



Northern States Power Company

Prairie Island Nuclear Generating Plant

1717 Wakonade Dr. East
Welch, Minnesota 55089

November 1, 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 to Perform Section XI Testing on Chemical Feed Check Valves

The Licensee Event Report for this occurrence is attached. In the report, we made one new NRC commitment, indicated as the statement in italics in the corrective action section.

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

Jack Leveille

for Michael D Wadley
Plant Manager
Prairie Island Nuclear Generating Plant

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

Attachment

9611060136 961101
PDR ADOCK 05000282
S PDR

IE221

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)

Prairie Island Nuclear Generating Plant Unit Unit 1

DOCKET NUMBER (2)

05000 282

PAGE (3)

1 OF 5

TITLE (4)

Failure to perform Section XI testing on chemical feed check valves

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
10	02	96	96	-- 17 --	00	11	1	96	Prairie Island Unit 2	05000 306
									FACILITY NAME	DOCKET NUMBER
										05000
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)								
N		20.2201(b)			20.2203(a)(2)(v)			X	50.73(a)(2)(i)	50.73(a)(2)(viii)
POWER LEVEL (10)		20.2203(a)(1)			20.2203(a)(3)(i)				50.73(a)(2)(ii)	50.73(a)(2)(x)
100		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

Jack Leveille

TELEPHONE NUMBER (Include Area Code)

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

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).		X NO		EXPECTED SUBMISSION	MONTH	DAY	YEAR

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

On September 30, 1996 both Units were operating at 100% power. SP 1355, Checking Chemical Feed and Auxiliary Feedwater Check Valves - Unit 1, which verifies that the subject valves travel to their closed position when a pressure source is introduced downstream of the valves, was being performed. The subject valves are connected to piping which provides flow to the secondary side of the steam generators. It was questioned whether one check valve was actually tested in a manner which provides a means of making the determination required. Two days later an engineering assessment concluded that ASME Section XI closure testing of the safety related check valve (CF-11-2) from a chemical feed pump to 12 Steam Generator was indeterminate due to an inadequate procedure. The conclusion was also valid for the corresponding Unit 2 valve (2CF-11-2) to 22 Steam Generator.

The Unit 1 valve was tested with a revised procedure with acceptable results. The Unit 2 valve has been valved out of service and will be maintained out of service until it is tested with a revised procedure.

(4-b)

LICENSEE EVENT REPORT (LER)

TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
Prairie Island Nuclear Generating Plant Unit 1	05000 282	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 5
		96	-- 17 --	0	

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

EVENT DESCRIPTION

Summary:

On September 30, 1996 both Units were operating at 100% power. SP 1355, Checking Chemical Feed and Auxiliary Feedwater Check Valves - Unit 1, which verifies that the subject valves travel to their closed position when a pressure source is introduced downstream of the valves, was being performed. The subject valves are connected to piping which provides flow to the secondary side of the steam generators. It was questioned whether one chemical feed check valve¹ was actually tested in a manner which provides a means of making the determination required. Two days later an engineering assessment concluded that ASME Section XI closure testing of the safety related check valve (CF-11-2) from a chemical feed pump² to 12 Steam Generator³ was indeterminate due to an inadequate procedure. The conclusion was also valid for the corresponding Unit 2 valve (2CF-11-2) to 22 Steam Generator.

Details:

SP 1355, among other things, verifies that CF-11-1 and CF-11-2; the chemical feed to steam generator check valves, travel to their closed position by introducing a pressure source downstream of these valves and monitoring pressure in a closed volume (an isolated portion of the chemical feed system) upstream of the valves. No pressure increase in the closed volume indicates closure of the check valves.

During the performance of SP 1355 on September 30, 1996, a question was raised as to whether the chemical feed system as aligned would allow a pressure increase resulting from a postulated leak through CF-11-2, 12 Chemical Feed Pump to 12 Steam Generator, to be monitored by the pressure gauge, which for this test, is installed on the 11 Chemical Feed Pump discharge piping.

The investigation into this inquiry indicated that the test was written assuming that the cross-tie valves between 11 and 12 Chemical Feed Pumps (CF-2-35 and CF-2-36, see Figure 1) were normally open. These valves are not normally open and the procedure did not verify their positions. The result was that, as the chemical feed piping was aligned during the September 30, 1996 performance of SP-1355, a postulated failure of CF-11-2 to close would not have been detected.

The corresponding surveillance procedure for Unit 2 (SP 2355, Checking Chemical Feed and Auxiliary Feedwater Check Valves - Unit 2) was immediately reviewed and determined to have the same

¹ (EIS System Identifier: KD; EIS Component Identifier: V)

² (EIS System Identifier: KD; EIS Component Identifier: P)

³ (EIS System Identifier: AB; EIS Component Identifier: SG)

NRC FORM 366A (4-95)		U.S. NUCLEAR REGULATORY COMMISSION			
LICENSEE EVENT REPORT (LER) TEXT CONTINUATION					
FACILITY NAME (1)		DOCKET		LER NUMBER (6)	
Prairie Island Nuclear Generating Plant Unit 1		05000 282		YEAR 96 -- 17 -- 0	SEQUENTIAL NUMBER REVISION NUMBER
				PAGE (3) 3 OF 5	

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

deficiency. In the case of SP-2355 the valve alignment required to test 2CF-11-2, 22 Chemical Feed Pump to 22 Steam Generator, was not properly verified.

CAUSE OF THE EVENT

The intent of the portion of SP-1355 (SP-2355) related to chemical feed is to verify that check valves CF-11-1 and CF-11-2 (2CF-11-1 and 2CF-11-2) travel to their closed positions when subjected to reverse flow and/or pressure. This is accomplished by pressurizing the piping system down stream of each of these valves while simultaneously monitoring the pressure in an isolated section of piping immediately upstream. The valves in this upstream section of piping were to be aligned such that a pressure increase resulting from a failure to close of either CF-11-1 or CF-11-2 (2CF-11-1 and 2CF-11-2) could be monitored at one pressure gauge location.

It has been determined that the surveillance procedures were inadequate in that they did not provide instructions to verify the proper alignment of two cross tie valves required to be in the open position. With either of these valves, CF-2-35 or CF-2-36 (CF-2-35 or CF-2-36) in the closed position the pressure increase resulting from a postulated failure of CF-11-2 (2CF-11-2) to open would not be monitored at the common pressure gauge location.

ANALYSIS OF THE EVENT

The valve on Unit 1, CF-11-2, was tested using the correct valve lineup and it was verified operable. The valve on Unit 2, 2CF-11-2, has been removed from service and remain in this condition until surveillance is performed with a revised procedure. Therefore these valves do not pose a risk to health and safety of the public.

The two check valves have not been tested quarterly, this is a violation of Technical Specifications and thus is reportable under 10 CFR 50.73(a)(2)(i)(B).

CORRECTIVE ACTION

A review of past performances of these surveillance procedures was performed. This review determined that the alternate test method provided by the procedure which would have provided the required guidance to ensure the proper valve line-up had not been performed for CF-11-2 or 2CF-11-2. A temporary memo was initiated in association with SP-1355. The procedure as performed per this temporary memo provides instructions necessary to ensure proper valve alignment. SP 1355 was performed implementing this temporary memo and it was determined that CF-11-2 was operable.

(4-95)

LICENSEE EVENT REPORT (LER)

TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Prairie Island Nuclear Generating Plant Unit 1	05000 282	96	-- 17 --	0	4 OF 5

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

AF-18-9, Chemical Feed to 12 Steam Generator, downstream of 2CF-11-2 has been closed, removing 2CF-11-2 from service. AF-18-9 is being administratively controlled in the closed position and will remain so until the revised version of SP-2355 is performed during its normal quarterly interval.

Procedure changes have been submitted to incorporate the necessary changes into both SP 1355 and SP 2355. As revised the procedures provide the additional guidance required to verify the required chemical addition valve line-up.

Additionally, as revised the procedures will no longer rely on a common pressure monitoring location. Rather an upstream section of piping unique to each check valve will be isolated and pressure monitored in conjunction with the introduction of reverse flow and/or pressure.

FAILED COMPONENT IDENTIFICATION

None

PREVIOUS SIMILAR EVENTS

While there have been instances of missed surveillances in the past at Prairie Island, none have involved similar circumstances of this event.

LICENSEE EVENT REPORT (LER)

TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)	
Prairie Island Nuclear Generating Plant Unit 1	05000 282	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	5 OF	5
		96	-- 17 --	0		

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

FIGURE 1

