



September 8, 2000
NMP2L 1985

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

RE: Docket No. 50-410
Licensee Event Report 00-12

Gentlemen:

In accordance with 10 CFR 50.73(a)(2)(i)(B) and 10 CFR 50.73(a)(2)(v), we are submitting Licensee Event Report 00-12, "Violation of Technical Specifications Due to Potential Buildup of Condensation in the Containment Monitoring System Hydrogen-Oxygen Analyzer Sample Return Line."

Very truly yours,

A handwritten signature in black ink, appearing to read "M. Peckham".

Michael F. Peckham
Plant Manager - NMP2

MFP/CES
Attachment

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

IE22

NRC FORM 36, U.S. NUCLEAR REGULATORY COMMISSION				APPROVED OMB NO. 3150-0104 EXPIRES:			
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 2				DOCKET NUMBER (2) 05000410		PAGE (3) 01 OF 04	
TITLE (4) Violation of Technical Specifications Due to Potential Buildup of Condensation in the Containment Monitoring System Hydrogen-Oxygen Analyzer Sample Return Line							
EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY
08	09	00	00	12	00	09	08
						OTHER FACILITIES INVOLVED (8)	
						FACILITY NAMES	
						DOCKET NUMBER(S)	
						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) (11)				
1							
POWER LEVEL (10) 100		☐ 20.2201(b) ☐ 20.2203(a)(1) ☐ 20.2203(a)(2)(i) ☐ 20.2203(a)(2)(ii) ☐ 20.2203(a)(2)(iii) ☐ 20.2203(a)(2)(iv)		☐ 20.2203(a)(2)(v) ☐ 20.2203(a)(3)(i) ☐ 20.2203(a)(3)(ii) ☐ 20.2203(a)(4) ☐ 50.36(c)(1) ☐ 50.36(c)(2)		☒ 50.73(a)(2)(i) ☐ 50.73(a)(2)(ii) ☐ 50.73(a)(2)(iii) ☐ 50.73(a)(2)(iv) ☒ 50.73(a)(2)(v) ☐ 50.73(a)(2)(vii)	
						☐ 50.73(a)(2)(viii) ☐ 50.73(a)(2)(x) ☐ 73.71 ☐ OTHER (Specify in Abstract below and in Text, NRC Form 366A)	
LICENSEE CONTACT FOR THIS LER (12)							
NAME Stephen E. Geier - Manager Engineering, Unit 2						TELEPHONE NUMBER (315) 349-7887	
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)							
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT
SUPPLEMENTAL REPORT EXPECTED (14)						EXPECTED SUBMISSION DATE (15)	
☒ YES (If yes, complete EXPECTED SUBMISSION DATE) ☐ NO						MONTH: 10 DAY: 25 YEAR: 00	

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

On August 7, 2000, Nine Mile Point Unit 2 declared the Containment Monitoring System Division II Hydrogen-Oxygen analyzer inoperable when the readings drifted high. On August 9, 2000, with the plant at 100 percent power, the Division I Hydrogen-Oxygen analyzer was declared inoperable because an engineering evaluation had identified a potential for the buildup of condensation in the sample return line in a post Loss of Coolant Accident (LOCA) environment. This event is reportable per 10 CFR 50.73(a)(2)(i)(B), because the Technical Specifications 3.3.7.5 action statement requirement for one inoperable Hydrogen-Oxygen analyzer had not been met since initial startup. With both Hydrogen-Oxygen analyzers inoperable the plant entered the action statement of Technical Specifications 3.3.7.5 which allows continued operation for seven days. Additionally, the condition with both Hydrogen-Oxygen analyzers inoperable is reportable per 10 CFR 50.73(a)(2)(v).

On August 11, 2000, procedure changes were implemented that would drain the sample return lines post LOCA, eliminating the effect of condensation buildup in the discharge line. The Division I Hydrogen-Oxygen analyzer was declared operable and the plant exited the seven day action statement of Technical Specification 3.3.7.5.

The cause was that the original Containment Monitoring System design did not comply with vendor requirements for the layout of the sample return piping of the Hydrogen-Oxygen analyzers because of the high elevation of the sample return line.

Niagara Mohawk Power Corporation (NMPC) will have the Hydrogen-Oxygen analyzer vendor (Delphi Systems) perform a test to assess the analyzer pump capability, which will aid in assessing operability of the Division I Hydrogen-Oxygen analyzer. By October 25, 2000, NMPC will either submit a supplement to this report or retract this report.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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Nine Mile Point Unit 2	05000410	00	-	12	-	00	02 OF 04

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

I. DESCRIPTION OF EVENT

On August 7, 2000, Nine Mile Point Unit 2 declared the Containment Monitoring System Division II Hydrogen-Oxygen analyzer inoperable when the readings drifted high. On August 9, 2000, with the plant at 100 percent power, the Division I Hydrogen-Oxygen analyzer was declared inoperable because an engineering evaluation had identified a potential for the buildup of condensation in the sample return line in a post Loss of Coolant Accident (LOCA) environment that could affect the operation of both Hydrogen-Oxygen analyzers. With both Hydrogen-Oxygen analyzers inoperable, the plant entered the action statement of Technical Specification 3.3.7.5 which allows continued operation for seven days.

Two fully independent Hydrogen-Oxygen analyzer trains monitor the concentrations of hydrogen and oxygen. Each analyzer can monitor either the drywell or the suppression chamber. The Hydrogen-Oxygen analyzers are model K-IV containment analyzers provided by Comsip (now called Delphi Systems). Both of the Hydrogen-Oxygen analyzer panels are located in the auxiliary bays. A LOCA signal isolates the supply and return lines. Following an accident, the system is manually activated to monitor combustible gas concentrations. After activation, the system monitors the primary containment hydrogen and oxygen concentration by drawing samples from the selected areas. The samples are drawn by an analyzer pump and returned to their areas of origin.

A post LOCA sample is expected to contain saturated steam at temperatures of about 275 degrees Fahrenheit. The sample is cooled inside the analyzer panel to about 150 degrees Fahrenheit. This cooling yields a conservatively calculated condensation rate of 0.14 gallons per hour.

To address the potential for condensation, the Hydrogen-Oxygen analyzer vendor manual recommends that the sample and return lines should ideally be sloped downwards away from the analyzers. If the analyzers cannot be located higher than the sample lines, the vendor manual requires that the return line riser be no more than 30 feet above the analyzers.

The Division II Hydrogen-Oxygen analyzer return line complies with the vendor manual requirement of not more than 30 feet above the analyzer. However, the return line from the Division I analyzer to the drywell is elevated about 45 feet above the analyzer, exceeding the vendor requirement. With the return line to the drywell rising more than 30 feet above the analyzer, the ability of the analyzer pump to return condensation to the drywell was questioned. If the condensation was not returned to the drywell, it could collect in the Division I discharge line and return line to the suppression chamber. The Division I Hydrogen-Oxygen analyzer was considered inoperable because of the potential for water to collect more than 30 feet elevation in the discharge line. On August 11, 2000, procedure changes were implemented directing that, post LOCA, the Hydrogen-Oxygen analyzer sample locations be periodically shifted between the drywell and the

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

I. DESCRIPTION OF EVENT (Cont'd)

suppression chamber. These changes would allow the return line to the suppression chamber to drain and prevent buildup of greater than 30 feet of condensation in the discharge lines. The Division I Hydrogen-Oxygen analyzer was declared operable and the plant exited the seven day action statement of Technical Specification 3.3.7.5.

II. CAUSE OF EVENT

The cause of the event was that the original Containment Monitoring System design did not comply with vendor requirements for the layout of the sample return piping of the Hydrogen-Oxygen analyzers.

III. ANALYSIS OF EVENT

With one inoperable Hydrogen-Oxygen analyzer the action statement of Technical Specification 3.3.7.5 requires that the inoperable analyzer be restored to operable status within 30 days or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the following 14 days outlining the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the Hydrogen-Oxygen analyzer to operable status. With both Hydrogen-Oxygen analyzers inoperable the action statement of Technical Specification 3.3.7.5 requires that the inoperable analyzers be restored to operable status within 7 days or be in at least hot shutdown within the next 12 hours. Considering the Division I Hydrogen-Oxygen analyzer inoperable prior to discovery, this event is reportable per 10 CFR 50.73(a)(2)(i)(B), "Any operation or condition prohibited by the plant's Technical Specifications," because the allowed time in the action statements of Technical Specifications 3.3.7.5 had been exceeded. The event is also reportable per 10 CFR 50.73(a)(2)(v), "Any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to: (D) Mitigate the consequences of an accident," because both Hydrogen-Oxygen analyzers were inoperable.

Based on engineering judgment, Niagara Mohawk Power Corporation (NMPC) believes that it is possible that the analyzer pump would have been able to function properly with its discharge line rising 45 feet above the analyzer pump. To obtain positive confirmation, NMPC will have Delphi Systems test the analyzer pump's ability to function with a discharge line rising greater than 45 feet above the pump. By October 25, 2000, NMPC will submit further analysis in a supplement to this report or retract this report.

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IV. CORRECTIVE ACTIONS

1. Procedure changes were implemented directing that post LOCA, the Hydrogen-Oxygen analyzer sample locations be periodically shifted between the drywell and the suppression chamber. These changes would allow the return line to the suppression chamber to drain and prevent the buildup of greater than 30 feet of condensation in the discharge lines.
2. NMPC will have Delphi Systems test the analyzer pump ability to function with a discharge line rising greater than 45 feet above the pump.
3. By October 25, 2000, based on vendor test results, NMPC will either submit a supplement to this report providing additional corrective actions, as appropriate, or retract this report.

V. ADDITIONAL INFORMATION

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

License Event Report (LER) 00-02, "Manual Reactor Trip Due to an External Steam Leak on the Reactor Feedwater Pump and Automatic Trip of the RCIC [Reactor Core Isolation Cooling] System" discusses a steam leak on a feedwater pump resulting from a failure to comply with vendor torque requirements. Although the causes are similar, failing to comply with vendor recommendations, the circumstances are different. One event involves the design and installation of a system while the other involves reassembly of equipment. The events are also separated in time. The corrective actions associated with LER 00-02 could not have prevented the design deficiency of the Division I Hydrogen-Oxygen analyzer.

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

Components	IEEE 803A Function	IEEE 805 System ID
Containment Monitoring System	N/A	IK
Hydrogen-Oxygen Analyzer	AI	IK
Pump	P	IK
Drywell	N/A	NH
Suppression Chamber	N/A	NH