Constellation.

10 CFR 50.73

NMP1L3567
December 15, 2023

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

Nine Mile Point Nuclear Station, Unit 1
Renewed Facility Operating License No. DPR-63
Docket No. 50-220

Subject: NMP1 Licensee Event Report 2023-002, Revision 0, Average Power Range Monitors Declared Inoperable Due to Trip of Reactor Recirculation Pump 12

In accordance with the reporting requirements contained in 10 CFR 50.73(a)(2)(iv)(A), please find enclosed NMP1 Licensee Event Report (LER) 2023-002, Revision 0, Average Power Range Monitors Declared Inoperable Due to Trip of Reactor Recirculation Pump 12.

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,

12/14/23

Carl Crawford
Plant Manager, Nine Mile Point Nuclear Station

CC/MLR

IE22
NRR

Enclosure: NMP1 Licensee Event Report 2023-002, Revision 0, Average Power Range Monitors Declared Inoperable Due to Trip of Reactor Recirculation Pump 12

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

Enclosure

NMP1 Licensee Event Report 2023-002, Revision 0
Average Power Range Monitors Declared Inoperable Due to Trip of Reactor Recirculation Pump 12
Renewed Facility Operating License No. DPR-63

NRC FORM 366 (10-01-2023) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 03/31/2024

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 email to Infocollects.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 20503; email: 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.

LICENSEE EVENT REPORT (LER)

(See Page 2 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/)

1. Facility Name		2. Docket Number	3. Page
Nine Mile Point Unit 1	☒ 050 ☐ 052	50-220	1 OF 4

4. Title

Average Power Range Monitors Declared Inoperable Due to Trip of Reactor Recirculation Pump 12

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	☐ 050	Docket Number
10	21	2023	2023	- 002 -	00	12	15	2023	Facility Name	☐ 052	Docket Number

9. Operating Mode	10. Power Level
MODE 1, Power Condition	100%

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)	**10 CFR Part 50**	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)	☐ 73.1200(a)
☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)	☐ 73.1200(b)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)	☐ 73.1200(c)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)	☐ 73.1200(d)
☐ 20.2203(a)(2)(i)	**10 CFR Part 21**	☐ 50.46(a)(3)(ii)	☒ 50.73(a)(2)(v)(A)	**10 CFR Part 73**	☐ 73.1200(e)
☐ 20.2203(a)(2)(ii)	☐ 21.2(c)	☐ 50.69(g)	☐ 50.73(a)(2)(v)(B)	☐ 73.77(a)(1)	☐ 73.1200(f)
☐ 20.2203(a)(2)(iii)		☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ 73.77(a)(2)(i)	☐ 73.1200(g)
☐ 20.2203(a)(2)(iv)		☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(ii)	☐ 73.1200(h)
☐ 20.2203(a)(2)(v)		☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)		

☐ **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
X	AD	TAC	GE	Y						

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

16. Abstract (Limit to 1326 spaces, i.e., approximately 13 single-spaced typewritten lines)

On October 21, 2023, at 2048 EDT, Reactor Recirculation Pump #12 (RRP 12) tripped. Following the RRP trip, the Average Power Range Monitors (APRMs) flow bias trips were inoperable due to reverse flow through the RRP. The APRMS were restored to operable on October 21, 2023, at 2058 EDT, the RRP 12 discharge blocking valve was closed, eliminating the reverse flow condition, and returning the APRMs to operable. This event is reportable under 10 CFR 50.73(a)(2)(v)(A) as any event or condition that could have prevented the fulfillment of a safety function of structures or systems that are needed to shut down the reactor and maintain it in a safe shutdown condition.

The cause of the RRP 12 trip is a failed coupling on the tachometer generator. Corrective actions included restoring the tachometer to functional. The event described in this LER is documented in the plant's corrective action program report 04711520.

1. FACILITY NAME		2. DOCKET NUMBER	3. LER NUMBER		
			YEAR	SEQUENTIAL NUMBER	REV NO.
Nine Mile Point Unit 1	■ 050 ☐ 052	50-220	2023	- 002	- 00

NARRATIVE

THE ENERGY INDUSTRY IDENTIFICATION SYSTEM (EIIS) COMPONENT FUNCTION IDENTIFIED 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, NMP1 was in Mode 1 (Power Operation) at 100% power.

B. EVENT:

On October 21, 2023, at 2048 EDT, with Nine Mile Point Nuclear Station Unit 1 operating at 100% power, Reactor Recirculation Pump (RRP) [AD] 12 tripped due to a loss of coupling in the tachometer generator, and reactor power lowered to 88%. This trip also resulted in a reverse flow condition through RRP 12. This reverse flow condition results in an unconservative total flow input to the Average Power Range Monitor (APRM) [IG] logic resulting in the APRM flow biased trip set point being higher than the allowable Technical Specification value. As a result, Operations declared the APRMs inoperable. At 2058 EDT, operators stopped reverse flow through RRP 12 by closing the discharge blocking valve, and all APRMs were returned to operable. Control room operators subsequently made an 8-hour report (EN-56810) under 10 CFR 50.72(b)(3)(v)(A).

This event is reportable in accordance with 10 CFR 50.73(a)(2)(v)(A).

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

None.

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

The dates, times, major occurrences, and operator actions for this event are as follows.

October 21, 2023:

2048 – RRP 12 trips due to loss of tachometer generator coupling, resulting in a reverse flow condition through the pump. APRMs are inoperable due to the reverse flow condition.

2058 – Operators close the RRP 12 discharge blocking valve, arresting the reverse flow condition. APRMs are operable.

E. METHOD OF DISCOVERY:

This event was self-revealed when reactor recirc pump 12 tripped and control room operators received annunciators for Recirculation Motor Generator Set 12.

F. SAFETY SYSTEM RESPONSES:

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/)

1. FACILITY NAME		2. DOCKET NUMBER	3. LER NUMBER		
			YEAR	SEQUENTIAL NUMBER	REV NO.
Nine Mile Point Unit 1	■ 050 ☐ 052	50-220	2023	- 002	- 00

NARRATIVE

No conditions requiring safety system response occurred as a result of this event.

II. CAUSE OF THE EVENT

The cause of the event was a coupling failure of the RRP 12 tachometer generator.

III. ANALYSIS OF THE EVENT

This event is reportable under 10 CFR 50.72(b)(3)(v)(A) and 10 CFR 50.73(a)(2)(v)(A) as an event or condition that could have prevented fulfillment of a safety function of structures or systems that are needed to shut down the reactor and maintain it in a safe shutdown condition.

Following the recirculation pump trip the analytical limit for the flow-biased scram and rod block safety function is biased high due to reverse flow conditions until operators take manual action to close the associated recirculation pump discharge valve. For this event the indicated reverse flow was biased high such that the flow remained at rated conditions. The APRM flux scram function and rod block function remained capable of performing the scram function since the APRM flow biased scram is not credited to mitigate the consequences of Analyzed Operational Occurrences from rated conditions including the pump trip actual core flow conditions. Therefore, the actual APRM scram remained consistent with the transient analysis scram credited. The discharge valve was closed within 10 minutes and no control rod movement was performed that required the rod block function. The APRM flow biased scram function is credited for thermal hydraulic stability protection. Following the single RRP 12 trip pump trip event the total recirculation flow operating condition remained significantly above the thermal hydraulic stability exclusion boundary such that the potential for an instability is considered very unlikely. It has been concluded that the APRM scram function remained capable of ensuring the safety limit minimum critical power ratio SLMCPR would not be exceeded assuming a highly unlikely stability event. The thermal hydraulic stability protection remained capable of performing its safety function which is to ensure the SLMCPR is not exceeded assuming a stability event.

This event did not have any impact to the health or safety of the public. All safety systems responded per design.

IV. CORRECTIVE ACTIONS

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

The station completed repairs to the RRP 12 tachometer generator.

B. ACTION TAKEN OR PLANNED TO PREVENT OCCURRENCE:

The station is performing a corrective action program evaluation and evaluating improvements to the condition monitoring program.

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

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			YEAR	SEQUENTIAL NUMBER	REV NO.
Nine Mile Point Unit 1	■ 050 ☐ 052	50-220	2023	- 002	- 00

NARRATIVE

V. ADDITIONAL INFORMATION

A. FAILED COMPONENTS:

B. PREVIOUS LERs on SIMILAR EVENTS:

NMP1 LER 2014-001, NMP1 LER 2019-004, NMP1 LER 2021-001