Constellation

10 CFR 50.73

NMP2L2829
December 20, 2022

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

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

Subject: NMP2 Licensee Event Report 2022-002, Revision 1, Reactor Protection System Actuation While Shutdown

In accordance with the reporting requirements contained in 10 CFR 50.73(a)(2)(iv)(A), please find enclosed NMP2 Licensee Event Report (LER) 2022-002, Revision 1, Reactor Protection System Actuation While Shutdown.

There are no regulatory commitments contained in this letter.

Should you have any questions regarding the information in this submittal, please contact Brandon Shultz, Site Regulatory Assurance Manager, at (315) 349-7012.

Respectfully,

Peter M. Orphanos
Site Vice President, Nine Mile Point Nuclear Station

PMO/JRA

Enclosure: NMP2 Licensee Event Report 2022-002, Revision 1, Reactor Protection System Actuation While Shutdown

cc: NRC Regional Administrator, Region I
NRC Resident Inspector
NRC Project Manager

IE22
NRR

Enclosure

NMP2 Licensee Event 2022-002, Revision 1
Reactor Protection System Actuation While Shutdown
Nine Mile Point Nuclear Station, Unit 2

Renewed Facility Operating License No. NPF-69

NRC FORM 366 (08-2020) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

(See Page 3 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2023

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, Library, and Information Collections Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk ail: oira_submission@omb.eop.gov. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

1. Facility Name	2. Docket Number	3. Page
Nine Mile Point Unit 2	05000 410	1 OF 4

4. Title

Reactor Protection System Actuation While Shutdown

5. Event Date			6. LER Number			7. Report Date			8. Other Facilities Involved	
Month	Day	Year	Year	Sequential Number	Revision No.	Month	Day	Year	Facility Name	Docket Number
09	04	2022	2022	- 002 -	01	12	20	2022		05000
									Facility Name	Docket Number
										05000

9. Operating Mode	10. Power Level
3	000

11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: *(Check all that apply)*

10 CFR Part 20	☐ 20.2203(a)(2)(vi)	☐ 50.36(c)(2)	☑ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(A)	**10 CFR Part 73**
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.69(g)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(4)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(i)	**10 CFR Part 21**	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(1)(i)
☐ 20.2203(a)(2)(ii)	☐ 21.2(c)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(i)
☐ 20.2203(a)(2)(iii)	**10 CFR Part 50**	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)	☐ 73.77(a)(2)(ii)
☐ 20.2203(a)(2)(iv)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)	
☐ 20.2203(a)(2)(v)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)	

☐ **OTHER** (Specify here, in abstract, or NRC 366A).

12. Licensee Contact for this LER

Licensee Contact	Phone Number (Include area code)
Brandon Shultz, Site Regulatory Assurance Manager	(315) 349-7012

13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable to IRIS		Cause	System	Component	Manufacturer	Reportable to IRIS

14. Supplemental Report Expected		15. Expected Submission Date	Month	Day	Year
☑ No	☐ Yes (If yes, complete 15. Expected Submission Date)				

16. Abstract (Limit to 1560 spaces, i.e., approximately 15 single-spaced typewritten lines)

On Sunday, September 4, 2022, at approximately 1638 hours with reactor power at 0%, Nine Mile Point Unit 2 (NMP2) experienced a Reactor Protection System (RPS) actuation on Reactor Pressure Vessel (RPV) Low Water Level (Level 3) of 159.3 inches. At the time of the RPS actuation, the reactor was already in a shutdown condition with all rods fully inserted. The Level 3 condition also initiated an isolation signal to Groups 4 and 5 Primary Containment Isolation Valves (PCIVs), which were already closed. Operators took action to restore RPV water level to the normal operating band. This event is reportable per 10CFR 50.73(a)(2)(iv)(A).

The cause of the event was due to a lack of procedural guidance in N2-SOP-101C, Reactor SCRAM, the Control Room staff did not utilize the proper pressure reduction detail section for a planned cooldown. The Turbine Bypass Valve response to a pressure reduction strategy of 1.5 psig/second caused a rapid opening and closure of bypass valves that complicated level control resulting in Level 3 and RPS actuation.

The event described in this LER is documented in the plant's Corrective Action Program (CAP) as IR 04520704.

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Nine Mile Point Unit 2	05000- 410	2022	- 002	- 01

NARRATIVE

THE ENERGY INDUSTRY IDENTIFICATION SYSTEM (EIIS) COMPONENT FUNCTION IDENTIFIER AND SYSTEM NAME OF EACH COMPONENT OR SYSTEM REFERRED TO IN THIS LER ARE ENCLOSED WITHIN [BRACKETS]

I. DESCRIPTION OF EVENT

A. PRE-EVENT PLANT CONDITIONS:

Prior to the event, NMP2 was in Mode 3 (Hot Shutdown), performing a cooldown to support a planned maintenance outage.

B. EVENT:

On Sunday, September 4, 2022, at approximately 1638 hours, NMP2 experienced an actuation of the Reactor Protection System (RPS) [JC] due to Reactor Low Water Level (Level 3) while in Mode 3, Hot Shutdown. At the time of the RPS actuation, all control rods were already fully inserted and Groups 4 and 5 PCIVs were already closed. The Containment Isolation [JM] signal impacted Residual Heat Removal (RHR) [BO], Shutdown Cooling, RHR letdown to radwaste, and RHR sampling valves. Following the RPS actuation, Operators restored reactor water level utilizing level control valve CNM-LV137.

Nine Mile Point Unit 1 (NMP1) was unaffected by the NMP2 RPS actuation.

On September 4, 2022 at approximately 2131 hours, this event was reported to the NRC via Event Notification #56089 pursuant to the requirements of of 10CFR50.72(b)(3)(iv)(A) Specified System Actuation of any of the systems listed in 10CFR50.72(b)(3)(iv)(B).

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

None.

D. DATES AND APPROXIMATE TIMES OF MAJOR OCCURENCES AND OPERATOR ACTIONS:

September 4, 2022:

1506 - NMP2 entered Mode 3 on a planned reactor SCRAM to enter a maintenance outage.

1512 - Operators manually close the Main Steam Line (MSL) drain system due to reactor pressure lowering.

1534 - Operators suspected leak by past Feedwater Level Control Valve, Feedwater Pump 'B' Level Control Valve (2FWS-LV10B) and subsequently manually closed the blocking valve which stabilized reactor water level.

1556 - Reactor water level continued to rise. Operators suspected leak by past High Pressure - Low Feedwater Level Control Valve (2FWS-LV55B), and subsequently manually isolated the valve which stabilized reactor water level.

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NARRATIVE

September 4, 2022 (continued):

1631 - A planned reduction in reactor pressure was performed using Detail 7 of N2-SOP-101C, Reactor SCRAM, which directed a pressure reduction of 1.5 psig/second. Operators had not fully transitioned to N2-OP-101C, Plant Shutdown, due to equipment challenges that affected reactor pressure and level control.

1634 - Operators attempted to maintain stable water level and pressure. During this evolution, reactor water level exceeded Level 8 (202.3") twice. The running Feedwater Pump (2FWS-P1B), tripped on the first Level 8 signal. The trip of the running Feedwater pump also drove the Operators decision to lower pressure to 550 psig using Detail 7.

1636 - Operators recommenced pressure reduction at 0.5 psig/second after lowering level to 165". Bypass valve position reached approximately 1.25 valves open and level rose to 186", with Low Pressure-Low Flow Level Control Valve (2CNM-LV137), closed in AUTO while level was in band.

1638 - Reactor water level continued to lower to 175" while 2CNM-LV137 was responding and turbine bypass valves began to close as pressure reduced to approximately 550 psig. When the bypass valves went full closed, reactor water level lowered to Level 3 (159.3"), resulting in an automatic RPS actuation.

1639 - Reactor water level was returned to 160-200" normal level band by Operators per Emergency Operating Procedures.

E. METHOD OF DISCOVERY:

This event was self-revealing via Main Control Room reactor water level indications and RPS related annunciators.

F. SAFETY SYSTEM RESPONSES:

All safety systems responded per design.

II. CAUSE OF THE EVENT

Due to a lack of procedural guidance in N2-SOP-101C, Reactor SCRAM, the Control Room staff did not utilize the proper pressure reduction detail section for a planned cooldown. The Turbine Bypass Valve response to a pressure reduction strategy of 1.5 psig/second caused a rapid opening and closure of bypass valves that complicated level control resulting in Level 3 and RPS actuation.

The station identified the two following contributing causes. Operations leadership did not follow OP-AA-101-111-1001 Attachment 15, Proficiency Model / Assessment, for knowledge gaps and mixed crew lineup. A lack of operator trust in the Digital Feedwater Level Control System has led to a common practice to leave Feedwater components "as is" if an unexpected response is obtained, which resulted in a key component, 2FWS-LV55B, being deemed non-functional for this event.

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NARRATIVE

III. ANALYSIS OF THE EVENT

The crew executed the pressure control and cool down strategy allowed by N2-SOP-101C, Reactor SCRAM. However, there is no guidance in the pressure control leg that direct/informs the crew to use a specific section of pressure reduction based on the plant conditions. The crew chose to execute Detail 7 - Adjusting Pressure Set and Establishing Manual Depressurization Rate based on simulator performance with a rapid pressure reduction and consensus with the control room staff. The pressure control section of the Special Operating Procedure should incorporate guidance and notes to inform operators of which detail to use based on the plant configuration and parameters at the time of cooldown. This procedure allowed the team to select a cooldown section of their choosing without specific notes for bypass valve operation for the observed plant conditions. The RPS actuation occurred while the reactor was already shutdown and all safety systems responded per design; therefore the event had no impact to health or safety of the public.

IV. CORRECTIVE ACTONS

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

Operators restored reactor level to normal.

B. ACTION TAKEN OR PLANNED TO PREVENT OCCURRENCE:

N2-SOP-101C, Reactor SCRAM has been revised to include details on when to use Detail 3 through 7 and what rates are applicable for plant conditions and complete an Effectiveness Review.

The Station will incorporate and train on this event in Licensed Operator Re-qualification Training as a missed opportunity to be intrusive and to align on the pressure reduction strategy for various Feedwater configurations. Additionally, the Station will implement a Digital Feedwater Taskforce to drive corrective actions on Digital Feedwater deficiencies.

V. ADDITONAL INFORMATION

A. FAILED COMPONENTS:

None

B. PREVIOUS LERs ON SIMILAR EVENTS:

None