

Niagara Mohawk

December 9, 1999
NMP1L 1487

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

RE: Docket No. 50-220
LER 99-06

Gentlemen:

In accordance with 10 CFR 50.73(a)(2)(i)(B), we are submitting LER 99-06, "Shutdown Cooling Water Seal not Established as Required by Technical Specification 3.3.0."

Sincerely,



Lawrence A. Hopkins
Plant Manager - NMP1

LAH/CES/kap

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

IE22

LICENSEE EVENT REPORT (LER)

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)

Nine Mile Point Unit 1

DOCKET NUMBER (2)

05000220

PAGE (3)

01 OF 06

TITLE (4) Shutdown Cooling Water Seal not Established as Required by Technical Specification 3.3.0

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)	
04	03	95	99	006	00	12	09	99	N/A		
									N/A		

OPERATING MODE (9)

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following)

POWER LEVEL (10) 0%	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(2)(v)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(x)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 73.71
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> OTHER
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<i>(Specify in Abstract below and in Text, NRC Form 366A)</i>
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

David Topley, Manager Operations

TELEPHONE NUMBER

(315) 349-1752

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)

NO

EXPECTED SUBMISSION DATE (15)

MONTH

DAY

YEAR

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

On November 9, 1999, with the plant shut down, Niagara Mohawk Power Corporation identified that beginning on April 3, 1995, for approximately eight days, the breakers associated with the shutdown cooling system isolation valves were not placed in the open position and racked out. Additionally, on June 6, 1999, during the 10-year reactor vessel leakage test, the shutdown cooling system inboard isolation valves were open and the breakers were not racked out. When both of these events occurred, the plant condition required primary containment integrity to be in effect, which includes having the shutdown cooling isolation valves closed and the associated breakers for the valves racked out to maintain a water seal. These two events resulted in Technical Specification 3.3.0 not being met.

The causes of these two events were determined to be inadequate training and review of procedures affected by the water seal modification.

Procedures were revised to provide additional controls and guidance on when shutdown cooling water seal is required to be established. Licensed operators were given additional training on primary containment integrity and the shutdown cooling system water seal. Additionally, new controls will be evaluated and added, if appropriate, to the modification process for training and procedure revisions. Until this is done, training and procedure revisions required for design changes will require an independent verification to ensure the procedure changes and training are adequate.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATIONESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION
REQUEST: 30.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE
RECORDS AND REPORTS MANAGEMENT BRANCH (P-330), 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) Nine Mile Point Unit 1	DOCKET NUMBER (2) 05000220	LER NUMBER (6)			PAGE (3) 02 OF 06
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
		99	- 06	- 00	

TEXT (if more space is required, use additional NRC Form 366A's) (17)

I. DESCRIPTION OF EVENT

On November 9, 1999, with the plant shut down, Niagara Mohawk Power Corporation (NMPC) identified that beginning on April 3, 1995, for approximately eight days, the breakers associated with the shutdown cooling system isolation valves were not placed in the open position and racked out. Additionally, on June 6, 1999, during the ten-year reactor vessel leakage test, the shutdown cooling system inboard isolation valves were open and the breakers were not racked out. When both of these events occurred, the plant condition required primary containment integrity to be in effect, which includes having the shutdown cooling isolation valves closed and the associated breakers racked out in order to maintain a water seal. These two events resulted in Technical Specification 3.3.0 not being met, which required primary containment be established.

The shutdown cooling isolation valves were not originally designed to meet 10 CFR 50, Appendix J leakage requirements. In a letter dated August 27, 1984, NMPC requested exemption from 10 CFR 50, Appendix J, Type C leakage test and in a letter dated May 6, 1988, the NRC denied the exemption. NMPC decided to utilize a water seal in lieu of replacing the valves. In a letter dated June 30, 1994, NMPC proposed, in part, a water seal modification to meet the requirements of Section III.C.3(a)(b) of Appendix J. The safety evaluation associated with Technical Specification Amendment Number 154, dated March 20, 1995, states, in part, that during plant operation the shutdown cooling system isolation valves are normally closed and the breakers racked out to prevent a spurious valve opening from defeating the water seal. Based, in part, on this information, the NRC found the proposed water seal acceptable.

In 1995, Modification 88-153, which included Technical Specification Amendment Number 154, was implemented to ensure a water seal was established and maintained. Procedure revisions were made and operators were trained as part of operations acceptance of this modification. However, the specific requirements to maintain the shutdown cooling isolation valves closed and breakers racked out whenever primary containment integrity is required, did not get adequately incorporated into the appropriate procedures. During the investigation into these events, NMPC identified a number of issues concerning the plant modification control process. These issues are:

- Operator knowledge deficiencies were identified regarding the relationship of shutdown cooling water seal and primary containment integrity.
- Four procedures were identified that should have been revised prior to implementation of the modification.
- A procedure revision, which was performed as a result of the modification, was identified to be inadequate.

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

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 30.0 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) Nine Mile Point Unit 1	DOCKET NUMBER (2) 05000220	LER NUMBER (6)			PAGE (3) 03 OF 06
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
		99 -	06	- 00	

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

I. DESCRIPTION OF EVENT (Cont'd)

An extent of condition review was also conducted to assess the overall effectiveness of the implementation of safety-related modifications. Based on the review of eleven modifications, NMPC concluded that the modification process identified and revised procedures as required to incorporate the requirements of the design to operate the plant.

The 1995 event was previously identified as a deviation (Deviation/Event Report 1-1995-7106), but was inappropriately determined to be not reportable in accordance with 10 CFR 50.73. This licensee event report is intended to satisfy the required reporting.

II. CAUSE OF EVENT

The causes of these two events were determined to be inadequate training and review of the procedures affected by the water seal modification. Training department personnel were not involved in the early development of the modification, which resulted in a less than thorough understanding of the design change. Consequently, the lesson plan did not contain administrative controls, procedure changes, or licensing basis information pertaining to primary containment integrity and 10 CFR 50 Appendix J requirements. With respect to the inadequate procedures, the procedure reviewers did not understand the implications of the modification on primary containment integrity. Therefore, several impacted procedures were missed.

III. ANALYSIS OF EVENT

These events are reportable in accordance with 10 CFR 50.73(a)(2)(i)(B), "Any operation or condition prohibited by the plant's Technical Specifications." For approximately eight days in 1995, the breakers associated with the shutdown cooling system isolation valves were not placed in the open position and racked out, and during the 10-year reactor vessel leakage test performed in 1999, the shutdown cooling system inboard isolation valves were open and the breakers were not racked out as required to maintain primary containment integrity. Therefore, Technical Specification 3.3.0 was not met.

**LICENSEE EVENT REPORT (LER)
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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Nine Mile Point Unit 1	05000220	99	- 06	- 00	04 OF 06

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

III. ANALYSIS OF EVENT (Cont'd)

Once the reactor water has been cooled to about 350 degrees F by the main condenser, the shutdown cooling system is used to cool the reactor water down to 125 degrees F and maintain that temperature by removing fission product decay heat absorbed by the reactor water. Reactor water enters the system from the suction side of one of the reactor recirculation pumps, flows through the shutdown cooling loop, then discharges into the discharge side of another reactor recirculation loop pump. Therefore, the shutdown cooling system is located entirely within primary and secondary containment.

In order to adversely affect the health and safety of the general public or plant personnel, reactor coolant would have to leak past the shutdown cooling isolation valves and exit the system boundary via an open penetration. NMPC maintains control over the system lineup to ensure components are in their required position. This lineup does not allow any component to be open that would provide a flow path for reactor coolant to exit the system boundary. In addition, the shutdown cooling system is seismically designed to withstand earthquake acceleration factors of 0.20g horizontal and 0.10g vertical.

NMPC performed a probabilistic risk analysis for the events reported in this licensee event report and determined that they are non-risk significant.

Based on the information provided above, the failure to have the shutdown cooling system isolation valves closed and the associated breakers racked out did not adversely affect the health and safety of the general public or plant personnel.

IV. CORRECTIVE ACTIONS

1. The following procedures were revised to provide additional controls and guidance for the conduct of reactor startup, establishment of primary and secondary containment, and conditions under which shutdown cooling system can be operated.

- N1-OP-43A Reactivity Control
- N1-OP-43B Balance of Plant Startup and Shutdown
- N1-OP-04 Shutdown Cooling System
- N1-PM-Q11 Primary Containment Manual Valve Check
- N1-PM-V16 Reactor Startup and Shutdown Prerequisite Verifications

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

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FACILITY NAME (1) Nine Mile Point Unit 1	DOCKET NUMBER (2) 05000220	LER NUMBER (6)			PAGE (3) 05 OF 06
		YEAR 99	SEQUENTIAL NUMBER 06	REVISION NUMBER 00	

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

IV. CORRECTIVE ACTIONS (Cont'd)

2. Licensed operators involved in plant startup were trained on the definition of primary containment integrity, the Technical Specifications limiting condition of operation requirements for establishing primary containment, the procedural requirements for establishing primary containment integrity, including the basis for the shutdown cooling system water seal and its relationship to primary containment integrity, and all related procedure changes.
3. As an interim measure, procedures required as a result of design changes are required to have an independent verification to ensure all changes are made before the modification is accepted by operations. Additionally, training conducted to support design changes is required to have an independent verification to ensure the training is thorough, technically accurate, and includes the bases for the change.
4. Procedure N1-IST-LK-101, "Reactor Pressure Vessel and ASME Class I System Leakage Test" will be revised to ensure the shutdown cooling system isolation valves are properly configured to support the requirements for primary containment. This action will be completed by January 15, 2000.
5. A multi-discipline team will evaluate and implement, if appropriate, specific controls to the modification process to ensure appropriate training is performed and all affected procedures are revised by February 28, 2000.

V. ADDITIONAL INFORMATION

- A. Failed components: none.
- B. Previous similar events:

Licensee Event Reports 96-03 (Power to Flow Ratio Technical Specification Violation Due to Ineffective Change Management), 99-07 (Potential Control Room Emergency Ventilation System Operation Outside the Design Basis due to Inadequate Evaluation), 98-01 (Violation of Secondary Containment During Maintenance), and 98-02 (Failure of Control Room Emergency Ventilation to Meet the Differential Pressure Requirements) describe changes that were made to the plant and the changes were not understood by operations personnel, not all operating modes were evaluated, and/or not all procedures were revised. Even though the cause of each of these events is similar, the circumstances surrounding each report are different. NMPC determined that the corrective actions from these other reports would not have prevented the events reported in this Licensee Event Report.

013

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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Nine Mile Point Unit 1	05000220	YEAR	-	SEQUENTIAL NUMBER	-	REVISION NUMBER
		99	-	06	-	00
06 OF 06						

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V. **ADDITIONAL INFORMATION (Cont'd)**

C. Identification of components referred to in this Licensee Event Report:

Components	IEEE 803A Function	IEEE 805 System ID
Shutdown Cooling System	N/A	BO
Containment Isolation Valves	ISV	JM
Breakers	BKR	JM
Water Seal	SEAL	JM
Reactor Vessel	RPV	AD