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NINE MILE POINT  
NUCLEAR STATION

February 11, 2013

U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**ATTENTION:** Document Control Desk

**SUBJECT:** Nine Mile Point Nuclear Station  
Unit No. 1; Docket No. 50-220

Licensee Event Report 2012-006, Technical Specification Required Shutdown Due to  
Containment Leakage

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In accordance with 10 CFR 50.73(a)(2)(i)(A), 10 CFR 50.73(a)(2)(iv)(A) and 10 CFR 50.73(a)(2)(v)(C), please find attached Licensee Event Report 2012-006, Technical Specification Required Shutdown Due to Containment Leakage.

There are no regulatory commitments in this submittal.

Should you have questions regarding the information in this submittal, please contact John J. Dosa, Director Licensing, at (315) 349-5219.

Very truly yours,

MAP/GvN

Attachment: Licensee Event Report 2012-006, Technical Specification Required Shutdown Due to  
Containment Leakage

cc: NRC Regional Administrator  
NRC Project Manager  
NRC Resident Inspector

FE22  
A017  
NCR

**ATTACHMENT**

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**LICENSEE EVENT REPORT 2012-006**

**TECHNICAL SPECIFICATION REQUIRED SHUTDOWN DUE TO  
CONTAINMENT LEAKAGE**

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**Nine Mile Point Nuclear Station, LLC  
February 11, 2013**

**LICENSEE EVENT REPORT (LER)**  
(See reverse for required number of  
digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

**1. FACILITY NAME**

Nine Mile Point Unit 1

**2. DOCKET NUMBER**

05000220

**3. PAGE**

1 OF 6

**4. TITLE**

Technical Specification Required Shutdown Due to Containment Leakage

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
12	13	2012	2012	006	00	2	11	2013	NA	NA
									NA	NA

**9. OPERATING MODE**  
N

**10. POWER LEVEL**  
100

**11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§:** (Check all that apply)

<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)
<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
<input type="checkbox"/> 20.2203(a)(2)(v)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER
<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

**12. LICENSEE CONTACT FOR THIS LER**

NAME

John J. Dosa, Director - Licensing

TELEPHONE NUMBER (Include Area Code)

(315) 349-5219

**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
X	BD	ISV	Limatorque	Y					

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

MONTH	DAY	YEAR
NA	NA	NA

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

On December 13, 2012 at 16:30:10 hours, the primary containment was declared inoperable due to a primary containment leakage rate that was in excess of the Technical Specification (TS) 3.3.3.a limit. TS 3.0.1 requires that in the event Limiting Condition for Operation (LCO) requirements cannot be satisfied because of circumstances in excess of those addressed in the Specification, the unit shall be placed in a condition in which the LCO is not applicable. A normal orderly plant shutdown commenced at 16:45:00 hours and at 19:12:46 hours, a manual reactor scram was initiated from 18 percent power, in order to reduce the reactor coolant temperature to a value less than 215 degrees F within 10 hours of declaring the containment inoperable. At 23:33:00 hours, the reactor coolant temperature was below 215 degrees F.

This event is reportable in accordance with 10 CFR 50.73(a)(2)(i)(A) as a plant shutdown required by Technical Specifications, with 10 CFR 50.73(a)(2)(iv)(A) as an actuation of the high pressure coolant injection system, and with 10 CFR 50.73(a)(2)(v)(C) as a condition that could have prevented the fulfillment of a safety function of a system needed to control the release of radioactive material.

Corrective actions include cleaning the inside surfaces of drywell purge isolation valves IV-201-31 and IV-201-32 and associated piping to remove corrosion and testing the valves to restore containment integrity and containment isolation valve operability.

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

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Nine Mile Point Unit 1	05000220	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 6
		2012	006	00	

**NARRATIVE****I. DESCRIPTION OF EVENT****A. PRE-EVENT PLANT CONDITIONS:**

Prior to the event, Nine Mile Point Unit 1 (NMP1) was operating at 100 percent of rated thermal power with no inoperable systems affecting this event.

**B. EVENT:**

NMP1 started up from the last outage on December 4, 2012. On December 6, 2012 nitrogen was added to the drywell in order to maintain torus pressure above its low pressure setpoint of 1.0 psig. Nitrogen was added again on December 8 and 10, 2012. This adverse trend in nitrogen makeup resulted in generating Condition Report 2012-011157 on December 10, 2012. Operator walkdowns in the Reactor Building did not detect any drywell leakage. Nitrogen was added again to the drywell on December 11, 2012. Based on the continuing adverse trend in nitrogen makeup, on December 12, 2012, extensive walkdowns, valve position verifications, and leak tests on systems connected to the drywell were performed. At the same time, engineering analyses were initiated to quantify the amount of containment leakage based on the nitrogen makeup frequency. The primary containment was still considered operable at this time based on available margin in the previously measured 10 CFR 50 Appendix J leakage rate totals. On December 12, 2012 at 17:56:33, the source of the drywell leakage was suspected to be drywell purge isolation valves IV-201-31(outboard) and IV-201-32 (inboard), as significant leakage was noted between the valves based upon displaced oxygen detected at the downstream vent. As a result, troubleshooting was initiated on these valves including valve lineups to isolate the nitrogen purge system, local leak rate tests (LLRT), pressure drop tests and leak checks through vented connections. Nitrogen was added again to the drywell on December 12, 2012. On December 13, 2012 at 15:08:27 hours, a LLRT was initiated for drywell purge isolation valves IV-201-31 and IV-201-32; however, the test was subsequently aborted when test pressure could not be achieved.

On December 13, 2012 at 16:30:10 hours, after concluding that the source and amount of the primary containment leakage could not be positively determined, the primary containment was declared inoperable due to a primary containment leakage rate that was in excess of the Technical Specification (TS) 3.3.3.a limit. TS 3.0.1 requires that in the event Limiting Condition for Operation (LCO) requirements cannot be satisfied because of circumstances in excess of those addressed in the Specification, the unit shall be placed in a condition in which the LCO is not applicable. A normal orderly plant shutdown was commenced at 16:45:00 hours and at 19:12:46 hours; a manual reactor scram was initiated from 18 percent power, in order to reduce the reactor coolant temperature to a value less than 215 degrees F within 10 hours of declaring the containment inoperable. At 23:33:00 hours, the reactor coolant temperature was below 215 degrees F.

This event involved a TS required shutdown, the manual initiation of the Reactor Protection System which resulted in a reactor scram, and an actuation of the high pressure coolant injection system. The NRC notification per 10 CFR 50.72(b)(2)(i), 10 CFR 50.72(b)(3)(iv)(A), and 10 CFR 50.72(b)(3)(v)(C) was completed on December 13, 2012, at 18:36 (Event Number 48590).

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**NARRATIVE****C. INOPERABLE STRUCTURES, COMPONENTS, OR SYSTEMS THAT CONTRIBUTED TO THE EVENT:**

The degraded sealing surfaces of drywell purge isolation valves IV-201-31 and IV-201-32 contributed to this event. There were no other inoperable structures, systems, or components that contributed to the event.

**D. DATES AND APPROXIMATE TIMES OF MAJOR OCCURRENCES:**

December 10, 2012

21:00:00 Condition Report CR-2012-011157 was initiated after an adverse trend was identified in nitrogen makeup to primary containment.

December 12, 2012

17:56:33 Significant leakage was noted between the drywell purge isolation valves IV-201-31(outboard) and IV-201-32 (inboard) based upon displaced oxygen detected at the downstream vent.

December 13, 2012

15:08:27 LLRT was initiated for drywell purge isolation valves IV-201-31(outboard) and IV-201-32 (inboard). The test was subsequently declared a failure.

16:30:10 The primary containment was declared inoperable due to a primary containment leakage rate that was in excess of the TS 3.3.3.a limit.

16:45:00 A normal orderly plant shutdown was commenced.

19:12:46 A manual reactor scram was initiated from 18 percent power in order to reduce the reactor coolant temperature to a value less than 215 degrees F within 10 hours of declaring the containment inoperable.

19:13:09 The High Pressure Coolant Injection (HPCI) system automatically initiated on low Reactor Pressure Vessel (RPV) water level as expected due to RPV level shrink following the scram.

19:13:12 RPV level was restored above the HPCI system low level actuation setpoint and the HPCI system initiation signal was reset.

23:33:00 The reactor coolant temperature was below 215 degrees F.

**E. OTHER SYSTEMS OR SECONDARY FUNCTIONS AFFECTED:**

Other reactor and secondary systems functioned as expected.

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**NARRATIVE****F. METHOD OF DISCOVERY:**

This event was discovered by the operators when the LLRT on drywell purge isolation valves IV-201-31 (outboard) and IV-201-32 (inboard) was declared a failure.

**G. MAJOR OPERATOR ACTION:**

Operators initiated the manual reactor scram per plant procedure. The HPCI system initiation signal was reset after the RPV level was restored above 53 inches. Pressure control was established on the Turbine Bypass Valves, which is the preferred system.

**H. SAFETY SYSTEM RESPONSES:**

Following initiation of the reactor scram, all control rods fully inserted. The HPCI system automatically initiated on low RPV level as expected due to RPV level shrink following the scram. No other operational conditions requiring the response of safety systems occurred as a result of this event.

**II. CAUSE OF EVENT:**

The cause for this event was excessive leakage through drywell purge isolation valves IV-201-31 and IV-201-32. The general corrosion layer that developed on the purge line carbon steel piping over time became disturbed causing portions of the corrosion to break loose and collect inside the containment vent and purge piping. Containment vent and purge events carried loose corrosion from within the piping through the containment vent and purge isolation valves causing increased leakage due to uneven valve seating. This event was entered into the Nine Mile Point Nuclear Station corrective action program as condition report number CR-2012-011247.

**III. ANALYSIS OF THE EVENT:**

This event is reportable in accordance with 10 CFR 50.73(a)(2)(i)(A) as a plant shutdown required by Technical Specifications, with 10 CFR 50.73(a)(2)(iv)(A) as an actuation of the high pressure coolant injection system, and with 10 CFR 50.73(a)(2)(v)(C) as a condition that could have prevented the fulfillment of a safety function of a system needed to control the release of radioactive material.

There were no actual nuclear safety consequences associated with this event. All control rods fully inserted following the reactor scram. The HPCI system automatically initiated on low RPV level as expected, due to RPV level shrink following the scram. There were no other automatic initiations of safety systems, and immediate actions performed by the operators were adequate and appropriate in placing and maintaining the reactor in a safe shutdown condition. The reactor scram was without complications and was not risk significant.

The closest related transient described in the NMP1 Updated Final Safety Analysis Report (UFSAR) is the Turbine Trip with Partial Bypass (Low Power) event described in UFSAR Section XV-B.3.14. The maximum reactor pressure and peak neutron flux reached during the December 13, 2012 event were both less than the calculated values presented in the UFSAR analysis for a low power turbine trip with partial bypass flow. In addition, this transient event does not challenge the Minimum Critical Power Ratio safety limit and, therefore, is not evaluated on a reload cycle basis.

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**NARRATIVE**

Based on the above discussion, it is concluded that the safety significance of this event is low and the event did not pose a threat to the health and safety of the public or plant personnel.

This event affects two NRC Regulatory Oversight Process (ROP) performance indicators (PIs). The PI for Unplanned Power Changes per 7000 Critical Hours is projected to rise from 0.85 to 1.73, compared to the Green-to-White threshold value of 6. Also, the PI for Safety System Functional Failures rises from 3 to 4, compared to the Green-to-White threshold value of 6. Both PIs will remain green.

**IV. CORRECTIVE ACTIONS:****A. ACTION TAKEN TO RETURN AFFECTED SYSTEMS TO PRE-EVENT NORMAL STATUS:**

1. Disassembled, inspected and cleaned containment vent and purge isolation valves IV-201-09, IV-201-10, IV-201-31 and IV-201-32 and associated piping. All retrievable loose corrosion was removed.
2. Performed local leak rate testing on valves IV-201-07, IV-201-08, IV-201-09, IV-201-10, IV-201-16, IV-201-17, IV-201-31 and IV-201-32.
3. Pressurized containment to approximately 1.5 psig and trended containment pressure to verify there was no significant leakage.

**B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:**

1. During the next refueling outage, remove corrosion from the internal surfaces of the four horizontally-oriented containment vent and purge isolation valves IV-201-09, IV-201-10, IV-201-31 and IV-201-32 and associated piping.
2. During the next refueling outage, coat the internal piping and associated attachments to prevent corrosion for the four horizontally-oriented containment vent and purge isolation valves IV-201-09, IV-201-10, IV-201-31 and IV-201-32.
3. During the next refueling outage, inspect the internal piping and associated attachments of the four vertically-oriented containment vent and purge isolation valves IV-201-07, IV-201-8, IV-201-16 and IV-201-17 and, based on the inspection findings, develop a cleaning/coating strategy (if required).

**V. ADDITIONAL INFORMATION:****A. FAILED COMPONENTS:**

There were no other failed components that contributed to this event.

**B. PREVIOUS LERs ON SIMILAR EVENTS:**

There were no previous LERs on similar events.

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**NARRATIVE**

**C. THE ENERGY INDUSTRY IDENTIFICATION SYSTEM (EII) COMPONENT FUNCTION IDENTIFIER AND SYSTEM NAME OF EACH COMPONENT OR SYSTEM REFERRED TO IN THIS LER:**

<u>COMPONENT</u>	<u>IEEE 803 FUNCTION IDENTIFIER</u>	<u>IEEE 805 SYSTEM IDENTIFICATION</u>
Reactor Protection System	N/A	JC
High Pressure Coolant Injection System	N/A	BJ
Reactor Pressure Vessel	RPV	AD
Containment Isolation Valve	ISV	NA
Nitrogen Injection System	N/A	NA
Turbine Bypass Valve	N/A	JI

**D. SPECIAL COMMENTS:**

None