Northern States Power
Company
Prairie Island Nuclear Generating Plant
1717 Wakonade Dr. East
Welch, Minnesota 55089

February 14, 1996

10 CFR Part 50
Section 50.73

U S Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Docket Nos. 50-282 License Nos. DPR-42
50-306 DPR-60

Failure of Containment Isolation Valve to Pass its Leak Rate Test

The Licensee Event Report for this occurrence is attached. In the report, we made no new NRC commitments.

Please contact us if you require additional information related to this event.

Jack Leveille
for Roger O Anderson
Director
Licensing and Management Issues

c: Regional Administrator - Region III, NRC
NRR Project Manager, NRC
Senior Resident Inspector, NRC
Kris Sanda, State of Minnesota

Attachment
2100 5

IE22
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NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), 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)
Prairie Island Nuclear Generating Plant Unit 1	05000 282	1 OF 3

TITLE (4) Failure of Containment Isolation Valve to Pass its Leak Rate Test

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 NAME	DOCKET NUMBER
										05000
01	15	96	96	-- 003 --	0	2	14	96	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
POWER LEVEL (10)	0	20.2201(b)	20.2203(a)(2)(v)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)
		20.2203(a)(1)	20.2203(a)(3)(i)	50.73(a)(2)(ii)	50.73(a)(2)(x)
		20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71
		20.2203(a)(2)(ii)	20.2203(a)(4)	50.73(a)(2)(iv)	OTHER
		20.2203(a)(2)(iii)	50.36(c)(1)	50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
		20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Jack Leveille	612-388-1121

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	CB	V	R340	Y						

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION	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)

During January and February 1996, Unit 1 was at cold shutdown for refueling. Local leak rate testing of containment penetrations was performed during the refueling outage. On January 15, 1996, the leak rate through check valve VC-8-5, No. 11 Reactor Coolant Pump Seal Water Supply, located inside containment was calculated to be more than the 154,800 scc/min (0.6 L_a) total allowable per Technical Specification 4.4.A.4 for all Type B and C penetrations combined. The redundant isolation for this penetration (13A) outside containment is the closed Chemical and Volume Control System (CVCS). Surveillance procedure SP-1366 verifies leak tightness of the CVCS valves that are required to perform a function as a closed system outside containment. This test was performed with satisfactory results on January 20, 1996. The leaking check valve was removed and replaced with a spare; the replacement valve was leak rate tested with satisfactory results.

All other containment penetrations were tested with satisfactory results except that seven Type B flange tests remain to be performed; all of these flanges have had a good performance history, thus the total leak rate for containment is expected to be low.

EVENT DESCRIPTION

During January and February 1996, Unit 1 was at cold shutdown for refueling. Local leak rate testing (LLRT) of containment penetrations (EIIS Component Identifier - PEN) was performed during the refueling outage. On January 15, 1996, the leak rate through check valve VC-8-5 (EIIS Component Identifier - V), No. 11 Reactor Coolant Pump Seal Water Supply, located inside containment was calculated to be more than the 154,800 scc/min (0.6 L_a) total allowable per Technical Specification 4.4.A.4 for all Type B and C penetrations combined. The redundant isolation for this penetration (13A) outside containment is the closed Chemical and Volume Control System (CVCS) (EIIS System Identifier - CB). Surveillance procedure SP-1366 verifies leak tightness of the CVCS valves that are required to perform a function as a closed system outside containment. This test was performed with satisfactory results on January 20, 1996. The leaking check valve was removed and replaced with a spare; the replacement valve was leak rate tested with satisfactory results.

All other containment penetrations were tested with satisfactory results except that seven Type B flange tests remain to be performed; all of these flanges have had a good performance history, thus the total leak rate for containment is expected to be low.

CAUSE OF THE EVENT

The valve disc was binding, causing it to hang up in the partially open position. The integral stellite bearings, which are part of the disc, were rubbing against the edges of the valve's outlet port causing rough worn spots to develop on the disc bearings. The worn spots on the bearings offered greater resistance to movement as the disc closed, causing it to hang up in the partially open position. There were several such wear areas on both the upper and lower surfaces.

ANALYSIS OF THE EVENT

The event is reportable pursuant to 10CFR50.73(a)(2)(i)(B) since the leak rate was above the limit given in Technical Specification 4.4.A.4.a.

Because the closed loop CVCS redundant isolation for Penetration 13A was intact and seal injection pressure is normally higher than the reactor coolant system pressure and the low likelihood of piping failure of the CVCS, the failure of VC-8-5 to meet the LLRT acceptance criteria is not perceived as risk significant. For this reason, the health and safety of the public were unaffected.

CORRECTIVE ACTION

The check valve was replaced and passed its LLRT.

Analysis of Nuclear Plant Reliability Data System (NPRDS) failure data for this model of valve in similar service indicates the valves are performing well in the industry. Conversation with other utilities and review of their LLRT data for these valves confirmed the satisfactory performance of this style of valve in seal injection applications. Therefore, there are no plans for increased maintenance of these valves but we are considering increased inspection of this model of check valve as part of the plant check valve inspection program is being considered.

FAILED COMPONENT IDENTIFICATION

Rockwell-Edwards 2-C58 1500# check valve, Figure 3674F316J

PREVIOUS SIMILAR EVENTS

Previous similar events involving the same model valve have been reported as Unit 1 LERs 77-010 and 85-005 and Unit 2 LER 77-039.