Xcel Energy®

2807 West County Road 75
Monticello, MN 55362

August 27, 2024

L-MT-24-024
10 CFR 50.73

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

Monticello Nuclear Generating Plant
Docket No. 50-263
Renewed Facility Operating License No. DPR-22

Monticello Nuclear Generating Plant Licensee Event Report 2024-002-00

Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (hereafter "NSPM"), hereby submits Licensee Event Report (LER) 50-263/2024-002-00 per 10 CFR 50.73(a)(2)(v)(B) and 10 CFR 50.73(a)(2)(v)(D).

If you have any questions about this submittal, please contact Carrie Seipp, Senior Regulatory Engineer, at 612-330-5576.

Summary of Commitments

This letter makes no new commitments and no revisions to existing commitments.

Greg D Brown
Plant Manager, Monticello Nuclear Generating Plant
Northern States Power Company – Minnesota

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Monticello, USNRC
Resident Inspector, Monticello, USNRC
State of Minnesota

ENCLOSURE

MONTICELLO NUCLEAR GENERATING PLANT
LICENSEE EVENT REPORT 50-263/2024-002-00

3 pages follow

NRC FORM 366 (04-02-2024) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 04/30/2027

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
Monticello Nuclear Generating Plant	■ 050 ☐ 052	263	1 OF 3

4. Title

Low Pressure Coolant Injection Inoperable Due To Motor Valve Failure

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
06	28	24	2024	- 002 -	00	08	27	24	Facility Name	☐ 052	Docket Number

9. Operating Mode	10. Power Level
1	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)
Carrie Seipp, Senior Nuclear Regulatory Engineer	612-330-5576

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
B	BO	ISV	L200	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 June 28, 2024 at 0110 CDT Monticello Nuclear Generating Plant was in Mode 1 at 100 percent power and performing OSP-RHR-0556 “Residual Heat Removal (RHR) Water Fill Verification” Technical Specification Surveillance Procedure. When the RHR Low Pressure Coolant Injection (LPCI) Motor Valve MO-2012 "RHR Division 1 LPCI Injection Outboard Valve" was attempted to be cycled, the Motor Valve opened approximately one inch then stopped. With the Motor Valve incapable of opening, the A LPCI injection path was inoperable for injection as an Emergency Core Cooling system; and due to the plant design of the LPCI Loop Select Logic, this rendered both subsystems of LPCI inoperable.

The cause of the event was that the Motor Valve's motor pinion was not secured to the motor shaft because an incorrect-sized set screw was installed. The shorter motor pinion set screw relaxed, allowing the motor pinion to move axially along the motor shaft until it no longer engaged the worm shaft clutch gear.

On June 29, 2024, the motor pinion was adjusted back into position on the motor shaft. On August 7, 2024, the incorrect motor pinion set screw was replaced with the correct set screw.

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/)

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 04/30/2027

1. FACILITY NAME		2. DOCKET NUMBER	3. LER NUMBER		
			YEAR	SEQUENTIAL NUMBER	REV NO.
Monticello Nuclear Generating Plant	■ 050 ☐ 052	263	2024	- 002	- 0

NARRATIVE

EVENT DESCRIPTION

On June 28, 2024 at 0110 CDT Monticello Nuclear Generating Plant (MNGP) was in Mode 1 at 100 percent power and performing OSP-RHR-0556 “Residual Heat Removal (RHR) Water Fill Verification” Technical Specification Surveillance Procedure. When the RHR Low Pressure Coolant Injection (LPCI) [EIIS CODE: BO] Motor Valve MO-2012 “RHR Division 1 LPCI Injection Outboard Valve” was attempted to be opened via the control room hand switch, the Motor Valve opened approximately one inch then stopped. With the Motor Valve incapable of opening, the A LPCI injection path was inoperable for injection as an Emergency Core Cooling system; and due to the plant design of the LPCI Loop Select Logic, this rendered both subsystems of LPCI inoperable. Specifically, if the B Recirc loop was determined to be broken, the automatic logic would be incapable of opening the path to the A LPCI injection path and neither division would automatically inject.

This event is reportable per 10 CFR 50.73(a)(2)(v)(B) and 10 CFR 50.73(a)(2)(v)(D) for an event or condition that could have prevented the fulfillment of a safety function of structures or systems that are needed to remove residual heat and mitigate the consequences of an accident based on the safety function at the RHR LPCI system level. This issue was evaluated for a Safety System Functional Failure (SSFF) in accordance with NEI 99-02. This event is a Safety System Functional Failure (SSFF) due to meeting reporting criteria per 10 CFR 50.73(a)(2)(v)(B) and 10 CFR 50.73(a)(2)(v)(D).

EVENT ANALYSIS

On June 27, 2024 at 2158 CDT, Technical Specification 3.5.1 “ECCS – Operation” Condition D “Two LPCI subsystems inoperable for reasons other than Condition C or G” was entered for performance of Technical Specification Surveillance Procedure 0255-04-IA-1-2 “RHR Loop B Quarterly Pump and Valve Tests.” Prior to exiting Condition D of Technical Specification 3.5.1, OSP-RHR-0556 was performed. While the Motor Valve was attempted to be opened via the control room hand switch, the Motor Valve opened approximately one inch then stopped, resulting in the inability to exit Condition D of Technical Specification 3.5.1. The plant had no other Structures, Systems, or Components that were inoperable at the start of the event that contributed to the event.

While this was later determined to be incorrect, initial troubleshooting identified that the most likely cause of the Motor Valve failure to stroke was the clutch mechanism was disengaged partially from the motor pinion as a result of foreign material from failure of the tripper spring. The Motor Valve was repaired and satisfactorily retested, then Condition D of Technical Specification 3.5.1 was exited within the required completion time on June 29, 2024 at 1533 CDT.

During performance of the root cause evaluation interviews, it was identified that during the Motor Valve repairs performed on June 29, 2024, the motor pinion was found extended on the motor shaft and prior to reassembly, it was adjusted back into position. The vendor technical manual specified that the motor pinion should have a set screw and lock wire installed, so it should not have been able to move.

Further physical investigation on the Motor Valve and specifically the motor pinion was performed on August 7, 2024. The Motor Valve was successfully stroked open and closed, then the motor pinion was found to be held in place with a set screw and lock wire, with no movement along the motor shaft. The set screw was removed for inspection, and it was determined to be the incorrect set screw. Additionally, indications on the motor shaft revealed that motor pinion had potentially moved axially in the past. A review of past maintenance records did not identify a time where the set screw had been replaced.

An incorrect set screw would have allowed the motor pinion to travel axially along the motor shaft and eventually disengage with the worm shaft clutch gear. When the motor pinion disengaged with the worm shaft clutch gear, the Motor Valve could not be operated via the control room hand switch which starts the motor actuator.

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NARRATIVE

ASSESSMENT OF SAFETY CONSEQUENCES

Actual safety consequences of the event were minimal for both normal operation and design basis event operation based on the operability during this time of all High Pressure Emergency Core Cooling System (ECCS), as well as both loops of the Low Pressure ECCS subsystem of Core Spray. The remaining functions of RHR including Drywell Spray and Suppression Pool Cooling remained operable despite the loss of the LPCI subsystem ability to inject into A LPCI Injection Path. Based on the operability of these additional sources of coolant to the core, the consequences of this event were minimal. There was no impact on the health and safety of the public or plant personal. There were no radiological or industrial impacts associated with this event. The health and safety of the public and site personnel were not impacted during this event.

CAUSE OF THE EVENT

The Motor Valve failed to operate because the motor pinion was not secured to the motor shaft because an incorrect-sized set screw was installed. The shorter motor pinion set screw relaxed, allowing the motor pinion to move axially along the motor shaft until it no longer engaged the worm shaft clutch gear.

CORRECTIVE ACTIONS

On June 29, 2024, the Motor Valve's motor pinion was adjusted back into position on the motor shaft. On August 7, 2024, the incorrect motor pinion set screw on the Motor Valve was replaced with the correct set screw.

PREVIOUS SIMILAR EVENTS

There were no previous similar events in the past three years.