Niagara Mohawk®

December 22, 2000
NMP2L 2006

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

RE: Docket No. 50-410
Licensee Event Report 00-17

Gentlemen:

In accordance with 10 CFR 50.73(a)(i)(B), we are submitting Licensee Event Report 00-17, "Inadequate Test Methodology used for Reverse Flow Testing of Check Valve in Low Pressure Core Spray, Minimum-Flow Recirculation Line."

Very truly yours,

Michael F. Peckham
Plant Manager - Nine Mile Point Unit 2

MFP/KLE/cld
Attachment

xc: Mr. H. J. Miller, NRC Regional Administrator, Region I
Mr. G. K. Hunegs, NRC Senior Resident Inspector
Records Management

IE22

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104
EXPIRES:

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Nine Mile Point Unit 2	0 5 0 0 0 4 1 0	01 OF 04

TITLE (4)
Inadequate Test Methodology used for Reverse Flow Testing of Check Valve in Low Pressure Core Spray, Minimum-Flow Recirculation Line

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)
11	22	00	00		17	00	12	22	00	N/A	
										N/A	

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check one or more of the following)* (11)

POWER LEVEL (10)				
100%	☐ 20.2201(b)	☐ 20.2203(a)(2)(v)	☒ 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 *(Specify in Abstract below and in Text, NRC Form 366A)*
	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(1)	☐ 50.73(a)(2)(v)	
	☐ 20.2203(a)(2)(iv)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
William R. Yaeger - Manager Engineering Services	(315) 349-7834

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
☐ YES *(If yes, complete EXPECTED SUBMISSION DATE)*	☒ NO				

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

On November 22, 2000, with the plant at 100 percent power, Niagara Mohawk Power Corporation identified that the methodology for reverse flow testing Low Pressure Core Spray System Check Valve 2CSL*V9 was inadequate. Technical Specification 4.0.5 requires inservice testing of all American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components in accordance with Section XI of the ASME Boiler and Pressure Vessel Code. Section XI of the ASME Boiler and Pressure Vessel Code requires a quarterly surveillance to reverse flow test Low Pressure Core Spray System Check Valve 2CSL*V9. The surveillance procedure did not establish a condition that would properly reverse flow test the check valve. Failing to properly reverse flow test 2CSL*V9 is a violation of Technical Specification 4.0.5.

The cause was the responsibility for ensuring that the test method actually worked was not clearly assigned. A contributing cause was the absence of written standards or guidance for validating that a test procedure actually performed the intended test, resulting in a lack of rigor in the validation process.

Corrective actions include: revising the surveillance procedure and retesting Valve 2CSL*V9, clearly assigning roles and responsibilities within selected programs, and developing a validation checklist to establish effectiveness of pump and valve test methods.

I. DESCRIPTION OF EVENT

On November 22, 2000, with the plant at 100 percent power, reverse flow testing was being conducted on Low Pressure Core Spray System Check Valve 2CSL*V9. During the test, the methodology for conducting the test was questioned and determined to be inadequate. The test was declared a failure and low pressure core spray system was declared inoperable. Technical Specification 4.0.5 requires inservice testing of all American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components in accordance with Section XI of the ASME Boiler and Pressure Vessel Code. Section XI of the ASME Boiler and Pressure Vessel Code requires a quarterly surveillance to reverse flow test Low Pressure Core Spray Check Valve 2CSL*V9. The surveillance procedure did not establish a condition that would properly reverse flow test the check valve.

Valve 2CSL*V9 is a 12-inch Velan check valve in the full-flow test / minimum-flow recirculation line for Low Pressure Core Spray Pump 2CSL*P1. The reverse flow testing method depended upon running Residual Heat Removal (RHR) Pump 2RHS*P1A to impose a reverse differential pressure on Valve 2CSL*V9. The presence of sufficient pressure from the running RHR pump to adequately reverse flow test Valve 2CSL*V9 had never been verified or validated. Upon review, Niagara Mohawk Power Corporation (NMPC) concluded that insufficient pressure was present and that the test methodology was inadequate.

On November 23, 2000, the surveillance procedure was revised, incorporating correct methodology; Valve 2CSL*V9 was satisfactorily tested; and the low pressure core spray system was declared operable.

A review of the testing methods used for Valve 2CSL*V9 concluded that inadequate testing methods had been used on Valve 2CSL*V9 since November 1990.

II. CAUSE OF EVENT

The cause was that the responsibility for ensuring that the test method actually worked was not clearly assigned. Program ownership, program implementation and program procedures are split among three departments. A contributing cause was the absence of written standards or guidance for validating that a test procedure actually performed the intended test, resulting in a lack of rigor in the validation process.

III. ANALYSIS OF EVENT

This event is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B), which requires a report for any operation or condition prohibited by the plant's Technical Specifications. Technical Specification 4.0.5 requires inservice testing of all ASME Code Class 1, 2, and 3 components in accordance with Section XI of the ASME Boiler and Pressure Vessel Code. Section XI of the ASME Boiler and Pressure Vessel Code requires a quarterly surveillance to verify reverse flow for Low Pressure Core Spray Check Valve 2CSL*V9. The surveillance procedure did not establish a condition that would properly reverse flow test the check valve. Failing to properly reverse flow test Valve 2CSL*V9, from November 1990 until November 2000, is a violation of Technical Specification 4.0.5.

On November 23, 2000, the check valve was satisfactorily tested, demonstrating that the valve would have performed its safety function if called upon.

NMPC performed a probabilistic risk analysis for Valve 2CSL*V9 failing to close and determined that it has very low risk significance.

Based on the information above, the missed Technical Specification surveillance requirement for Check Valve 2CSL*V9 did not pose a threat to the health and safety of the general public or plant personnel.

IV. CORRECTIVE ACTIONS

1. A temporary change was made to the surveillance procedure and Valve 2CSL*V9 was tested satisfactorily.

2. A permanent change incorporating the validated methodology into the surveillance procedure will be completed by February 23, 2001.

3. The interface procedures associated with the Inservice Inspection Program, Inservice Testing Program, Appendix J Program, Flow Accelerated Corrosion Program, Fire Protection Program and Environmental Qualification Program will be reviewed to ensure that roles and responsibilities for the activities of each program are clearly established. This review will be completed by May 20, 2001.

4. Procedures NIP-PRO-03, "Preparation and Review of Technical Procedures," and NIP-PRO-04, "Procedure Change Evaluations and Future Procedure Enhancements," will be modified to add an additional requirement for cross-disciplinary review by ASME Section XI Programs group. The procedure changes will be completed by December 29, 2000.

5. ASME XI Programs will develop and incorporate into the ASME Programs Manual the validation criteria and validation checklist to validate the effectiveness of pump and valve test methods. These modifications to the ASME Program Manual will be completed by February 5, 2001.

V. ADDITIONAL INFORMATION

A. Failed components: None

B. Previous similar events:

Licensee Event Report 99-08 documents a Technical Specification violation due to an inadequate reverse flow test of a Reactor Core Isolation Cooling check valve. The corrective actions for Licensing Event Report 99-08 would not have prevented incorporating the incorrect test methodology for the testing of Valve 2CSL*V9 since the methodology was already in place. However, the investigation into extent of condition should have identified that the testing methodology for Valve 2CSL*V9 was inadequate.

C. Identification of components referred to in this licensee event report:

Components	IEEE 803A Function	IEEE 805 System ID
Residual Heat Removal	N/A	BO
Low Pressure Core Spray System	N/A	BN
Reactor Core Isolation Cooling	N/A	BM
Valve	ISV	BM, BN
Pump	P	BN, BO