



Exelon Generation®

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May 7, 2014

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

ATTENTION: Document Control Desk

SUBJECT: Nine Mile Point Nuclear Station, Unit 2
Renewed Facility Operating License No. NPF-69
Docket No. 50-410

Licensee Event Report 2014-004, Actuation of the Alternate Rod Insertion
System and Subsequent Reactor Scram

In accordance with 10 CFR 50.73(a)(2)(iv)(A), please find attached Licensee Event Report 2014-004, Actuation of the Alternate Rod Insertion System and Subsequent Reactor Scram.

There are no regulatory commitments in this submittal.

Should you have questions regarding the information in this submittal, please contact Everett (Chip) Perkins, Director Licensing, at (315) 349-5219.

Sincerely,

JJS/KP

Attachment: Licensee Event Report 2014-004, Actuation of the Alternate Rod Insertion
System and Subsequent Reactor Scram

cc: NRC Project Manager
NRC Resident Inspector
NRC Regional Administrator

JE22
HRR

ATTACHMENT

LICENSEE EVENT REPORT 2014-004

**ACTUATION OF THE ALTERNATE ROD INSERTION SYSTEM
AND SUBSEQUENT REACTOR SCRAM**

**Nine Mile Point Nuclear Station, LLC
May 7, 2014**



LICENSEE EVENT REPORT (LER)

(See Page 2 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 and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@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 2	2. DOCKET NUMBER 05000410	3. PAGE 1 OF 5
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4. TITLE
Actuation of the Alternate Rod Insertion System and Subsequent Reactor Scram

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
3	10	2014	2014	004	00	5	7	2014	N/A	N/A
									FACILITY NAME	DOCKET NUMBER
									N/A	N/A

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)			
1	<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)
10. POWER LEVEL 99.2	<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 type="checkbox"/> 50.73(a)(2)(i)(A)	<input 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

LICENSEE CONTACT Everett Perkins, Director, Licensing	TELEPHONE NUMBER (Include Area Code) (315) 349-5219
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE		
	MONTH N/A	DAY N/A	YEAR N/A

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

On Monday March 10, 2014 at 1628 hours, Nine Mile Point Unit 2 (NMP2) experienced an actuation of the Alternate Rod Insertion (ARI) system which resulted in an automatic reactor scram from 99.2% thermal power. An inadvertent Reactor Water Low-Low Level 2 signal from transmitters 2ISC*LT8A and 2ISC*LT8B initiated the Division I ARI which resulted in a Reactor Recirculation Pump trip and a full reactor scram. The event was caused by instrument perturbation while Maintenance I&C technicians were performing minor maintenance associated with changing labels on instrument drain valves in the vicinity of trip sensitive equipment. Safety related and other important equipment functioned properly during and after the scram. This event is reportable under 10 CFR 50.73(a)(2)(iv)(A). The causal analysis identified that station personnel have not adequately internalized the risk and implemented rigorous process and behavioral barriers to mitigate the vulnerabilities associated with work on or near trip sensitive equipment. Corrective actions taken or planned include:

1) Protect the trip sensitive equipment and 2) Implementing new fleet procedures/processes for work around trip sensitive equipment. A similar event was documented in NMP2 LER 2010-001.



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

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 and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@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.

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NARRATIVE

I. DESCRIPTION OF EVENT

A. PRE-EVENT PLANT CONDITIONS:

Prior to the event, Nine Mile Point Unit 2 (NMP2) was operating at 99.2% power.

B. EVENT:

On Monday, March 10, 2014 at 1628, Nine Mile Point (NMP) Unit 2 experienced an automatic reactor scram from 99.2% thermal power due to instrument perturbation that occurred while Maintenance I&C technicians were performing a maintenance activity of changing labels on Reactor Level Transmitter instrument drain valves.

When the cable on a valve tag was cut, the wire cutter tool twisted and contacted the handle of the drain valve. The contact caused enough agitation in the instrument line that a low level signal was received by the RRCS system which resulted in an actuation of the Alternate Rod Insertion (ARI) system. Division I RRCS ARI initiated on reactor low-low water level. At the same time, Division I RRCS initiated a trip of both reactor recirculation pumps (RRP) on low-low water level. Coincident with the RRCS & ARI initiations, a half scram on the RPS "B" side was received from low-low water level.

Due to the transients from the reactor recirculation pumps tripping, actual reactor water level dropped to the low reactor water level setpoint. At this point both sides of the RPS tripped and a full reactor scram occurred.

The actuation of the ARI and the subsequent scram has been entered in the plant's corrective action program as CR 2014-001963.

Nine Mile Point Unit 1 (NMP1) was unaffected by the conditions at NMP2.

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

There were no inoperable components that contributed to this event.

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D. DATES AND APPROXIMATE TIMES OF MAJOR OCCURRENCES:

The dates, times and major occurrences for this event are as follows:

March 10

- 1600 Technicians authorized to perform maintenance activities
- 1628 Division I RRCS ARI initiated on Reactor Low-Low Water Level
- 1628 Reactor Scram occurred
Entered N2-SOP-101C, Reactor Scram, N2-SOP-29, Sudden Reduction in Core Flow and N2-EOP-RPV, RPV Control-Flowchart
- 1639 Scram is reset
- 1729 Exited N2-EOP-RPV

E. OTHER SYSTEMS OR SECONDARY FUNCTIONS AFFECTED:

No other systems or secondary functions were affected beyond systems discussed in Section I.B.

F. METHOD OF DISCOVERY:

Technicians changing valve tags heard the plant transient subsequent to the agitation of the handle of the drain valve and notified the control room.

G. MAJOR OPERATOR ACTION:

Operators entered plant procedures N2-SOP-101C, N2-SOP-29 and N2-EOP-RPV to address the plant transients.

H. SAFETY SYSTEM RESPONSES:

The instrument perturbation resulted in the actuation of the ARI, RRCS and a full scram.

II. CAUSE OF EVENT:

The event was caused by instrument perturbation while Maintenance I&C technicians were performing minor maintenance associated with changing labels on reactor reference instrument drain valves in the vicinity of trip sensitive equipment.

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III. ANALYSIS OF THE EVENT:

This event which caused valve transmitter perturbation is reportable under 10 CFR 50.72(b)(2)(iv)(B) and 10 CFR 50.73(a)(2)(iv)(A). Paragraph A of 10 CFR 50.73(a)(2)(iv) describes the reportable condition as an event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph 10 CFR 50.73(a)(2)(iv)(B). An inadvertent Reactor Water Low-Low Level 2 signal from transmitters 2ISC*LT8A and 2ISC*LT8B initiated the Division I ARI which resulted in a Reactor Recirculation Pump trip and a subsequent full reactor scram.

The cause of this event as noted by the causal analysis is that station personnel have not adequately internalized the risk and implemented rigorous process and behavioral barriers to mitigate the vulnerabilities associated with work on or near trip sensitive equipment.

An attempt to perform the installation of instrument rack warning labels on March 7, 2014 during a forced outage was put on hold. Subsequently, the work order was revised allowing the work to be performed on March 10 while the plant was on line. The task of replacing a tag on a trip sensitive rack was deemed to be low risk. The Shift Manager and Control Room Supervisor (CRS) knew the work was on trip sensitive equipment and allowed it to proceed as no valve or component manipulation was involved. Though the actual work to be performed was straight forward, the full potential risk went unrecognized.

There were no actual nuclear safety consequences associated with this event. The plant response was within expected design values and the plant equipment functioned properly during and after the scram.

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 does affect the NRC Regulatory Oversight Process Indicators for unplanned scrams. Due to this scram, the unplanned scrams index value will be 2.43 compared to the Green-to-White threshold value of greater than 3.

IV. CORRECTIVE ACTIONS:

A. ACTION TAKEN TO RETURN AFFECTED SYSTEMS TO PRE-EVENT NORMAL STATUS:

Measures taken to return the plant to pre-event status included entering plant procedures N2-SOP-101C, N2-SOP-29, and N2-EOP-RPV. Work in the area of trip sensitive equipment was stopped temporarily pending further assessment of the event. The stoppage has since been lifted. Protected equipment barriers were placed around selected trip sensitive equipment at Unit 1 and Unit 2. The barriers will remain in place.

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B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:

Protect the trip sensitive equipment.

Implement new fleet procedures/processes for work around trip sensitive equipment.

V. ADDITIONAL INFORMATION:

A. FAILED COMPONENTS:

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

B. PREVIOUS LERs ON SIMILAR EVENTS:

LER 2010-001 identified that on January 7, 2010, NMP2 scrambled from full power following receipt of an invalid Low-Low Reactor Pressure Vessel (RPV) level signal (Level 2). The Level 2 signal caused a Division II Redundant Reactivity Control System (RRCS) initiation signal that caused an Alternate Rod Insertion (ARI) scram initiation and trip of the reactor recirculation pumps. The invalid RPV Level 2 signal was caused by maintenance technicians performing fill and vent activities on Residual Heat Removal (RHS) instrumentation as part of a planned maintenance window for Division II RHS. The RHS instrumentation was interconnected to the RPV instrumentation through a common reference leg. This interconnection was not recognized during the work planning process or by the technicians who performed the activity. When the RHS instrument was vented, the activity induced a pressure perturbation that generated an invalid Level 2 signal.

C. THE ENERGY INDUSTRY IDENTIFICATION SYSTEM (EIS) 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 Recirculation System	P	AD
Reactor Protection System	N/A	JC
Level Transmitter	LIT	N/A
Engineered Safety Features Actuation System	N/A	JE

D. SPECIAL COMMENTS:

None