of 58.4 sccm. The charging line is a 2-inch line that supplies makeup water to the reactor coolant system.

With the exclusion of the leakage from CVC-206A, CVC-205B, and CVC-10, Kewaunee's total "as found" maximum pathway leakage was 11,063.2 sccm. Kewaunee's total "as found" minimum pathway leakage was 3,561.1 sccm. Maximum and minimum pathway leakages represent the sum of each penetration's highest and lowest barrier leak rates, respectively. On May 4, 1994, prior to the plant exceeding 200°F, the total "as left" maximum pathway leakage had been reduced to 7,496.8 sccm and the total "as left" minimum pathway leakage was 3,466.9 sccm.

Cause of Event

On May 7, 1994, the failed seal injection check valves were disassembled and inspected. The inspection did not reveal excessive wear or significant amounts of foreign matter in the valve. Therefore, the cause of the high leakages is attributed to mechanical binding of the valves.

During the initial test of CVC-10, the valve did not seat properly. After the "as found" condition was recorded, the valve line was flushed with air in both directions. As expected, this activity successfully cycled CVC-10 to the fully closed position. A retest resulted in an acceptable leak rate. Therefore, the cause of the leakage is attributed to mechanical binding of the valve.

Analysis of Event

As a result of the 1994 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 no 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 3,561.1 sccm. Since the minimum pathway leakage was such an insignificant fraction of the maximum allowable leakage, Kewaunee operated within its design bases.

A complete summary of the 1994 local leak rate test results will be included in the 1994 Containment Integrated Leak Rate Test Report that will be submitted to the NRC prior to July 28, 1994.

Corrective Actions

On April 21, 1994, with the plant in refueling shutdown, the replacement of CVC-205B and CVC-206A was completed. A retest on April 21, 1994 indicated acceptable leakages of 8.7 sccm for CVC-206A and 26.7 sccm for CVC-205B. On April 20, 1994, the line associated with CVC-10 was flushed with air. A retest of CVC-10 the same day indicated an acceptable leakage of 138 sccm.

Kewaunee has experienced similar events in the past (LER 92-005 and LER 93-007) and had previously scheduled the replacement of the seal injection line valves for April 1994, pending 1994 local leak rate test results. In addition, an engineering support request has been generated to further investigate the failures of Kerotest model 9911S valves. The engineering support request will determine the acceptability of modifications that could improve the performance of these valves or valve replacement.

Additional Information

Similar Events:

LER	Title
77-002	Leakage rate for the reactor containment building purge and relief line isolation valves could not be measured.
77-012	Five containment isolation valves were found with above specification leak rates.
80-025	Five containment isolation valves with unacceptable as-found leakage.
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.
93-007	Local leak rate "as found" leakage exceeds technical specification requirements due to a check valve not seating properly.

Equipment Failures: CVC-206A, CVC-205B, and CVC-10 are 2-inch stainless steel spring loaded piston check valves. The check valves are manufactured by Kerotest Corporation (model 9911S).