



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2056 WESTINGS AVENUE, SUITE 400
NAPERVILLE, IL 60563-2657

January 30, 2025

Shawn Hafen
Site Vice President
Monticello Nuclear Generating Plant
Northern States Power Company, Minnesota
2807 West County Road 75
Monticello, MN 55362-9637

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT – INTEGRATED INSPECTION
REPORT 05000263/2024004

Dear Shawn Hafen:

On December 31, 2024, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Monticello Nuclear Generating Plant. On January 23, 2025, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

No findings or violations of more than minor significance were identified during this inspection.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

A handwritten signature in cursive script, appearing to read "Dariusz Szwarc".

Signed by Szwarc, Dariusz
on 01/30/25

Dariusz Szwarc, Chief
Reactor Projects Branch 3
Division of Operating Reactor Safety

Docket No. 05000263
License No. DPR-22

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV®

Letter to Shawn Hafen from Dariusz Szwarc dated January 30, 2025.

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT – INTEGRATED INSPECTION
REPORT 05000263/2024004

DISTRIBUTION:

Alejandro Alen Arias
RidsNrrDorlLpl3
RidsNrrPMMonticello
RidsNrrDroIrib Resource
Jack Giessner
Mohammed Shuaibi
Diana Betancourt-Roldan
Harral Logaras
David Curtis
Jared Heck
R3-DORS

ADAMS ACCESSION NUMBER: ML25029A173

<input checked="" type="checkbox"/> SUNSI Review		<input checked="" type="checkbox"/> Non-Sensitive <input type="checkbox"/> Sensitive		<input checked="" type="checkbox"/> Publicly Available <input type="checkbox"/> Non-Publicly Available	
OFFICE	RIII	RIII			
NAME	RElliott:anm	DSzwarc			
DATE	01/29/2025	01/30/2025			

OFFICIAL RECORD COPY

**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Number: 05000263

License Number: DPR-22

Report Number: 05000263/2024004

Enterprise Identifier: I-2024-004-0061

Licensee: Northern States Power Company, Minnesota

Facility: Monticello Nuclear Generating Plant

Location: Monticello, MN

Inspection Dates: October 01, 2024, to December 31, 2024

Inspectors: J. Kutlesa Sr. Emergency Preparedness Inspector
T. McGowan, Emergency Preparedness Inspector
C. Norton, Senior Resident Inspector
K. Pusateri, Resident Inspector

Approved By: Dariusz Szwarc, Chief
Reactor Projects Branch 3
Division of Operating Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at Monticello Nuclear Generating Plant, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

List of Findings and Violations

No findings or violations of more than minor significance were identified.

Additional Tracking Items

None.

PLANT STATUS

The unit began the inspection period at rated thermal power. On October 21, 2024, the licensee reduced power to 95 percent to perform control rod maintenance and returned to 100 percent. On December 10, 2024, the licensee reduced power to 33 percent for condenser water box cleaning and returned the unit to 100 percent on December 12, 2024. The unit remained at or near rated thermal power for the remainder of the inspection period.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed activities described in IMC 2515, Appendix D, "Plant Status," observed risk significant activities, and completed onsite portions of IPs. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

Seasonal Extreme Weather Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of seasonal cold temperatures for the following systems:

Reactor building chiller water system and EPA pumps operational for anticipated low river temperatures on November 29, 2024

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (3 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) Reactor recirculation system on October 8, 2024
- (2) Off-gas system, recombiner and holdup subsystems on October 18, 2024
- (3) Reactor core isolation cooling protected train on October 24, 2024

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated the implementation of the fire protection program by conducting a walkdown and performing a review to verify program compliance, equipment functionality, material condition, and operational readiness of the following fire areas:

- (1) West shutdown cooling area on October 9, 2024
- (2) 125V division 1 battery room on October 10, 2024
- (3) 250V division 1 battery room on October 10, 2024
- (4) East shutdown cooling area on October 11, 2024

71111.06 - Flood Protection Measures

Flooding Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated external flooding mitigation protections for beyond-design-basis flooding

71111.07A - Heat Exchanger/Sink Performance

Annual Review (IP Section 03.01) (1 Sample)

The inspectors evaluated readiness and performance of:

- (1) Division 2 emergency diesel generator (EDG) emergency service water (ESW) heat exchanger

71111.11A - Licensed Operator Requalification Program and Licensed Operator Performance

Requalification Examination Results (IP Section 03.03) (1 Sample)

- (1) The inspectors reviewed and evaluated the licensed operator examination failure rates for the requalification annual operating exam administered from October 21, 2024, to December 09, 2024.

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

- (1) The inspectors observed and evaluated licensed operator performance in the control room during the main steam high flow group 1 instrument test surveillance procedure on November 20, 2024

Licensed Operator Requalification Training/Examinations (IP Section 03.02) (1 Sample)

- (1) The inspectors observed and evaluated simulator exercise guide (SEG) RR-SS-185 for crew 5 on October 31, 2024

71111.12 - Maintenance Effectiveness

Quality Control (IP Section 03.02) (1 Sample)

The inspectors evaluated the effectiveness of maintenance and quality control activities to ensure the following structures, systems, and components (SSCs) remains capable of performing its intended function:

- (1) Added drain line to the residual heat removal service water (RHRSW) system in accordance with work order 700145119 on November 19, 2024

Aging Management (IP Section 03.03) (1 Sample)

The inspectors evaluated the effectiveness of the aging management program for the following SSCs that did not meet their inspection or test acceptance criteria:

- (1) Completed aging management walkdown for reactor recirculation system (outside of drywell) in the presence of the strategic engineer on December 16, 2024

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (2 Samples)

The inspectors evaluated the accuracy and completeness of risk assessments for the following planned and emergent work activities to ensure configuration changes and appropriate work controls were addressed:

- (1) Emergent replacement of EDG ESW 11 on October 16, 2024
- (2) Backseat MO-2034, HPCI steam line isolation inboard valve on October 24, 2024

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (4 Samples)

The inspectors evaluated the licensee's justifications and actions associated with the following operability determinations and functionality assessments:

- (1) 50100090899 CV-1478 (instrument air isolation to the drywell) opening trend time longer than expected
- (2) 50100092314 Safe shutdown cable route (Appendix R) question
- (3) 50100092267 reactor core isolation cooling system condensate pump discharge to rad waste open indication delayed during Inservice testing (IST)
- (4) 50100092992 Intakes issues & entry into A.6 (acts of nature procedure, on low river level)

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Installation and removal of a jumper while performing 0523, RWCU [reactor water cleanup] high flow and high room temperature trip unit instrument test and calibration

71111.24 - Testing and Maintenance of Equipment Important to Risk

The inspectors evaluated the following testing and maintenance activities to verify system operability and/or functionality:

Post-Maintenance Testing (PMT) (IP Section 03.01) (5 Samples)

- (1) Anticipated without SCRAM (ATWS) system B train after replacement of inverter and ground troubleshooting on October 3, 2024
- (2) Replacement of ESW 11 pump (P-111A) due to low flow degradation on October 17, 2024
- (3) Traversing in-core probe (TIP) system 2 after gearbox replacement on October 30, 2024
- (4) Division 2 core spray system after pump discharge relief valve replacement on November 20, 2024
- (5) Rerouting of wiring for the EDG 12 fast start relay for divisional separation on November 27, 2024

Inservice Testing (IST) (IP Section 03.01) (1 Sample)

- (1) Reactor core isolation cooling (RCIC) condensate pump discharge valve to contaminated rad waste (CV-2848) red open light slow to illuminate on November 12, 2024

Containment Isolation Valve (CIV) Testing (IP Section 03.01) (1 Sample)

- (1) Core spray 12 test return to torus (MO-1750) valve manipulation on November 18, 2024

71114.04 - Emergency Action Level and Emergency Plan Changes

Inspection Review (IP Section 02.01-02.03) (1 Sample)

- (1) The inspectors evaluated the following submitted Emergency Action Level and Emergency Plan changes.
- EPLAN-02, Monticello Emergency Plan Annex, Rev 0
 - QF0724, 10CFR 50.54(q) Review Screening Form, 2024-786
 - QF0724, 10CFR 50.54(q) Review Screening Form, FT-2023 780
 - QF0724, 10CFR 50.54(q) Review Screening Form, MT-2023 778
 - QF0724, 10CFR 50.54(q) Review Screening Form, MT-2023 779
 - QF0724, 10CFR 50.54(q) Review Screening Form, MT-2023 781
 - QF0724, 10CFR 50.54(q) Review Screening Form, MT-2024 782
 - QF0724, 10CFR 50.54(q) Review Screening Form, MT-2024 783
 - MONTICELLO NUCLEAR GENERATING PLANT AND PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: STANDARD EMERGENCY PLAN AND CONSOLIDATED EMERGENCY OPERATIONS FACILITY (EPID L-2021-LLA-0210), March 31, 2023

This evaluation does not constitute NRC approval.

71114.06 - Drill Evaluation

Additional Drill and/or Training Evolution (1 Sample)

The inspectors evaluated:

- (1) Licensed operator requalification including emergency classification on October 31, 2024

OTHER ACTIVITIES—BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

MS09: Residual Heat Removal Systems (IP Section 02.08) (1 Sample)

- (1) October 1, 2023, through September 30, 2024

MS10: Cooling Water Support Systems (IP Section 02.09) (1 Sample)

- (1) October 1, 2023, through September 30, 2024

71152A - Annual Follow-up Problem Identification and Resolution

Annual Follow-up of Selected Issues (Section 03.03) (1 Sample)

The inspectors reviewed the licensee’s implementation of its corrective action program related to the following issues:

- (1) Environmental qualification issues associated with the required activation energy of Automatic Switch Co. (ASCO) solenoid valves

71152S - Semiannual Trend Problem Identification and Resolution

Semiannual Trend Review (Section 03.02) (1 Sample)

- (1) The inspectors reviewed the licensee’s corrective action program to identify potential trends in motor operated valves (MOVs) failure to operate in manual that might be indicative of degradation in the MOVs’ ability to perform safety-related functions.

INSPECTION RESULTS

Observation: Licensee Corrective Actions Associated with Environmental Qualification—ASCO Activation Energy Issue	71152A
On July 12, 2024, the licensee identified that a 2004 communication revised the activation energy of ASCO solenoid valves from 1.37eV to 1.0eV. This had no environmental qualification (EQ) effect on a majority of EQ solenoid valves because other, more limiting characteristics, were used in determining solenoid valve replacement frequency. However, two solenoid valves associated with the reactor building to suppression chamber vacuum breakers were determined to be overdue for replacement because of the change. The licensee performed prompt and past operability determinations and found the affected solenoid valves were and had been operable. They replaced and lowered the replacement intervals for the affected solenoid valves and updated the appropriate EQ files. Corrective actions were completed by August 26, 2024.	

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On January 23, 2025, the inspectors presented the integrated inspection results to S. Hafen, Site Vice President, and other members of the licensee staff.
- On December 20, 2024, the inspectors presented the emergency action level and emergency plan changes inspection results to G. Medina, Emergency Preparedness Manager, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Corrective Action Documents	501000091798	L-53-13 Outlets in SHC House Do Not Work	10/31/2024
	Procedures	1151	Winter Checklist	104
		FP-WM-SR-01	Seasonal Readiness Program	9
71111.04	Drawings	NH-35243-1 (M-117)	P&ID Recirc Loops Pumps and Motors Nuclear Boiler System	85
		NH-36242-1 (M-116-1)	P&ID Jet Pump Instrumentation Nuclear Boiler System	81
		NH-36243 (M-117)	P&ID Recirculation Loops Nuclear Boiler System	87
		NH-36251 (M-125)	P&ID RCIC (Steam Side)	81
		NH-36252 (M-126)	P&ID RCIC (Water Side)	83
		NH-54817-4	P&ID Off-Gas Modification Train 'A' Engineering Flow Diagram Recombiner Building	83
		NH-54818-1	P&ID Off-Gas Modification Train 'B' Engineering Flow Diagram Recombiner Building	80
		NH-54822-2	P&ID Off-Gas Modification Engineering Flow Diagram Off-Gas Storage Area	77
		Procedures	B.01.04-05	Reactor Recirculation System
	B.02.03-05		Reactor Core Isolation Cooling	40
	B.07.02.01-05		Recombiner System	32
	B.07.02.02-05		Off-Gas Holdup System	34
	71111.05	Fire Plans	Strategy A.3-02-G	Fire Zone 2-G East Shutdown Cooling Area
Strategy A.3-02-H			Fire Zone 2-H West Shutdown Cooling Area	10
Strategy A.3-07-A			Fire Zone 7-A 125V Division I Battery Room	8
Strategy A.3-07-B			Fire Zone 7-B 250V Division I Battery Room	11
71111.06	Corrective Action Documents	501000086301	Annual Exterior Flood Surveillance Discrepancies	06/04/2024
		501000088635	Flood Protection Feature Found Unsealed	08/07/2024
	Procedures	1478	External Flood Monthly and Annual Surveillance	06/04/2024

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		1478	External Flood Monthly and Annual Surveillance	10/01/2024
		1478-01	External Flood Five-Year Surveillance	09/17/2024
71111.07A	Procedures	1404-01	EDG ESW Heat Exchanger Performance Test	23
71111.11Q	Miscellaneous	SEG RR-SS-185	Simulator Exercise Guide (Crew 5)	2
	Procedures	0051	Main Steam Line High Flow Group 1 Instrument Test	38
71111.12	Corrective Action Documents	501000052447	11 Recirc Pump Speed Indicator is Reading Lower Than Historical Values	05/22/2021
		501000052595	12 Recirc MG Set Tachometer Coupling is Shifting Axially by About 1/2 Inch	05/26/2021
		501000052651	Trend - Recirc MG Set Equip Issues	05/28/2021
		501000088944	ECR to correct RHRSW-13 Not Progressing	08/16/2024
		501000093375	REC MG Set Oil Leaks	12/16/2024
		501000093391	V-F-4 Gaps Between Filter and Support	12/16/2024
	Drawings	NH-36664 (M-112)	PI&D RHR Service Water and Emergency Service Water Systems	98
	Procedures	1429	CRV-EFT Low Flow Test	21
		FP-E-SE-05	Strategic Engineering Walkdowns	9
	Work Orders	700131855-0010	Rx Recirculation System (Perform Aging Management Walkdown)	12/16/2024
		700140005-010	Replace FIC-9116A Manual/Auto Controller	10/08/2024
		700145119-0010	RHRSW-13, Install Drain Line	11/19/2024
71111.13	Corrective Action Documents	501000091102	P-111A 11 ESW Degraded Flow	10/13/2024
		501000091457	Spike in Unidentified Drywell Leakage	10/22/2024
		501000091512	Change in DW Leak Rate at ACMP Limit	10/22/2024
		501000091551	MO-2023 Packing Lessons Deep-Dive	10/24/2024
	Work Orders	700140123-0010	HPCI Steam Line Isolation Inboard Valve (MO-2034, Backseat)	10/24/2024
		70014533-0020	P-111A, Replace Pump	10/16/2024
71111.15	Corrective Action Documents	501000090899	CV-1478 Trend Time Longer Than Expected	10/09/2024
		501000092267	CV - 2848 Red Light Indication Delayed	11/13/2024
		501000092314	Safe Shutdown Cable Route Question	11/13/2024
		501000092922	Intakes Issues & Entry into A.6	12/02/2024
	Drawings	NE-36403-3A	12 Standby Diesel Generator Start Circuits	78

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		NF-46111	Connection Diagram 4160V Switchgear A7, A8, A511, A610 & C565	84
		NH 36049-12	P&ID Instrument Air Reactor Building & Drywell	81
		NX-9216-5	Physical Schematic & Field Connections Model 999 EDG 12	80
	Procedures	0255-08-IA-1	RCIC Quarterly Pump and Valve Tests	94
		0255-17-IA-1	Instrument Air Valve Exercise	44
71111.18	Corrective Action Documents	501000091630	RWCU [Reactor Water Cleanup] Trip During 0523 Procedure	10/25/2024
	Procedures	0523	RWCU High Flow and Room Temperature Trip Unit Instrument Test and Calibration	16
71111.24	Corrective Action Documents	501000060614	Housing gasket leak TIP 1 Drive Gear Box	02/17/2022
		501000091749	TIP 2 Slow Drive Speed is too Fast	10/30/2024
		501000092267	CV-2848 Red Light Indication Delayed	11/13/2024
		501000092314	Safe Shutdown Cable Route Question	11/13/2024
	Miscellaneous	3789	Relief Valve Test Data Sheet	6
		IST-Basis	Pump and Valve In-Service Testing Program Basis -CV-2848	11
	Procedures	0255-08-IA-1	RCIC Quarterly Pump and Valve Tests	94
		0278-B	ATWS-Recirc Trip for Reactor Pressure and Level Trip	37
		4777	ATWS Panel Shutdown	4
		B.03.01-05	Core Spray Cooling System	49
		B.05.03-05	Automated Traversing In-Core Probe	16
	Work Orders	700066794-0020	12 Core Spray Test Line Return to Torus	11/18/2024
		700091442	12 Core Spray Pump Discharge Relief Valve	11/19/2024
		700103547-0070	TIP 2 Detector/Drive Cable (PMT/RTS)	10/30/2024
		700143373-0025	ATWS RCP Trip Reactor Level	10/03/2024
		700145331-040	11 ESW Pump PMT/RTS	10/17/2024
700147144-0010		G-3B, Reroute Cable ECR 601X5374 (12 EDG)	0	
71114.04	Calculations	QF0724	10CFR 50.54(q) Review Screening Form	MT-2023 779
		QF0724	10CFR 50.54(q) Review Screening Form	MT-2023 782
		QF0724	10CFR 50.54(q) Review Screening Form	MT-2023

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
				783
		QF0724	10CFR 50.54(q) Review Screening Form	2024-786
		QF0724	10CFR 50.54(q) Review Screening Form	FT-2023 780
		QF0724	10CFR 50.54(q) Review Screening Form1	MT-2023 778
	QF0724	10CFR 50.54(q) Review Screening Form	MT-2023 781	
	Miscellaneous	ML22357A100	MONTICELLO NUCLEAR GENERATING PLANT AND PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: STANDARD EMERGENCY PLAN AND CONSOLIDATED EMERGENCY OPERATIONS FACILITY (EPID L-2021-LLA-0210)	03/31/2023
	Procedures	EPLAN-02	Monticello Emergency Plan Annex	Rev 0
71114.06	Miscellaneous	SEG# RQ-SS-184	Simulator Exercise Guide (Crew 5) - EAL Classification	2
71151	Miscellaneous	QF0445	NRC and MOR Data Collection and Submittal Forms	18
	Procedures	FP-R-PI-01	Preparation of NRC Performance Indicators	10
71152A	Corrective Action Documents	501000087690	EQ-ASCO Activation Energy Issue	07/12/2024
		501000087690	EQ-ASCO Activation Energy Issue-Closure	09/16/2024
	Engineering Evaluations	501000087690	Past operability Review	08/22/2024
		501000087690	Prompt Operability Determination	07/17/2024
71152S	Corrective Action Documents	501000087225	MO-2012 Failed to Cycle as Expected	06/28/2024
		501000087255	MO-2012 Failed to Cycle as Expected Root Cause	10/11/2024
		501000087269	LPCI Vulnerability	06/29/2024
		501000087273	Broken Spring Found in Actuator	06/29/2024
		501000087285	MO-2012 As-Left Diagnostic Anomalies	06/29/2024
		501000087286	Post Job Critique MO-2012 Event Response	06/29/2024
		501000087791	LPCI Valve Extent of Condition	07/16/2024
		501000088600	MO-2012 Motor Pinion May Not be Secured	08/05/2024
		501000088639	MO-2012 LST Discrepancy	08/07/2024
		501000088681	MO-2012 Set Screw	08/08/2024
		501000088690	WO 700141731 MO-2012 Issue	08/07/2024
501000089575	Unclear LST Requirement for MO-2012	09/04/2024		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		501000090123	RCE Revision Not Tracked in CAP	09/22/2024
		700089930-0080	PMT RHR MO-2012	06/29/2024
	Corrective Action Documents Resulting from Inspection	501000076674	FLEX Applicability Question on MO-2012	07/01/2024
	Miscellaneous	LER-2024-002-00	Low Pressure Coolant Injection Inoperable Due to Motor Valve Failure	06/28/2024