



November 30, 2000  
NMP2L 2001

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

RE: Docket No. 50-410  
Licensee Event Report 00-13, Supplement 1

Gentlemen:

In accordance with 10 CFR 50.73(a)(2)(i)(B), we are submitting Supplement 1 to Licensee Event Report 00-13, "Reactor Coolant Recirculation System Primary Containment Isolation Valves Not Tested as Required by Technical Specification 4.0.5." Supplement 1 contains additional information identified as a result of corrective actions associated with the condition described in Revision 0 of Licensee Event Report 00-13 and clarifies a corrective action.

Very truly yours,

A handwritten signature in black ink, appearing to read "M. F. Peckham", with a long horizontal flourish extending to the right.

Michael F. Peckham  
Plant Manager - NMP2

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

<b>FORM 366</b>				<b>U.S. NUCLEAR REGULATORY COMMISSION</b>				<b>APPROVED OMB NO. 3150-0104</b> <b>EXPIRES:</b>							
<b>LICENSEE EVENT REPORT (LER)</b>								<small>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</small>							
<b>FACILITY NAME (1)</b> Nine Mile Point Unit 2						<b>DOCKET NUMBER (2)</b> 05000410				<b>PAGE (3)</b> 01 OF 05					
<b>TITLE (4)</b> Reactor Coolant Recirculation System Primary Containment Isolation Valves Not Tested as Required by Technical Specification 4.0.5															
<b>EVENT DATE (5)</b>			<b>LER NUMBER (6)</b>				<b>REPORT DATE (7)</b>			<b>OTHER FACILITIES INVOLVED (8)</b>					
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)					
08	29	00	00	13	01	11	30	00	N/A						
									N/A						
<b>OPERATING MODE (9)</b>			1	<b>THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)</b>											
<b>POWER LEVEL (10)</b> 100%		<input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 20.2203(a)(2)(iv)		<input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 20.2203(a)(3)(ii) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.36(c)(1) <input type="checkbox"/> 50.36(c)(2)		<input checked="" type="checkbox"/> 50.73(a)(2)(i) <input type="checkbox"/> 50.73(a)(2)(ii) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 50.73(a)(2)(iv) <input type="checkbox"/> 50.73(a)(2)(v) <input type="checkbox"/> 50.73(a)(2)(vii)			<input type="checkbox"/> 50.73(a)(2)(viii) <input type="checkbox"/> 50.73(a)(2)(x) <input type="checkbox"/> 73.71 <input type="checkbox"/> <b>OTHER</b> <small>(Specify in Abstract below and in Text, NRC Form 366A)</small>						
<b>LICENSEE CONTACT FOR THIS LER (12)</b>															
<b>NAME</b> William Yaeger, Manager Engineering Services								<b>TELEPHONE NUMBER</b> (315) 349-7834							
<b>COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)</b>															
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX						
<b>SUPPLEMENTAL REPORT EXPECTED (14)</b>						<b>EXPECTED SUBMISSION DATE (15)</b>		MONTH	DAY	YEAR					
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)						<input checked="" type="checkbox"/> NO									

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

On August 29, 2000, while at 100 percent power, Niagara Mohawk Power Corporation identified 16 reactor coolant recirculation system primary containment isolation valves that were not being tested as required by Technical Specifications. Technical Specification 4.6.3.3 requires that the isolation time of each primary containment power operated or automatic valve be within its limit when tested pursuant to Technical Specification 4.0.5. Technical Specification 4.0.5 requires that the 16 valves be tested in accordance with Section XI of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code and applicable addenda (Code). The Code requires that the stroke time of all power-operated valves be measured to the nearest second. Instead of timing each individual valve stroke time, the valves were tested in groups of four. The slowest stroke time from among the four valves comprising a group was assigned to each valve in the group. Subsequently, on October 31, 2000, with the plant in cold shutdown, an extent of condition review concluded that the procedure for testing the position indication of these 16 valves was not in compliance with Code requirements because only the light indication was used.

The cause was a misapplication or misinterpretation of the Code.

Corrective actions include: revising the procedure to stroke time the valves individually; revising the procedure to use an additional means to verify valve position; revising the governing procedures to require a cross-discipline review by the Inservice Testing Program Owner for any changes to an inservice testing step of a surveillance procedure; and verifying that the test methods meet the inservice testing program and Code requirements for power-operated valves.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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)	LER NUMBER (6)				PAGE (3)	
		YEAR		SEQUENTIAL NUMBER		REVISION NUMBER	
Nine Mile Point Unit 2	05000410	00	-	13	-	01	02 OF 05

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

## I. DESCRIPTION OF EVENT

On August 29, 2000, while at 100 percent power, Niagara Mohawk Power Corporation (NMPC) identified 16 reactor coolant recirculation system primary containment isolation valves that were not being tested as required by Technical Specifications. Technical Specification 4.6.3.3 requires that the isolation time of each primary containment power operated or automatic valve be within its limit when tested pursuant to Technical Specification 4.0.5. Technical Specification 4.0.5 requires that the 16 valves be tested in accordance with Section XI of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code and applicable addenda (Code). The Code requires that the stroke time of all power-operated valves be measured to the nearest second. Instead of timing each individual stroke time, the valves were tested in groups of four. The slowest stroke time from among the four valves comprising a group was assigned to each valve in the group.

The 16 valves isolate the hydraulic control lines that supply the two reactor recirculation flow control valves. There are four lines per flow control valve, and each line has an inboard and an outboard isolation valve, yielding a total of 16 valves. There are four switches that control these valves: a switch for the four inboard isolation valves and a switch for the four outboard isolation valves for each reactor recirculation flow control valve. Also, each of the 16 valves has individual position indicating lights. When the valves were being timed, the stopwatch was started when a control switch was turned, and the stopwatch was stopped when the last valve in the group indicated closed. Each valve in the group was assigned the stroke time of the slowest valve in the group. However, the Code requires that the stroke time of each valve be recorded and compared to the acceptance criteria.

In March 1987, the first inservice test was performed which timed the valves in groups and recorded the slowest stroke time for all four valves in each group.

On August 29, 2000, the valves were declared inoperable and Technical Specification 4.0.3 was entered, which permits delaying the actions required in Technical Specification 3.6.3 for up to 24 hours to permit completion of the surveillance. On August 30, 2000, NMPC submitted a written request seeking Nuclear Regulatory Commission approval for the stroke-time testing methodology that had been used. The Nuclear Regulatory Commission provided approval the same day and the valves were declared operable, which allowed Technical Specification 4.0.3 and 3.6.3 to be exited.

Subsequently, on October 31, 2000, with the plant in cold shutdown, as part of the extent of condition review being conducted, the procedure which tests the position indication of these 16 valves was found not to be in compliance with Code requirements because only the light indication was used. The design of these valves does not allow direct observation of either the stem or disc and the position indication was not being verified by any other means, such as visual observation, flow pressure, etc. On November 3, 2000, after a procedure revision, the valves were successfully tested.

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## **II. CAUSE OF EVENT**

The cause was a misapplication or misinterpretation of the Code. The Code and the inservice testing program plan requirements were not correctly implemented in the original surveillance procedure. Contributing to the cause was that no training was provided to procedure writers, reviewers, or approvers.

## **III. ANALYSIS OF EVENT**

This event is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B), "Any operation or condition prohibited by the plant's Technical Specifications." Technical Specification 4.6.3.3 requires that the isolation time of each primary containment power operated or automatic valve be within its limit when tested pursuant to Technical Specification 4.0.5. Technical Specification 4.0.5 requires that the 16 valves be tested in accordance with the Code. The Code requires that the stroke time of all power-operated valves shall be measured to the nearest second. Instead of timing each individual stroke time, the valves were tested in groups of four. The slowest stroke time from among the four valves comprising a group was assigned to each valve in the group. Additionally, the Code requires that valves with remote position indicators shall be observed locally at least once every two years to verify that valve operation is accurately indicated. When local indication is not possible, other indications shall be used for verification of valve operation. Other indications may be observation of flow, pressure, etc. No verification of the position indication lights had been performed.

The stroke-time reference values for the four valve groups are less than 5 seconds, and the limiting stroke-time limit is less than or equal to 20 seconds. Prior to any valve closure time degrading and exceeding the limiting value of 20 seconds, the acceptance criteria of the Code would have been exceeded, and corrective action initiated. No minimum design stroke times are specified for these valves and a failure mechanism does not exist to increase the speed of a spring-loaded valve. Spring relaxation over the life of the component would tend to slow the closing time. Therefore, the testing performed assures continued operational readiness of these valves.

The valve groups are stroke-timed in accordance with the frequency prescribed in the inservice testing program (cold shutdown). Additionally, the valves are verified to close automatically in response to a containment isolation signal in accordance with Technical Specification 4.6.3.2. After the identification of the inadequate testing, the valves were individually timed satisfactorily during a planned outage, which demonstrated that the valves were able to perform their safety function.

An engineering evaluation concluded that the exercising of the two reactor recirculation flow control valves, when combined with the design of the valves, provided verification of the valve position indication lights for 12 of the 16 valves. The four remaining valves are drain valves. The position indicating lights for these valves were verified by observing pressure changes downstream of the valve as the valve was cycled.

NRC FORM 366A  U.S. NUCLEAR REGULATORY COMMISSION  <b>LICENSEE EVENT REPORT (LER)</b> <b>TEXT CONTINUATION</b>		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.			
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NMPC performed a probabilistic risk analysis for this condition and determined that it is non-risk significant.

Based on the information provided above, the failure to perform the Technical Specification surveillance requirement for the 16 reactor coolant recirculation system primary containment isolation valves did not adversely affect the health and safety of the general public or plant personnel.

#### IV. CORRECTIVE ACTIONS

1. NMPC declared the valves inoperable until a testing alternative was approved by the Nuclear Regulatory Commission.
2. NMPC revised the testing procedure to stroke time the valves individually and the valves were satisfactorily tested during a planned outage.
3. NMPC revised the indication testing procedure to perform steps that verify the light indication is correct.
4. NMPC performed an extent of condition review for valves tested in groups, and did not identify any other discrepancies.
5. NMPC will revise the Nuclear Interface Procedures that govern revision of surveillance test procedures to require that any change to an inservice testing step of a surveillance procedure shall require a cross-disciplinary review by the Inservice Testing Program Owner. The addition of a cross-disciplinary review by the Inservice Testing Program Owner was not required in the past. This action will be completed by December 29, 2000.
6. NMPC has completed its review to verify that the test methods meet the inservice testing program and the Code requirements of the following inservice testing implementing procedures:
  - Exercising and Stroke-Time testing for motor operated valves (MOVs), solenoid operated valves (SOVs), and air operated valves (AOVs)
  - Fail-Safe testing for SOVs and AOVs (not applicable for MOVs)
  - Check valve disassembly and inspection
  - Explosive valve tests

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**IV. CORRECTIVE ACTIONS (cont.)**

7. NMPC will review the inservice testing implementation procedures for position indication testing to verify that the test methods meet the inservice testing program and Code requirements by February 10, 2001.
8. NMPC will review all inservice testing implementing procedures for inservice pump and valve testing to verify that the test methods meet the inservice testing program and the Code requirements by July 1, 2001.

**V. ADDITIONAL INFORMATION**

A. Failed components: none

B. Previous similar events:

A review of previous licensee event reports involving inservice testing with a similar cause revealed one similar event; Licensee Event Report 99-08, "Inadequate Surveillance of Reactor Core Isolation Cooling Check Valve." Licensee Event Report 99-08 involved the failure to test the Reactor Core Isolation Cooling Check Valve 2ICS\*V249 due to not properly evaluating the operating parameters to ensure a proper test was developed and implemented. The corrective actions associated with the licensee event report reviewed the testing adequacy of all check valves. Therefore, the corrective actions from this licensee event report would not have identified or prevented the current event.

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

Components	IEEE 803A Function	IEEE 805 System ID
Reactor Coolant Recirculation System	N/A	AD
Primary Containment Isolation Valves	ISV	AD
Hydraulic Control Lines (Piping)	N/A	AD
Flow Control Valves	FCV	AD
Position Indicating Lights	IL	AD
Stopwatch	N/A	N/A
Spring	N/A	AD
Control Switch	33	AD