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

June 17, 2025

Werner K. Paulhardt Jr.
Site Vice President
Prairie Island Nuclear Generating Plant
Northern States Power Company, Minnesota
Northern States Power Company
1717 Wakonade Drive East
Welch, MN 55089-9642

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT – AGE-RELATED DEGRADATION INSPECTION REPORT 05000282/2025011 AND 05000306/2025011

Dear Werner K. Paulhardt Jr.:

On May 16, 2025, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Prairie Island Nuclear Generating Plant and discussed the results of this inspection with Bryan Currier and other members of your staff. The results of this inspection are documented in the enclosed report.

Seven findings of very low safety significance (Green) are documented in this report. Seven of these findings involved violations of NRC requirements. We are treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or the significance or severity of the violations documented in this inspection report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region III; the Director, Office of Enforcement; and the NRC Resident Inspector at Prairie Island Nuclear Generating Plant.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region III; and the NRC Resident Inspector at Prairie Island Nuclear Generating Plant.

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,

Signed by Edwards, Geoffrey
on 06/17/25

Geoffrey N. Edwards, Acting Branch Chief
Engineering Branch 1
Division of Operating Reactor Safety

Docket Nos. 05000282 and 05000306
License Nos. DPR-42 and DPR-60

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV

Letter to Werner K. Paulhardt Jr. from Geoffrey N. Edwards dated June 17, 2025.

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT – AGE-RELATED DEGRADATION INSPECTION REPORT 05000282/2025011 AND 05000306/2025011

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers:	05000282 and 05000306
License Numbers:	DPR-42 and DPR-60
Report Numbers:	05000282/2025011 and 05000306/2025011
Enterprise Identifier:	I-2025-011-0018
Licensee:	Northern States Power Company
Facility:	Prairie Island Nuclear Generating Plant
Location:	Welch, MN
Inspection Dates:	March 24, 2025 to May 16, 2025
Inspectors:	K. Barclay, Senior Reactor Inspector M. Gangewere, Reactor Inspector M. Siddiqui, Reactor Inspector
Approved By:	Geoffrey N. Edwards, Acting Branch Chief Engineering Branch 1 Division of Operating Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an AGE-RELATED DEGRADATION INSPECTION at Prairie Island 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

Failure to Follow Preventive Maintenance Procedure for Replacement of Emergency Diesel Generator Duplex Lubrication Oil Filters			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000282,05000306/2025011-01 Open/Closed	[H.2] - Field Presence	71111.21N.04
The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation (NCV) of Technical Specification 5.4.1.a, "Procedures," for the failure to implement the preventive maintenance (PM) schedule to replace the emergency diesel generator (EDG) duplex lubrication oil (LO) filters every 2 years. Specifically, the licensee failed to implement the PM schedule or obtain the required PM deferrals for the EDG LO filters.			

Failure to Include Acceptance Criteria for the Lubrication Oil Sample and Analysis Program			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000282,05000306/2025011-02 Open/Closed	[H.13] - Consistent Process	71111.21N.04
The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation (NCV) of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to have appropriate acceptance criteria for determining that important activities have been satisfactorily accomplished. Specifically, implementing procedures H32.2, "Lubrication Sampling and Analysis Program," Revision 12, and H65.2.24, "Lubricating Oil Analysis Aging Management Program," Revision 5, failed to include acceptance criteria for safety-related equipment, including the D5 Emergency Diesel Generator (EDG), lubrication oil (LO) analysis results.			

Failure to Correct a Condition Adverse to Quality on the Safety-Related Cooling Water Dump Valve, MV-32038			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000282,05000306/2025011-03 Open/Closed	[H.5] - Work Management	71111.21N.04
The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation (NCV) of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50,			

Appendix B, Criterion XVI, “Corrective Action,” for the licensee’s failure to correct a condition adverse to quality. Specifically, the licensee failed to correct output torque degradation, a condition adverse to quality, on the safety-related, emergency cooling water (CL) dump valve, MV-32038, identified under 2018 diagnostic testing work order (WO) 700013580 and corrective action document 501000020694.

Failure to Implement the Preventive Maintenance Procedure for Valve Controller Maintenance			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000282,05000306/2025011-04 Open/Closed	None (NPP)	71111.21N.04
The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation (NCV) of technical specification (TS) 5.4.1.a, “Procedures,” for the failure to implement Procedure PE MCC-G7, “MMC Electrical Preventive Maintenance for GE 7700 Line MCCS,” Revision 19, which was a procedure performing maintenance that could affect the performance of safety-related equipment. Specifically, the licensee failed to implement procedure Step 7.2.11.D.3 when they applied excessive grease to an auxiliary contact assembly within the the Unit 1 train A pressurizer power operated relief valve (PORV) isolation valve motor controller.			

Failure to Manage the Effects of Insulation Degradation on Inaccessible Low and Medium Voltage Cables			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000282,05000306/2025011-05 Open/Closed	None (NPP)	71111.21N.04
The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation (NCV) of the Unit 1 and Unit 2 License Renewal Condition 2.C.(8)(b) for the failure to implement Updated Final Safety Analysis Report (UFSAR) Appendix L, Section L.2.21, “Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program,” prior to the period of extended operation. Specifically, the licensee failed to implement a proven test for detection of the deterioration of insulation due to wetting, such as power factor, partial discharge, or other state-of-the-art test, while testing inaccessible low and medium voltage power cables (operating at greater than or equal to 400V) within the scope of license renewal.			

Steps Incorrectly Marked Not Applicable While Implementing Preventive Maintenance on Safety-Related Valve Controller			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000282,05000306/2025011-06 Open/Closed	[H.2] - Field Presence	71111.21N.04
The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation (NCV) of technical specification (TS) 5.4.1.a, “Procedures,” for the failure to implement preventive maintenance (PM) Procedure PE MCC-G7, “MMC Electrical Preventive Maintenance for GE 7700 Line MCCS,” for the Unit 1 train A pressurizer power operated relief valve (PORV) isolation valve’s motor controller breaker, a safety-related component.			

Specifically, the licensee failed to perform multiple procedure steps for inspections and PM tasks on safety-related components including the molded case circuit breaker, unit stabs, starter, contacts, auxiliary contact assembly and fuses.

Failure to Verify the Adequacy of Design of the Containment Fan Coil Unit Isolation Valves			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000282,05000306/2025011-07 Open/Closed	None (NPP)	71111.21N.04
The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation (NCV) of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix B, “Design Control,” for the licensee’s failure to verify the adequacy of design of 16 containment fan coil unit (FCU) cooling water (CL) supply and isolation motor operated valves (MOVs). Specifically, the licensee failed to verify the MOVs’ design closure function to provide isolation capability of a CL leak into containment and prevent the dilution of containment sump boron concentrations. The licensee failed to verify the adequacy of design for the following valves: MV-32132, MV-32135, MV-32138, MV-32141, MV-32147, MV-32150, MV-32153, MV-32156, MV-32377, MV-32378, MV-32379, MV-32380, MV-32386, MV-32387, MV-32388, and MV-32389 (hereafter referred to as FCU CL supply and return isolation valves).			

Additional Tracking Items

None.

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 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

71111.21N.04 - Age-Related Degradation

Age-Related Degradation (9 Samples)

The inspectors selected a sample of components and structures to verify that engineering performance and maintenance activities addressed age-related degradation and that problems were appropriately identified, addressed, and corrected.

Samples were selected considering risk insights and the potential for degradation. Specifically, the inspectors selected samples that were risk-significant and either had indications of age-related degradation or were exposed to environments that could cause age-related degradation. The inspectors considered site-specific and industry-wide operating experience to identify samples and included both active and passive sub-components within each component or structure. Additionally, the inspectors selected samples from each of the applicable cornerstones including Initiating Events, Mitigating Systems, and Barrier Integrity.

For each selected sample listed below, the inspectors reviewed the licensee's maintenance and engineering activities credited to address age-related degradation and assessed whether activities were being completed using applicable standards and procedures, at an appropriate interval, and evaluated against appropriate acceptance criteria. The inspectors also assessed whether issues identified during licensee activities were entered and addressed by the applicable station processes including the corrective action program, and whether periodic evaluations of maintenance effectiveness, feedback, process adjustments, and operating experience were being performed.

(1) Unit 1 and 2 A Pressurizer Power Operated Relief Valve (PORV) Motor Controllers and Breakers for: MV-32195 and MV-32197
(2) Unit 1 and 2 Containment Fan Coil Unit (13/23) Cooling Water Isolation MOVs: MV-32378 and MV-32388
(3) Unit 1 and 2 Cooling Water Dump Valve and Actuator: MV-32038
(4) Unit 1 and 2 Diesel-Driven Cooling Water Pump (12/22) Engine Jacket Water pressure boundaries
(5) Unit 1 and 2 Circulating Water Pump Trip Flooding Level Switches: 18110 and 18113
(6) Unit 1 and 2 Cable 1AB1-20, MCC 1AB1 to MV-32031 (cable insulation) (non-safeguards isolation valve)

(7) Unit 2 D5 EDG Lubrication Oil subsystem including: heat exchangers, thermostatic relief valves, duplex filters and engine driven pumps
(8) Unit 1 Component Cooling Water Heat Exchanger (12)
(9) Unit 1 and 2 Cooling Water supply piping to 11 and 21 Auxiliary Feedwater Pump suction

INSPECTION RESULTS

<table>
<tr><td colspan="4">Failure to Follow Preventive Maintenance Procedure for Replacement of Emergency Diesel Generator Duplex Lubrication Oil Filters</td></tr>
<tr><td>Cornerstone</td><td>Significance</td><td>Cross-Cutting Aspect</td><td>Report Section</td></tr>
<tr><td>Mitigating Systems</td><td>Green
NCV 05000282,05000306/2025011-01
Open/Closed</td><td>[H.2] - Field Presence</td><td>71111.21N.04</td></tr>
<tr><td colspan="4">The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation (NCV) of Technical Specification 5.4.1.a, “Procedures,” for the failure to implement the preventive maintenance (PM) schedule to replace the emergency diesel generator (EDG) duplex lubrication oil (LO) filters every 2 years. Specifically, the licensee failed to implement the PM schedule or obtain the required PM deferrals for the EDG LO filters.</td></tr>
<tr><td colspan="4">Description:

Prairie Island Unit 2 had two EDGs, D5 and D6, which performed a mitigating safety function during design-basis events. Each EDG consisted of two tandem-drive units manufactured by Societe Alsacienne de Constructions Macaniques de Mulhouse (SACM). Each tandem engine (two per EDG) had a LO subsystem which provided lubrication to the engine’s moving parts during operation. Each LO subsystem was equipped with a duplex LO filter which included two 100 percent capacity LO filter cartridges (eight total per EDG). This arrangement allowed one cartridge to be aligned in service and one cartridge to be on standby.

The inspectors reviewed the PM activities for replacement of the D5 EDG duplex LO filters. PM procedure GMP SAC-003, “D5/D6 Diesel Generator Minor Inspection – Mechanical,” Revision 28, outlined the mechanical PM requirements for D5/D6 Diesel Generators and was performed every 2 years. The inspectors noted, Step 1.3 identified the license renewal program credited the periodic replacement of the duplex LO filters in the D5/D6 Diesel Generators. Specifically, LR-SSR-114, “Scoping and Screening Report for Diesel Generators and Support Systems,” Revision 2, credited the periodic replacement of the duplex LO filters which eliminated these components from the aging management review.

PM Procedure GMP SAC-003, Step 7.3.7, stated, “Replace in service main oil filter cartridges.” This step was designed to switch the duplex LO filter to the unused, standby cartridge and replace the previously in service used cartridge every 2 years. Step 7.3.7.F performed the replacement of the in service main oil filter cartridges.

The inspectors reviewed the last three completed work orders (WO) which implemented PM procedure GMP SAC-003 and identified several cartridge replacements marked as not applicable (NA) under Step 7.3.7.F. However, the PM to replace each cartridge had been credited as completed. On March 27, 2025, the inspectors noted the following and informed the site the same day:</td></tr>
</table>

1. March 2021: WO 500051609, Step 7.3.7.F, marked the 1A East, 1B West, 2A East, and 2B West cartridges as NA.
2. February 2023: WO 700071251, Step 7.3.7.F, marked the 1A, 1B, 2A, 2B East, and West cartridges as NA.
3. March 2025: WO 700103871, Step 7.3.7.F, marked the 2A West and 2B East cartridges as NA.

The inspectors performed a walkdown of the D5 EDG and noted the two cartridges that were not replaced in March 2025, 2A West and 2B East, were aligned to be in service. The inspectors noted these in service cartridges had not been replaced since March 2021 due to parts availability and with no technical justification to support the continued operation past the 2-year PM. The inspectors reviewed the site's procedure, FP-PE-PM-01, "Preventive Maintenance Program," Revision 28, and noted Section 5.6 outlined the process of PM deferrals and, in part, stated, "when a PM cannot be completed by the late date of the technically justified frequency, a PM deferral/adjustment will be initiated and documented." In the case of the duplex LO filters, the due date was 2 years, and the late date was 2.5 years. However, no deferral was completed to extend the duplex LO filter PM.

Additionally, the inspectors reviewed Maintenance Plan 10012172 which established the 2-year basis for implementing PM procedure GMP SAC-003. The maintenance plan established the 2-year PM frequency based on the vendor's experience, industry experience, and the site's experience. The maintenance plan noted revisions to the PM procedure could be made through the procedure change request process. However, the inspectors noted no PM changes were made to adjust the duplex LO filter replacement frequency from the established 2 years.

Corrective Actions: The licensee realigned the duplex LO filters to the clean standby cartridges and initiated a maintenance notification to replace the used cartridges, 2A West and 2B East, at the next available opportunity. The licensee planned to perform a condition evaluation to review the impact of this on the aging management of the D5 duplex LO filters and assigned a corrective action to mechanical maintenance to address procedure use and adherence.

Corrective Action References: 501000096525, "ARD 2025 D5 GMP SAC-003 WO 700071251," 501000096567, "ARD 2025 D5 GMP SAC-003 WO 700103871," and 501000096697, "ARD 2025 in service engine 2 oil filter."

Performance Assessment:

Performance Deficiency: The failure to replace the D5 EDG duplex LO filters in accordance with the PM procedure was contrary to Technical Specification 5.4.1 and was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to implement PM activities reduced the reliability and capability of the D5 EDG. Additionally, the failure to obtain PM deferrals or track delinquent PMs prevented the licensee from assessing equipment performance, aging management and license renewal impacts due to the missed EDG duplex LO filter

replacements. As a result, the licensee took action to align the duplex LO filters to the clean standby cartridges during the inspection.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix A, “The Significance Determination Process (SDP) for Findings At-Power.” The inspectors determined this finding was of very low safety significance (Green) because although the finding was a deficiency affecting the design or qualification of a mitigating SSC, the SSC maintained its operability and PRA functionality.

Cross-Cutting Aspect: H.2 - Field Presence: Leaders are commonly seen in the work areas of the plant observing, coaching, and reinforcing standards and expectations. Deviations from standards and expectations are corrected promptly. Senior managers ensure supervisory and management oversight of work activities, including contractors and supplemental personnel. Specifically, leaders did not correct deviations from standards and enforce expectations for procedure use and adherence for performing required PM activities.

Enforcement:

Violation: Technical Specification Section 5.4.1 requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978.

NRC Regulatory Guide 1.33, Revision 2, Appendix A, Section 9, addresses “Procedures for Performing Maintenance,” and Section 9.b states, “Preventive maintenance schedules should be developed to specify lubrication schedules, inspections of equipment, replacement of such items as filters and strainers, and inspection or replacement of parts that have a specific lifetime such as wear rings.”

The licensee established a 2-year frequency for procedure GMP SAC-003, “D5/D6 Diesel Generator Minor Inspection – Mechanical,” Revision 28, which addressed the mechanical preventive maintenance requirements for the D5/D6 Diesel Generator minor inspection and credited the periodic replacement of duplex LO filters in the D5 and D6 diesel generators for the License Renewal Program. Procedure GMP SAC-003, Revision 28, Step 7.3.7.F, required replacement of the in service main oil filter cartridges.

Contrary to the above, as of May 16, 2025, the licensee failed to implement Step 7.3.7.F of procedure GMP SAC-003 under work orders 700071251 and 700103871. Specifically, the licensee failed to replace the in service main oil filter cartridges on the D5 emergency diesel generator prior to exceeding the oil filter late date and without obtaining a preventive maintenance deferral.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Include Acceptance Criteria for the Lubrication Oil Sample and Analysis Program			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000282,05000306/2025011-02 Open/Closed	[H.13] - Consistent Process	71111.21N.04

The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation (NCV) of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the licensee’s failure to have appropriate acceptance criteria for determining that important activities have been satisfactorily accomplished. Specifically, implementing procedures H32.2, “Lubrication Sampling and Analysis Program,” Revision 12, and H65.2.24, “Lubricating Oil Analysis Aging Management Program,” Revision 5, failed to include acceptance criteria for safety-related equipment, including the D5 Emergency Diesel Generator (EDG), lubrication oil (LO) analysis results.

Description:

During the inspector’s review of the D5 EDG LO subsystem, surveillance procedure, SP 2295, “D5 Diesel Generator 6 Month Fast Start Test,” Revision 62, was performed at a 62-day frequency. Procedure Step 7.69, obtained a crankcase sump LO sample for offsite oil analysis. This step implemented procedure, H32.2, “Lubrication Sampling and Analysis Program,” Revision 12. It also credited the License Renewal Implementation and Aging Management Programs, specifically procedure H65.2.24, “Lubricating Oil Analysis Aging Management Program,” Revision 5. The LO analysis program was required by the site’s renewed operating license as described in USAR, Appendix L, Section L.2.24.

The inspectors requested and reviewed the D5 Engine 1 and 2 crankcase LO vendor analysis reports which were completed on March 27, 2025. Both vendor reports noted an abnormal status existed and stated, “Analysis indicates abnormal conditions! Possible sources include: bearing wear. Change the oil and filter(s) if not already performed. Resample at the next scheduled interval.” The inspectors noted copper, a tested wear metal, was marked as abnormal for the last six LO results.

The inspectors requested the corrective action document (CAP) that identified these abnormal conditions. The site provided CAP 501000064915 initiated on July 22, 2022, and closed on August 18, 2022. This CAP identified elevated copper levels in the vendor LO results which caused the site to take the following corrective measures:

1. Maintenance notification 10212449 issued for an on-demand oil change during the next maintenance window.
2. A new entry to the predictive maintenance watchlist for tracking.
3. Recommendation to change the LO filters at the next maintenance window.

The CAP’s issue notes section included an additional discussion of the high copper levels due to LO heat exchanger known copper ion leaching into the oil. However, the inspector noted there was no formal evaluation performed by the site. The site confirmed no other CAPs were generated for any oil-related condition on the D5 EDG LO since 2022.

The inspector interviewed the Lubrication Program Owner to understand where acceptance criteria were established for each of the tested LO parameters including wear metals, contaminants, additives, and fluid properties (e.g., viscosity and fuel percentage). In parallel with the site, the inspector reviewed the two implementing program procedures, H32.2 and H65.2.24. Through discussions, it was noted the Lubrication Program Owner used a trending software, OilView. The Lubrication Program Owner could determine alarm and action limits, at their discretion, for ease of trending oil samples. In addition to the software’s diagnostic aids, it was noted the Lubrication Program Owner had specialty machine lubricant analysis certifications. However, on April 7, 2025, the inspectors noted the site’s LO program did not

establish formal acceptance criteria to determine that important activities, such as review of safety-related LO analysis results, have been satisfactorily accomplished. The site was then informed of the inspectors' conclusions on the same day (April 7, 2025).

Corrective Actions: The licensee planned to perform a condition evaluation to revise procedures and practices to meet the LO analysis aging management requirements.

Corrective Action References: 501000097108, “ARD 2025 Lubricating Oil Analysis Pgm.”

Performance Assessment:

Performance Deficiency: The licensee’s failure to include quantitative or qualitative acceptance criteria for the lubrication sampling and analysis program procedures were contrary to 10 CFR 50 Appendix B, Criterion V, and was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Procedure Quality attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to establish acceptance criteria for the LO results of safety-related equipment, including the D5 EDG, did not ensure equipment would continue to be able to perform their safety functions. Additionally, it did not ensure corrective actions were consistently generated to evaluate abnormal LO analysis results.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix A, “The Significance Determination Process (SDP) for Findings At-Power.” The finding screened as having very low safety significance (Green) because the D5 EDG maintained its operability and PRA functionality. Specifically, absent acceptance criteria, the licensee included informal diagnostic aids within the oil-trending software and ensured qualified personnel evaluated the oil analysis’ acceptability.

Cross-Cutting Aspect: H.13 - Consistent Process: Individuals use a consistent, systematic approach to make decisions. Risk insights are incorporated as appropriate. Specifically, the lack of acceptance criteria in the LO analysis program did not ensure results were consistently evaluated to support nuclear safety.

Enforcement:

Violation: 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” requires, in part, that instructions, procedures, or drawings, shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

The licensee established procedures H32.2, “Lubrication Sampling and Analysis Program,” Revision 12, and H65.2.24, “Lubricating Oil Analysis Aging Management Program,” Revision 5, as the implementing procedures for the site’s safety-related equipment lubrication oil analysis program, an activity affecting quality. This program was required by USAR Appendix L, “Requirements of Renewed Operating Licenses,” Section L.2.24, “Lubricating Oil Analysis Program.”

Contrary to the above, as of May 16, 2025, Prairie Island Units 1 and 2 failed to include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Specifically, the site failed to include

acceptance criteria in lubricating oil program procedures or implementing work order instructions for determining safety-related equipment LO analysis results were satisfactory.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Correct a Condition Adverse to Quality on the Safety-Related Cooling Water Dump Valve, MV-32038

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000282,05000306/2025011-03 Open/Closed	[H.5] - Work Management	71111.21N.04

The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation (NCV) of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to correct a condition adverse to quality. Specifically, the licensee failed to correct output torque degradation, a condition adverse to quality, on the safety-related, emergency cooling water (CL) dump valve, MV-32038, identified under 2018 diagnostic testing work order (WO) 700013580 and corrective action document 501000020694.

Description:

Prairie Island's CL system was designed to provide redundant CL supplies to assure adequate heat removal based on the highest expected CL temperatures, maximum loading, and leakage allowances. The CL system normally disposed of the water through two turbine building discharge headers equipped with a standpipe. In the event the normal discharge lines were blocked, a safety-related return path was provided in the auxiliary building. This header was provided with a safety-related emergency CL dump valve, MV-32038, which dumped CL outside the auxiliary building to grade. This valve was normally closed to maintain the system pressure boundary and had an open safety-related function to provide an emergency dump to grade flow path.

The inspectors reviewed valve actuator diagnostic testing performed on MV-32028 under 2018 WO 700013580 and noted corrective action document (CAP) 501000020694 was initiated following review of the test data. The CAP identified the actuator output torque did not align with the expected output torque based on the previous spring pack curve and was captured as a condition adverse to quality. The CAP was subsequently closed to Maintenance Notification (MN) 10054383 which planned to address this issue during the next preventive maintenance (PM) occurrence.

Due to the CAP 501000020694 status being marked as completed, the inspectors requested the PM WOs which addressed the condition adverse to quality. In response to the inspectors' question, on March 28, 2025, the licensee generated CAP 501000096668, "NRC MV-32038 QIM 501000020694," which identified MN 10054383 was closed with no actions performed and stated, "MN 10054383 was closed to no action stating, 'this was fixed during one of the PM's' but this was erroneous, as there were no additional PMs, and the condition was not corrected during the Diagnostic PM that identified the issue. This resulted in no item tracking the issue in the Corrective Action Process or Work Management to be corrected." The inspectors became aware of the licensee conclusions on the same day, March 28, 2025.

Additionally, the inspectors questioned whether there were indications of actuator spring pack relaxation in the 2018 WO. In response to the inspectors' questions, the licensee added troubleshooting of the spring pack to the scope of the corrective maintenance WO.

Corrective Actions: The licensee generated Maintenance Notification 10327983 and planned to perform troubleshooting of the actuator and spring pack during the next scheduled corrective maintenance WO.

Corrective Action References: 501000096668, "NRC ARD MV-32038 QIM 501000020694."

Performance Assessment:

Performance Deficiency: The licensee's failure to correct a condition adverse to quality was contrary to 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," and was a performance deficiency. Specifically, the licensee failed to correct the safety-related MV-32038 output torque degradation, a condition adverse to quality, when corrective action document 501000020694 and MN 10054383 were closed with no actions performed.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, although the non-safety turbine building discharge paths were available, MV-32038 was the only safety-related valve that provided an emergency CL dump to grade capability. The degradation of the valve output torque could result in the valve failing to fully open and perform its safety-related function, and fail to meet the full stroke Maintenance Rule success criteria.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspectors determined the finding was of very low safety significance (Green) because although the finding was a deficiency affecting the design or qualification of a SSC, due to redundant non-safety and safety-related flow paths, the cooling water system maintained its operability and PRA functionality.

Cross-Cutting Aspect: H.5 - Work Management: The organization implements a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. The work process includes the identification and management of risk commensurate to the work and the need for coordination with different groups or job activities. Specifically, the erroneous closure of MN 10054383 did not ensure a condition adverse to quality was corrected and that nuclear safety was the overriding priority.

Enforcement:

Violation: 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures be established to ensure conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are corrected.

Contrary to the above, from December 04, 2018, to May 16, 2025**,** the licensee failed to correct a condition adverse to quality. Specifically, the safety-related emergency cooling water dump valve, MV-32038, output torque degradation was identified in corrective action document 501000020694. Maintenance Notification 10054383 was initiated and inadequately

closed on March 21, 2024, to no action performed which resulted in the failure to correct the output torque degradation, a condition adverse to quality.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Implement the Preventive Maintenance Procedure for Valve Controller Maintenance

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000282,05000306/2025011-04 Open/Closed	None (NPP)	71111.21N.04

The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation (NCV) of technical specification (TS) 5.4.1.a, “Procedures,” for the failure to implement Procedure PE MCC-G7, “MMC Electrical Preventive Maintenance for GE 7700 Line MCCS,” Revision 19, which was a procedure performing maintenance that could affect the performance of safety-related equipment. Specifically, the licensee failed to implement procedure Step 7.2.11.D.3 when they applied excessive grease to an auxiliary contact assembly within the the Unit 1 train A pressurizer power operated relief valve (PORV) isolation valve motor controller.

Description:

On July 4, 2022, the Unit 1 train A PORV isolation valve, MV-32195, failed to close during routine TS testing. The licensee found excessive grease within the auxiliary contact assembly of the open contactor of the valve's motor controller. Specifically, contact set 5/7 was found to be electrically open during troubleshooting. The expected position of contact set 5/7 was electrically closed. The design function of the failed open contactor auxiliary contact set 5/7 was to prevent the closed contactor from operating at the same time as the open contactor. Energizing both contactors at the same time caused an electrical fault and was prevented both mechanically and electrically within the PORV isolation valve controller design. During previous TS testing, on April 4, 2022, the last valve motion to restore operability was in the open direction. The open contactor auxiliary contact set 5/7 should have mechanically and electrically closed when the open contactor was de-energized after reaching the desired open valve position. The open contactor auxiliary contact set 5/7 was not required to reposition for valve closure and was not operated again after April 4, 2022. The license cleaned off the excessive grease, performed the applicable steps of the overhaul procedure, and retested the valve prior to declaring it operable on July 5, 2022.

The inspectors reviewed the licensee’s corrective action documents and associated maintenance rule evaluations and found the licensee categorized the issue as a maintenance preventable functional failure. The licensee determined excess grease was applied during a 2006 controller maintenance activity. The licensee reviewed the most recent 2018 controller maintenance activity and found the steps associated with cleaning and regreasing the contactors were marked “not applicable” and not performed. On March 25, 2025, the inspectors interviewed site personnel and became aware of this issue.

The inspectors reviewed the procedure used to perform the 2006 controller maintenance and found that it cautioned the performer against using excess grease and directed that only

sufficient grease be used to achieve smooth plunger movement. Specifically, Procedure PE MCC–G7, Revision 19, Step 7.2.11.D.3, stated, in part:

> Inspect aux contacts for the proper lubrication. Wipe clean the phenolic plunger and guides. For plunger lubrication, only sufficient grease to assure smooth movement of the plunger without any binding should be used. Use only GE-351 Grease or Mobil 28 as an alternate. The grease should be applied to the . 4 x .5-inch guides that slide in the slot formed by the housing. Care must be taken to assure that excess grease does not contaminate the contacts.

During their evaluation of the PORV isolation valve failure, the licensee was notified by the contactor vendor of the applicability of Service Information Letter (SIL)-652, dated September 12, 2003, (ADAMS Accession # ML081580320) to CR105X series auxiliary contacts. Specifically, the information letter stated, “General Electric (GE) Nuclear Energy recommends that owners of GE boiling water reactors (BWRs) with CR105X series auxiliary contacts do not lubricate the contacts. If sticking or binding occurs, the auxiliary contact should be replaced.” The licensee is not a GE BWR plant, but the auxiliary contact operating experience (OE) is valid regardless of the reactor type. The licensee confirmed the vendor did not send SILs to pressurized water reactors. The licensee did identify that an OE evaluation in 2008 discussed SIL-652, but no procedure changes were initiated. The 2008 OE evaluation was after the 2006 maintenance activity which applied excess grease to the PORV isolation valve and was not reviewed by the inspectors. The licensee initiated a procedure change request to incorporate the recommendations of SIL-652 into PE MCC-G7.

Corrective Actions: The licensee cleaned off the contactor excessive grease, performed the applicable steps of the overhaul procedure, and retested the PORV isolation valve prior to declaring it operable on July 5, 2022.

Corrective Action References: 501000064451,“MV-32195 Failed to Close During SP,” 501000066936, “Prairie Island Not Notified of SIL-652 Applicability.”

Performance Assessment:

Performance Deficiency: The failure to perform maintenance in accordance with Procedure PE MCC-G7, Revision 19 was contrary to NRC Regulatory Guide 1.33, Appendix A, Section 9 and Technical Specification 5.4.1 and a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, application of excess grease on the auxiliary contactor led to the failure of the PORV isolation valve to close and prevented it from being able to respond to an initiating event, such as a stuck open PORV.

Significance: The inspectors assessed the significance of the finding using Detailed Risk Evaluation (blank significance section) The inspectors assessed the significance of the finding using IMC 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” Exhibit 2, “Mitigating Systems Screening Questions.” Specifically, the inspectors answered “YES” to the question, “Does the degraded condition represent a loss of the probabilistic risk assessment (PRA) function of a single train technical specification (TS) system for greater than its TS allowed outage time?” and determined that a detailed risk evaluation (DRE) was required.

A senior reactor analyst performed a DRE which characterized the issue as having very low safety significance (Green). The analyst used SAPHIRE version 8.2.12 and the Prairie Island SPAR model version TLU1 to assess the significance of the finding for all hazards except for fire and internal flooding, which are not represented in the SPAR model. Results from the licensee's PRA model, Revision 5.4, were reviewed and considered best-available information to assess the significance of the finding for fire, internal flooding and large early release frequency (LERF). The following assumptions and factors were considered in the quantification:

a. The finding caused the Unit 1, A pressurizer power operated relief valve (PORV) block valve, MOV-32195, close function to be unavailable for a period of 93 days. Therefore, PPR-MOV-OO-32195, PORV 1 block valve fails to close, was set to TRUE. MOV-32195 was open throughout the exposure period.
b. The Prairie Island SPAR model version 8.83 was modified, with the assistance of Idaho National Laboratory, to more closely reflect assumptions in the licensee PRA model. Specifically, the frequency for spurious opening of a pressurizer PORV was adjusted to reflect INL/EXT-21-65055, "Industry-Average Performance for Components and Initiating Events at U.S. Commercial Nuclear Power Plants: 2020 Update," issued November 2021. This was a key assumption in the evaluation. Additionally, the human error probabilities for operator failure to perform reactor coolant system (RCS) cooldown and failure to start safety injection containment sump recirculation were adjusted based for dependency.

The resultant change in core damage frequency (CDF) was estimated to be 3.8 E-7/year for internal events and 1.0 E-7/year for fire, for a total of 4.8 E-7/year. Therefore, the finding was determined to be of very low safety significance (Green) since the total change in CDF was <1E-6/year. The resultant change in LERF was estimated to be 5.4 E-9/year for internal events and 1.5 E-9/year for fire, for a total of 6.9 E-9/year. Therefore, the finding was determined to be of very low safety significance (Green) since the total change in CDF was <1E-7/year. Results for other hazards were negligible for both CDF and LERF. The dominant core damage sequences for the finding were driven spurious operation of the pressurizer PORV, followed by actuation of safety injection, operator failure to perform RCS cooldown and depressurization, and operator failure to start safety injection containment sump recirculation prior to refueling water storage tank depletion, ultimately resulting in core damage.

Cross-Cutting Aspect: Not Present Performance. No cross-cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance.

Enforcement:

Violation: Technical Specification Section 5.4.1.a requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978.

NRC Regulatory Guide 1.33, Revision 2, Appendix A, Section 9 addresses "Procedures for Performing Maintenance" and Section 9.a states, in part, "Maintenance that can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedures and documented instructions appropriate to the circumstances."

The licensee established Procedure PE MCC–G7, “MMC Electrical Preventative Maintenance for GE 7700 Line MCCS,” Revision 19, to perform maintenance that could affect the performance of safety-related equipment. Step 7.2.11.D.3, stated, in part, “Inspect aux contacts for the proper lubrication. Wipe clean the phenolic plunger and guides. For plunger lubrication, only sufficient grease to assure smooth movement of the plunger without any binding should be used. Use only GE-351 Grease or Mobil 28 as an alternate. The grease should be applied to the .4 x .5-inch guides that slide in the slot formed by the housing. Care must be taken to assure that excess grease does not contaminate the contacts.”

Contrary to the above, on May 3, 2006, the licensee failed to implement Step 7.2.11.D.3 of Procedure PE MCC–G7. Specifically, the licensee applied excessive grease and failed to apply only sufficient grease to the PORV isolation valve, MV-32195, controller’s auxiliary contact assembly as required by procedure Step 7.2.11.D.3.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Manage the Effects of Insulation Degradation on Inaccessible Low and Medium Voltage Cables

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000282,05000306/2025011-05 Open/Closed	None (NPP)	71111.21N.04

The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation (NCV) of the Unit 1 and Unit 2 License Renewal Condition 2.C.(8)(b) for the failure to implement Updated Final Safety Analysis Report (UFSAR) Appendix L, Section L.2.21, “Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program,” prior to the period of extended operation. Specifically, the licensee failed to implement a proven test for detection of the deterioration of insulation due to wetting, such as power factor, partial discharge, or other state-of-the-art test, while testing inaccessible low and medium voltage power cables (operating at greater than or equal to 400V) within the scope of license renewal.

Description:

Cable 1AB1-20 powered the safety-related motor operated cooling water (CL) isolation valve, MV-32021. The isolation valve functioned to isolate non-essential equipment in the Unit 1 turbine building from the essential CL header when a safety injection signal was present with low CL supply header pressure. The inspectors reviewed the previous insulation cable tests and on April 4, 2025, questioned the test method used to detect insulation degradation due to wetting. As a result of the inspectors’ questions, the licensee completed a condition evaluation on May 5, 2025 (under CAP 501000097054), and identified multiple issues with their license renewal (LR) credited cable testing procedures. Specifically, the four test procedures listed within the licensee’s Program Procedure H65.2.21, “Inaccessible Medium and Low Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Aging Management Program,” Revision 4, allowed test configurations that did not test cable insulation health. The four test procedures included: PE 4825, “Testing of Cables Rated Greater Than 600 Volts”; PE 4826, “Testing of Cables Less Than 600 Volts”; MSIP 3000, “Motor Megger”; and MSIP 3033, “Off-line Motor Testing Using PDMA Motor Tester.”

The licensee found procedures PE 4825, PE 4826, and MSIP 3000 allowed testing of a cable with the motor attached. The procedures tested each conductor individually and did not require the other conductors within the cable to be grounded, which was needed to measure the resistance across the cable insulation. The licensee concluded the test configuration did not test the cable but only tested the attached motor winding insulation resistance to the motor housing ground. The licensee also found that they did not have a technical justification for crediting insulation resistance testing as a proven test for detecting insulation deterioration due to wetting or submergence for low voltage cables. The licensee found changes were made in April 2011 to PE 4825 which allowed the non-test end of conductors to remain terminated and changes in February 2013 to PE 4826 which allowed the non-test end of conductors to remain terminated.

The inspectors reviewed the insulation testing history of cable 1AB1-20 which included November 2012 work order (WO) 455937, October 2018 WO 700024472, and February 2023 WO 700108125. The inspectors noted these WOs never tested the insulation for the detection of deterioration due to wetting or submergence prior to the period of extended operation through the present time. The inspectors review found the 2012 WO prescribed the use of PE 4826, Revision 1, which did not allow testing with the motor attached and contained Step 7.2.2 that directed the technicians to ground all conductors not being tested. This configuration would have properly tested the cable insulation; however, the WO instructions in 2012, 2018, and 2023 all directed the technicians to not ground conductors that were not under test. The WOs performed in 2018 and 2023 used MSIP 3000 instead of PE 4826. The licensee documented in a 2018 condition report, CAP 501000018979, that a maintenance supervisor had field changed the 2018 cable 1AB1-20 test WO implementing procedure from PE 4826 to MSIP 3000 without the station evaluating or documenting the adequacy of MSIP 3000 to satisfy LR commitments. This condition report also contained input from the cable program owner and recommended revising H65.2.21 to include MSIP 3000 as one of the implementing procedures since the site believed MSIP 3000 was adequate to assess the insulation resistance of cables.

The licensee's evaluation also found they did not have technical justification to credit MSIP 3033, which measures motor health using a vendor motor circuit analyzer, as a valid test to detect insulation degradation due to wetting or submergence. The licensee reviewed vendor documents associated with the motor circuit analyzer and found the tester was only designed for monitoring motor health. The licensee concluded MSIP 3033 was not an appropriate cable test procedure for the H65.2.21 program. The inspectors review also found MSIP 3033 was not a credited LR test procedure until 2019, when H65.2.21, Revision 2, was published; however, the licensee used MSIP 3033 on LR scoped cables since the 2010 timeframe. Specifically, cables for the safety-related Unit 2 diesel generator room cooling fans and the 121 screenwash pump motor failed to have a test performed proven for the detection of insulation deterioration due to wetting or submergence from prior to the period of extended operation until present time.

Corrective Actions: The licensee's planned corrective actions included: removing MSIP 3000 and MSIP 3033 as credited implementing procedures in H65.2.21; changing procedures PE 4825 and PE 4826 to require disconnecting the cable end device and ensuring proper configurations when performing insulation resistance tests; perform an evaluation to confirm that insulation resistance testing is a proven test for detecting insulation deterioration due to wetting or submergence for low voltage cables; reviewing maintenance orders for

maintenance plans listed in H65.2.21, Table 3, and creating maintenance requests or work orders for maintenance plans that need to be reperformed.

Corrective Action References: 501000097054, “ARD 2025 MSIP 3000 for LR Cable Testing”; 501000097084, “2025 ARD Cable Tests”; 501000097161, “ARD 2025 Cable Testing Acceptance Criteria”; 501000098217, “ARD 2025 FP-PE-CBL-01”; 501000098221, “ARD 2025 Additional Maintenance Procedures.”

Performance Assessment:

Performance Deficiency: The failure to perform a proven test for detecting the deterioration of insulation due to wetting, such as power factor, partial discharge, or other state-of-the-art test, while testing inaccessible low and medium voltage power cables (operating at greater than or equal to 400V) within the scope of LR, was contrary to procedure H65.2.21, Step 4.3.4 and a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, failing to adequately test cables to identify age-related degradation from prior to the period of extended operation can lead to preventable cable failures of known aging effects that were required to be managed.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix A, “The Significance Determination Process (SDP) for Findings At-Power.” Specifically, the inspectors determined the finding was of very low safety significance (Green) because they answered “No” to all Exhibit 2, “Mitigating Systems Screening Questions,” and therefore, it screened to Green.

Cross-Cutting Aspect: Not Present Performance. No cross-cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance.

Enforcement:

Violation: Operating Licenses No. DPR-42 and DPR-60, License Condition 2.C.8.(b) states, in part, “Appendix A of “Safety Evaluation Report Related to the License Renewal of Prairie Island Nuclear Generating Plant, Units 1 and 2,” dated October 16, 2009, and supplemented on April 15, 2011, and the licensee’s USAR supplement submitted pursuant to 10 CFR 54.21(d) describe certain future programs and activities to be completed before the period of extended operation. The licensee shall complete these activities no later than August 9, 2013 [for Operating License DPR-42], and October 29, 2014 [for Operating License DPR-60].”

Updated Final Safety Analysis Report (UFSAR) Appendix L (the License Renewal USAR supplement), Section L.2.21, “Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program,” states, in part, this program “performs periodic tests to provide an indication of the condition of the conductor insulation for inaccessible low and medium voltage (operating at greater than or equal to 400V) power cables in scope of License Renewal and exposed to long periods of high moisture (greater than a few days at a time). This program includes inaccessible low and medium voltage power cables (direct buried or in underground ducts) not designed for wet environments. Insulation testing for the affected cables is performed at least once every six years, with the first tests completed prior to the period of extended operation.”

Licensee Procedure H65.2.21, “Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program,” Revision 4, implemented UFSAR Appendix L, Section L.2.21. Section 4.3, “Parameters Monitored/Inspected,” Step 4.3.4, states, “the type of test performed will be a proven test for detecting deterioration of insulation due to wetting, such as power factor, partial discharge, or other state-of-the-art test.” Table 2, “Implementing Documents,” lists, in part, “PE 4825, “Testing of Cables Rated Greater than 600 Volts”; PE 4826, “Testing of Cables Rated Less than 600 Volts”; MSIP 3000, “Motor Megger”; and MSIP 3033, “Off-Line Motor Testing Using the PDMA Motor Tester.”

Contrary to the above, prior to the period of extended operation for Unit 1 on August 9, 2013, and Unit 2 on October 29, 2014, the licensee failed to complete the program described in UFSAR Appendix L, Section L.2.21, “Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program.” Specifically, the licensee failed to perform periodic tests to provide an indication of the condition of the conductor’s insulation for inaccessible low and medium voltage power cables not designed for wet environments. The tests performed prior to the period of extended operation on Unit 1 safety-related cable 1AB1-20, Unit 2 safety-related 211D and 221D diesel generator room cooling fan motors, and the 121 screenwash pump motor were not proven tests for detecting the deterioration of insulation due to wetting, such as power factor, partial discharge or other state-of-the-art test, as required by implementing procedure H65.2.21.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Steps Incorrectly Marked Not Applicable While Implementing Preventive Maintenance on Safety-Related Valve Controller

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000282,05000306/2025011-06 Open/Closed	[H.2] - Field Presence	71111.21N.04

The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation (NCV) of technical specification (TS) 5.4.1.a, “Procedures,” for the failure to implement preventive maintenance (PM) Procedure PE MCC-G7, “MMC Electrical Preventive Maintenance for GE 7700 Line MCCS,” for the Unit 1 train A pressurizer power operated relief valve (PORV) isolation valve’s motor controller breaker, a safety-related component. Specifically, the licensee failed to perform multiple procedure steps for inspections and PM tasks on safety-related components including the molded case circuit breaker, unit stabs, starter, contacts, auxiliary contact assembly and fuses.

Description:

On July 4, 2022, the Unit 1 train A PORV isolation valve, MV-32195, failed to close during routine TS testing. During troubleshooting, the licensee found excessive grease within the auxiliary contact assembly of the open contactor, specifically, contact set 5/7 was found to be electrically open. In the licensee’s assessment of the failure, they reviewed the 2018 PM Work Order (WO) 700024256 for the periodic electrical overhaul of the PORV isolation valve, MV-32195, motor controller breaker, 112L-22. The licensee’s maintenance rule and past operability assessment determined the failed auxiliary contact assembly was not worked

during the 2018 PM since the relay had positive test results from earlier in the inspection.

The inspectors reviewed the completed 2018 WO and found numerous sections marked not applicable (NA) in the PM procedure. Specifically, PE MCC-G7, “MMC Electrical Preventive Maintenance for GE 7700 Line MCCS,” Revision 42, Section 7.5, “Mechanical Inspections, Maintenance and Adjustments,” was marked NA. If performed, this section would have cleaned and regreased the failed auxiliary contactor. The inspectors noted the PM had a 12-year frequency and on March 25, 2025, questioned why it was appropriate to not perform parts of the procedure which were credited as part of the periodic PM program. The licensee interviewed electrical maintenance personnel and was not able to determine why the steps were marked NA.

On March 26, 2025, the licensee entered the issue of incorrectly marking steps NA in their corrective action program (CAP) under CAP 501000096555. The licensee found most of the 2018 WO steps marked NA did have completed test results in the back of the procedure. However, Section 7.5 did not have an associated data collection section and performance was not able to be confirmed. The licensee reviewed the corrective WOs from the failed 2022 PORV auxiliary contactor and was not able to confirm that the entire Section 7.5 had been completed as part of those activities.

In addition to the inappropriately marked NA steps, the inspectors found numerous steps in the 2018 WO that were left blank, which included Steps 7.1.2, 7.6.1, and 7.8.11 through 7.8.17. The inspectors found for some steps, even though they were not signed off, it was obvious that they were completed, such as installing the motor controller center bucket in the motor control center. The inspectors also reviewed Step 7.8.11, which stated, “If any parts were replaced, or if any ‘As Found’ or ‘As Left’ test results are not acceptable, then have the Electrical Supervisor review the MCC Test Form.” The inspectors found the WO replaced a motor overload relay, however, Step 7.8.11 was marked NA.

The licensee determined, based on a lack of proper documentation for WO 700024256, that they needed to reperform a full PM activity for the PORV isolation valve breaker and motor controller.

Corrective Actions: The licensee entered the issue into their CAP and created Maintenance Notification 10327950 to reperform the PM activity for the PORV isolation valve breaker and motor controller. Additionally, the licensee documented the inconsistent use of NA when implementing station procedures and recommended a condition evaluation to determine actions necessary for establishing a proper and consistent use of NA in their procedures and work plans.

Corrective Action References: 501000096555, “ARD 2025 BKR 112L-22 Maintenance,” 501000097087, “ARD 2025 Trend in Use of N/A,” 501000098824, “ARD 2025 BKR 112L-22 Maintenance PU&A.”

Performance Assessment:

Performance Deficiency: The failure to perform maintenance in accordance with PM Procedure PE MCC-G7, Revision 42, on breaker 11L-22 / MCC 1LA1-B3 for the Unit 1 pressurizer PORV isolation valve, MV-32195, was contrary to TS 5.4.1.a and was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to implement the 12-year PM activities reduced the reliability and capability of the safety-related Unit 1 pressurizer PORV motor controller. Additionally, prior to the next 12-year PM completion, the valve failed to close in 2022 due to excessive grease within the auxiliary contact assembly of the open contactor which would have been cleaned and regreased if the 2018 PM procedure were performed in accordance with the work instructions.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Specifically, the inspectors determined the finding was of very low safety significance (Green) because they answered "No" to all Exhibit 2, "Mitigating Systems Screening Questions" and therefore, it screened to Green.

Cross-Cutting Aspect: H.2 - Field Presence: Leaders are commonly seen in the work areas of the plant observing, coaching, and reinforcing standards and expectations. Deviations from standards and expectations are corrected promptly. Senior managers ensure supervisory and management oversight of work activities, including contractors and supplemental personnel. Specifically, leaders did not enforce expectations for procedure use and adherence for performing required PM activities on safety-related equipment and did not correct deviations from standards prior to WO completion.

Enforcement:

Violation: Technical Specification Section 5.4.1.a requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978.

NRC Regulatory Guide 1.33, Revision 2, Appendix A, Section 9 addresses "Procedures for Performing Maintenance" and Section 9.a states, in part, "Maintenance that can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances."

The licensee established Procedure PE MCC–G7, "MCC Electrical Preventive Maintenance for GE 7700 Line MCCS," Revision 42, to address maintenance activities on the GE 7700 line motor control center (MCC) draw out unit. Section 7.5, "Mechanical Inspections, Maintenance and Adjustments," Steps 7.5.1, 7.5.2, and 7.5.3 performed a general inspection, molded case circuit breaker (MCCB) inspection, and starter and contact inspection and maintenance activities respectively.

Work Order (WO) 700024256 implemented procedure PE MCC-G7 and stated, "the purpose of this task is to perform PE MCC-G7 (MCC Electrical Preventive Maintenance For GE Line MCCS) for BKR 11L-22 / MCC 1LA1-B3 (1 PRZR PORV ISOL MV-32195)." WO task instruction 3, stated, "Perform PE MCC-G7 for BKR112L-22," a safety-related component.

Contrary to the above, between October 2, 2018, and October 11, 2018, the licensee failed to implement Steps 7.5.1, 7.5.2, and 7.5.3 of procedure PE MCC-G7. Specifically, the licensee failed to perform the general inspection, MCCB inspection, starter and contact inspection, and

maintenance activities on safety-related breaker 11L-22 / MCC 1LA1-B3 for the Unit 1 pressurizer PORV isolation valve, MV-32195, when WO 700024256 Steps 7.5.1, 7.5.2, and 7.5.3 were marked not applicable.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Verify the Adequacy of Design of the Containment Fan Coil Unit Isolation Valves			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000282,05000306/2025011-07 Open/Closed	None (NPP)	71111.21N.04

The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation (NCV) of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix B, "Design Control," for the licensee's failure to verify the adequacy of design of 16 containment fan coil unit (FCU) cooling water (CL) supply and isolation motor operated valves (MOVs). Specifically, the licensee failed to verify the MOVs' design closure function to provide isolation capability of a CL leak into containment and prevent the dilution of containment sump boron concentrations. The licensee failed to verify the adequacy of design for the following valves: MV-32132, MV-32135, MV-32138, MV-32141, MV-32147, MV-32150, MV-32153, MV-32156, MV-32377, MV-32378, MV-32379, MV-32380, MV-32386, MV-32387, MV-32388, and MV-32389 (hereafter referred to as FCU CL supply and return isolation valves).

Description:

Prairie Island's containment cooling system consisted of four FCUs, located in the reactor containment vessel, which re-circulated and cooled the reactor containment vessel atmosphere. During an emergency, the heat sink for the FCUs was provided by the CL system. The CL supply lines to the FCUs were provided with a remote manual motor operated gate valve outside containment. Return lines were provided with a remote manual motor operated gate valve inside containment and a remote manual motor operated globe valve outside containment. These FCU CL supply and return isolation valves were normally open and during an accident, received an open signal to satisfy their safeguards function to ensure maximum CL flow was provided to the associated FCU.

Updated final safety analysis report (UFSAR), Section 5.3.3.3, stated, "In the event of an accident, the cooling water supply and return isolation valves position to full open to satisfy their safeguards function. In the event of a fan coil unit or associated piping rupture the containment remote manual motor operated isolation valves would be closed to prevent the entry of non-borated water into containment." Additionally, the inspectors reviewed licensee response letter from May 30th, 1980, "Northern States Power Company Response to Request for Information, Prairie Island Station Units 1 and 2, Implementation of 10CFR50, Appendix J, Containment Leakage Testing (ML19312E682)." Response to Item 2.1, "Fan Coil Isolation Valves," stated, in part, "In the event of a fan coil unit or associated piping rupture the containment manual isolation valves would be closed to prevent entry of non-borated water into containment. Pressure against the close isolation valves is maintained by 1/2-inch equalizing lines."

The inspectors reviewed licensee document H10.1.B, "Prairie Island Inservice Testing Valve

Data Sheets - Unit 1," Revision 6, and noted the FCU supply and return isolation valves were classified as passive under the Inservice Testing (IST) program, and did not have a safety function to close. Specifically, H10.1.B stated, "This normally open valve has a passive safety function in the open position to provide CL system flow to the containment fan cooler units. It automatically opens on a safety injection signal. This valve does not have a safety function to close. The CL piping and FCUs are a closed system inside containment therefore containment isolation is not required." However, based on UFSAR Section 5.3.3.3, the inspectors questioned whether the FCU CL supply and return isolation valves should have a closed safety function, to isolate a CL leak into containment and prevent the dilution of containment sump boron concentrations.

The inspectors reviewed Revision 4 of H.10.1.B and noted the close safety function basis stated, "The valve does not have a safety function in the closed position and is not relied upon to prevent containment leakage. However, Prairie Island prefers to consider this valve as an active component and to test the valve in both the Open and Closed positions because of the possibility of a passive failure within the closed system inside containment during normal operation." Licensee Abnormal Operating Procedure (AOP) C35 AOP4, "Cooling Water Leakage in Containment," Revision 25**,** defined plant response to CL leakage in containment when the affected unit was operating above 200 Fahrenheit. The procedure stated, "Plant response to a confirmed leak in containment is to isolate the supply and return motor operated valves and tag their supply breakers OPEN to prevent actuation on SI signal." Table 1, "CFCU Supply and Return MOV Isolations," listed the 16 FCU supply and return isolation valves, and directed closure depending on which FCU was suspected of leaking CL into containment.

The inspectors reviewed Engineering Calculation, ENG-ME-334, "Section XI Design Basis Valve Limiting Stroke Times," Revision 6, and noted Section 7.4.5., "Fan Coil Unit Isolation Valves" stated, "In the event of a FCU tube leak during accident mitigation, the inlet and the two outlet MOVs are closed to prevent entry of non-borated water into containment." The inspectors noted one minute was the acceptance criteria for the maximum stroke closure time for the FCU supply and return isolation valves.

Additionally, the inspectors reviewed UFSAR Section 1.5, "General Design Criteria," which stated, in part, "a single failure is described as: a random failure and its consequential effects, in addition to an initiating occurrence, that results in the loss of capability of a component to perform its intended safety function(s)…During the short term the single failure considered may be limited to an active failure. During the long term, assuming no prior failure during the short term, the limiting single failure considered can be either active or passive…A passive failure in a fluid system is a breach in the fluid pressure boundary or a mechanical failure which adversely affect a flow path…Leakage due to pressure boundary breaches are limited to a 50-gpm [gallon per minute] maximum."

On March 27, 2025, during discussions with licensee staff, the inspectors postulated a long-term, passive, single failure of a FCU (50 gpm leak) inside containment concurrent with a design-basis loss-of-coolant accident (LOCA) and questioned if the valves would be required to close to prevent non-borated water from entering containment. Specifically, if the valves had a safety function to close to prevent the dilution of the containment sump boron concentration to ensure the reactor is maintained in a subcritical condition.

In response to the inspectors' questions, the licensee provided their current post-LOCA long-Term subcriticality evaluation under licensing report LTR-PEP-08-35, "Prairie Island

Units 1&2 422v+ Reload Transition Licensing Report," Revision 1. Upon review, the inspectors noted the licensee relied on sufficient concentrations of borated water to ensure long-term subcriticality and maintain the reactor shutdown following a LOCA. Specifically, Section 5.2.3 stated, “since credit for the control rods is not taken for an LBLOCA, the RCS inventory, spilled ECCS water, and other water that ends up in the containment sump must have a sufficient boron concentration such that the reactor core remains subcritical assuming all control rods out.” The inspectors noted this report was incorporated as a reference in UFSAR Section 14.10, “Long Term Cooling Following a LOCA.”

Additionally, the inspectors reviewed UFSAR Section 14.6,“Large Break LOCA Analysis,” which stated, “the large break LOCA analysis does not model control rod insertion and thus does not specifically model a reactor trip setpoint. The injection of borated water limits the consequences of the accident in two ways:

1. Borated water injection complements void formation in causing rapid reduction of power to a residual level corresponding to fission product decay heat
2. Injection of borated water provides heat transfer from the core and prevents excessive clad temperatures.”

Based on UFSAR Sections 5.2.3.3, 14.6, and 14.10, Engineering Calculation (ENG-ME-334, Section 7.4.5), and the licensees’ current post-LOCA long-term subcriticality evaluation (LTR-PEP-08-35), the inspectors determined the site did not verify or check the adequacy of design for the valves’ closure function such as by the performance of design reviews, by the use of alternate or simplified calculational methods or by the performance of suitable testing program. Specifically, the site’s design and licensing documentation identified the valves had a design function to close. However, the closure function of the valves were not scoped into the IST program. Additionally, the site could not provide additional design reviews or calculational methods that verified the adequacy of long term-cooling following a LOCA given a FCU CL leak into containment to prevent non-borated water from entering containment and to maintain the reactor in a safe shutdown condition. In response to the inspectors' question, on April 09, 2025, the licensee generated CAP 501000097046, to perform a review of site design and licensing basis.

Corrective Actions: The licensee planned to perform an evaluation to review design-basis documents and determine if the programmatic scoping and testing aligned with current safety functions of the FCU CL supply valves.

Corrective Action References: 501000097046, “ARD 2025: FCU Inlet MOV Safety Class”

Performance Assessment:

Performance Deficiency: The licensee’s failure to verify the adequacy of design of the FCU supply and isolation valves was contrary to 10 CFR 50, Appendix B, Criterion III, “Design Control,” and was a performance deficiency. Specifically, the licensee failed to verify the design closure function to isolate a CL leak into containment of 16 FCU supply and return isolation MOVs.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the SSC and Barrier Performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, not verifying the adequacy of the FCU supply and return

isolation valves design could challenge the valve's closure capability during a design-basis event to prevent the entry of non-borated water into containment and maintain the reactor in a safe shutdown condition. Additionally, the site's current design and licensing basis credited closure of the valves, however, performance of closing the valves were not included in a suitable testing program.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspectors determined the finding was of very low safety significance (Green) because they answered "No" to all Exhibit 3, "Barrier Integrity Screening Questions," Section A, "Fuel Cladding Integrity," screening questions.

Cross-Cutting Aspect: Not Present Performance. No cross-cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance.

Enforcement:

Violation: 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that the licensee provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program.

Updated Final Safety Analysis Report (UFSAR) Section 1.5, "General Design Criteria," "Criterion 21 – Single Failure Definition," states, in part, "a single failure is described as: a random failure and its consequential effects, in addition to an initiating occurrence, that results in the loss of capability of a component to perform its intended safety function(s)… During the short term, the single failure considered may be limited to an active failure. During the long term, assuming no prior failure during the short term, the limiting single failure considered can be either active or passive… A passive failure in a fluid system is a breach in the fluid pressure boundary or a mechanical failure which adversely affect a flow path… Leakage due to pressure boundary branches are limited to a 50-gpm [gallons per minute] maximum."

UFSAR Section 5.2.3.3, "Containment Vessel Air Handling System," states, in part, "In the event of an accident, the cooling water supply and return isolation valves position to full open to satisfy their safeguards function. In the event of a fan coil unit or associated piping rupture the containment remote manual motor operated isolation valves would be closed to prevent the entry of non-borated water into containment."

UFSAR Section 14.10, "Long Term Cooling Following a LOCA," references evaluation LTR-PEP-08-35, "Prairie Island Units 1&2 422v+ Reload Transition Licensing Report," Revision 1, Section 5.2.3, "Post-LOCA Long-Term Subcriticality Cooling Evaluation," states, in part, "Analyses demonstrate that the reactor will remain shut down by borated ECCS water alone after a LOCA. Since credit for the control rods is not taken for an LBLOCA, the RCS inventory, spilled ECCS water, and other water that ends up in the containment sump must have a sufficient boron concentration such that the reactor core remains subcritical assuming all control rods out."

Contrary to the above, as of May 16, 2025, the licensee failed to verify the adequacy of design of the FCU supply and return motor operated isolation valves. Specifically, the licensee failed to verify the design closure function of the FCU supply and return motor

operated isolation valves, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program, to provide isolation capability of a cooling water leak into containment. This included the following valves: MV-32132, MV-32135, MV-32138, MV-32141, MV-32147, MV-32150, MV-32153, MV-32156, MV-32377, MV-32378, MV-32379, MV-32380, MV-32386, MV-32387, MV-32388, and MV-32389.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

EXIT MEETINGS AND DEBRIEFS

The inspectors confirmed that proprietary information was controlled to protect from public disclosure.

- On May 16, 2025, the inspectors presented the AGE-RELATED DEGRADATION INSPECTION results to Bryan Currier and other members of the licensee staff.
- On April 11, 2025, the inspectors presented the Technical Debrief inspection results to Werner Paulhardt and other members of the licensee staff.
- On May 15, 2025, the inspectors presented the Technical Debrief inspection results to Werner Paulhardt and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.21N.04	Corrective Action Documents	01276796	PE 4825, Rev 3 Testing of Cables Rated Greater Than 600V	03/22/2011
		01353631	PE-4826 , Rev 1 (LR Applicability Statement)	02/22/2013
		01353631	PE-4826 , Rev 1 (LR Applicability Statement)	10/01/2012
		01359497	WO 455937, Cable Test of 1AB1-20 Did Not Record Actual Value	11/16/2012
		01364064	PE 4826 Testing of Cables Rated Less Than 600 Volts Rev 1	12/20/2012
		01364064	PE 4826 Testing of Cables Rated Less Than 600 Volts Rev 1	12/20/2012
		01500815	U2 Circ Water Pumps Level Switch Test Failed	11/09/2015
		01502330	Circ Water Pump Lock-Outs May Not Function as Intended	11/18/2015
		01503230	Corrosion in PNL 71092, U2 TURB BLDG HI WTR LCL PNL	11/24/2015
		01515050	MV-32388 Leaks By Approx 150 GPM during SP 2158A	03/09/2016
		01554185	U2 CW Pump Trip Float Switches Susceptible to Grounding Out	03/28/2017
		01557932	Elevated Chemistry Parameter for 12 DDCLP Coolant	05/04/2017
		500001369056	NRC NCV - Emergency AC Power MSPI Indica	02/05/2013
		501000007131	D6 Lube Oil Cooler Eddy Current	01/10/2018
		501000009912	22 DD CLG PMP LEAK AT EXPANSION TANK	03/23/2018
		501000011414	22 DDCLP Jacket Coolant Impurities	04/30/2018
		501000018418	Breaker 112L-22	10/13/2018
		501000018979	MSIP 3000 Was Used Instead Of PE 4826	10/23/2018
		501000020694	Spring Pack Calibration Curve Suspect	12/04/2018
		501000035159	Minor Leak 21 CC HX South Channel Cover	11/29/2019
		501000041417	CS-49622 Flickering Green Light	06/10/2020
		501000043983	MIC: Acceptable Thinning Detected	09/14/2020
		501000048591	11 CC HX North End Bell Leak	02/10/2021
		501000049495	High d5 eng 2 Lube Oil psig	03/13/2021

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		501000057277	Small Leak from 22 CC HX	10/15/2021
		501000064451	MV-32195 Failed to Close during SP	07/04/2022
		501000064915	D5 -Eng1 and 2 on Demand Oil Change	07/22/2022
		501000065702	LR 2022 - Justification for PM Change	08/18/2022
		501000066936	PI Not Notified of SIL-652 Applicability	10/05/2022
		501000082686	MV-32038 Dual Indication	03/09/2024
		501000091600	22 DDCLP Coolant Excursion	10/25/2024
		501000092060	SP1168.4 CC System Pressure 11 CC HX	11/06/2024
		501000092533	12 DDCLP Low Jacket Water Temp Alarm	11/20/2024
		501000096051	Duplex Filter LO Hose Fitting Leak	03/11/2025
		601000002103	Replace Lube Oil Cooler Plug Seals	01/22/2020
		602000007547	H65.2.21, R1	10/24/2018
		603000001745	Ongoing Aging Management Activities - AMP Effectiveness Reviews	05/30/2018
		603000008216	2023 Ongoing Aging Management Activities - AMP Owner Annual Reviews	04/20/2023
		603000008861	2024 Ongoing Aging Management Activities - AMP Owner Annual Reviews	02/28/2024
		613000001620	Change MP 10011911 freq. from 2R to 3R	08/09/2019
		613000003006	Change freq MP 10011911 TP 1315 3R to 4R	07/14/2021
		613000003007	Change freq MP 10011534 TP 2315 3R to 4R	07/14/2021
		613000004825	One Time Deferral for 12 CC HX ECT	10/13/2024
		700040433	Replace Tubing on 22 DDCLP jckt exp tk	07/17/2019
	Corrective Action Documents Resulting from Inspection	501000096333	ARD 2025 PM 4910-17 WO Documentation	03/19/2025
		501000096363	ARD 2025 Screenhouse and TB Walkdown	03/20/2025
		501000096403	ARD 2025 Aux Building Walkdown	03/21/2025
		501000096506	ARD 2025 Relief Valve Leaking	03/25/2025
		501000096525	ARD 2025 D5 GMP SAC-003 WO 700071251	03/25/2025
		501000096530	ARD 2025 SP 1168.8 Needed Update	03/24/2025
		501000096537	ARD 2025 700108936 Missing Record	03/31/2025
		501000096555	ARD 2025 BKR 112L-22 Maintenance	03/26/2025
		501000096565	ARD 2025 Oil Leak onto 12 cc hx	03/26/2025

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		501000096567	ARD 2025 D5 GMP SAC-003 WO 700103871	03/26/2025
		501000096572	ARD 2025 Oil Leaking from CL-100-1	03/26/2025
		501000096573	2025 ARD 22 CC HX End Bell Corrosion	03/26/2025
		501000096577	ARD 2025 Late Responses to NRC Questions	03/26/2025
		501000096586	ARD 2025 Temporary Wire in CC HX Support	03/26/2025
		501000096589	Rust Noted on MV-32378 Gland Flange	03/26/2025
		501000096591	ARD 2025 Oil Leak onto 22 cc hx	03/26/2025
		501000096596	ARD 2025 Insulation Damage	03/27/2025
		501000096600	ARD 2025 Oil Leaking on 21 CC HX	03/26/2025
		501000096601	ARD 2025 Oil Leak from MV-32377	03/26/2025
		501000096602	ARD 2025 Wire and Camera on SR conduit	03/26/2025
		501000096606	ARD 2025 Record Retrieval Concern	03/27/2025
		501000096620	Yoke Stud and Nut Surface Rust	03/26/2025
		501000096646	ARD 2025 Expansion Boot	03/26/2025
		501000096668	NRC ARD MV-32038 QIM 501000020694	03/28/2025
		501000096681	ARD 2025 Record Quality	03/28/2025
		501000096691	NRC ARD: MP 10004446 Error in due Date	03/28/2025
		501000096697	ARD 2025 In-Service Engine 2 Oil Filter	03/28/2025
		501000096786	ARD 2025 71082 and 71092 PMs	04/02/2025
		501000096856	ARD 2025 Record Has Incorrect FLOC	04/03/2025
		501000096859	NRC ARD: Trace Anomaly in MV-32038 Diag	04/03/2025
		501000096861	ARD 2025: Q86 Response Inaccurate	04/03/2025
		501000096883	ARD 2025: No FLOC for CWP Relays	04/03/2025
		501000096896	ARD 2025: MRule Function CW-03 Update	04/03/2025
		501000096901	ARD 2025 CW Pump Trip Function Question	04/03/2025
		501000096941	ARD 2025: CWP Relay Classification	04/04/2025
		501000097016	ARD 2025 - IA Lubricant Content	04/08/2025
		501000097046	ARD 2025: FCU inlet MOV safety Class	04/09/2025
		501000097054	ARD 2025 MSIP 3000 for LR Cable Testing	04/09/2025
		501000097059	ARD 2025 - SA PM Questions	04/09/2025
		501000097084	2025 ARD Cable Tests	04/09/2025
		501000097087	ARD 2025 Trend in Use of N/A	04/09/2025
		501000097098	ARD 2025: CWP LVL SW PM Review	04/10/2025

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		501000097108	ARD 2025 Lubricating Oil Analysis Pgm	04/11/2025
		501000097161	ARD 2025 Cable Testing Acptnce Criteria	04/11/2025
		501000097564	ARD 2025 Delay in Providing Info to NRC	04/22/2025
		501000098217	ARD 2025 FP-PE-CBL-01	05/02/2025
		501000098221	ARD 2025 Additional Maint. Procedures	05/02/2025
		501000098406	ARD 2025 PCRs for PE 4825 and PE 4826	05/07/2025
		501000098551	ARD 2025 NA of Steps	05/09/2025
		501000098560	ARD 2025 Remove Equip Steps	05/09/2025
		501000098824	ARD 2025 BKR 112L-22 Maintenance PU&A	05/15/2025
	Drawings	NE-40005-45	11 Circulating Water Pump Bus 13 Cubicle 10	77
		NE-40008 Sheet 63	Motor Control Center 1LA Bus 1	CH
		NE-40405 Sheet 33	21 Circulating Water Pump Bus 23 Cubicle 3	76
		NE-40406 Sheet 41	Motor Control Center 2LA Bus 1	76
		NF-118246	Flow Diagram Lube Oil System D5 Unit 2	77
		NF-39216-1	Flow Diagram Cooling Water - Screenhouse Unit 1 & Unit 2	105
		NF-39216-3	Flow Diagram Cooling Water - Aux Bldg Unit 1	83
		NF-39216-3	Flow Diagram Cooling Water - Aux BLDG Unit 1	84A-1
		NF-39245-1	Flow Diagram Component Cooling System Unit 1	85
		NF-40037	480V Circuit Diagram Motor Control Center 1L, 1LA	76
		NF-40160-2	External Connections 4.16KV SWGR. Circulating Water System	A
		NF-40319-1	Interlock Logic Diagram Circulating Water System - Unit 1	76
		NF-40771-1	Interlock Logic Diagram Circulating Water System Unit 2	76
	Engineering Evaluations	500000334809	Condition Evaluation Performed Under CAP 501000096901	04/03/2025
	Miscellaneous	00520679 135-032	PINGP 1066 CL HX Internal Inspection	02/14/2018
		10002514	Maintenance Plan	0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		10011534	Maintenance Plan	07/25/2021
		10011911	Maintenance Plan	07/25/2021
		602000028876	Document Traveler for C47501-0104 Change	04/09/2025
		BES-89007	SACM Safeguard Diesel Generators D5 &D6	10/05/1989
		Bulletin: 46-116	External Float Cage Liquid Level Controls with Fabricated Steel Float Chambers	02/01/1980
		DBD SYS-14	Design Bases Document for the Component Cooling System	11
		DBD SYS-38A	Design Bases Document for the Emergency Diesel Generator System	8
		H.10.1.B	Prairie Island Inservice Testing Valve Data Sheet (MV-32388)	6
		LR-PN-DGHOSE	Diesel Generator Hose Replacements	0
		LR-SSR-114	Scoping and Screening Report for Diesel Generators and Support Systems	2
		LTR-PEP-08-35	Prairie Island Units 1&2 422+ Reload Transition Licensing Report	1
		M-870 Sheet 25-27	Fluor Daniel, Inc.	03/04/1988
		PMCR 613000004840	Butterfly MOV PGM Test - Freq. Increase	08/29/2024
		SOMS Narrative Log Search	21 DC Panel Ground	04/10/2025
		System: AA Administrative Functions & Plant Level Performance Criteria	Prairie Island Maintenance Rule Bases Document	11/14/2024
		XCEL-33-PI-1-04	Final Eddy Current Inspection Report of the Tubes in Component Cooling Water HX-12	10/26/2016
		XCEL-50-PI-01	Final Eddy Current Inspection Report of the D5 EDG Lube Oil Coolers	03/07/2019
		XH-2610-1364-1	SACM Diesel Engines Instruction Manual	A, F

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Procedures	2C20.7	D5/D6 Diesel Generators	59
		C47024	Alarm Response Procedure: Annunciator Location 47024-1101	44
		C47501	Alarm Response Procedure: Annunciator Location 47501-0104	30
		C50001	D5 Engine 1 Remote Alarm Responses	17
		C50003	D5 Engine 2 Remote Alarm Responses	18
		CY-ADMN-003	Strategic Water Chemistry Plan Open Cooling Water Systems	4
		CY-ADMN-004	Strategic Water Chemistry Plan Closed Cooling Water Systems	1
		CY-ADMN-104	Closed Cooling Water Systems Chemistry Guidelines	1
		FG-PA-HU-02	Equipment Positioning, Independent and Concurrent Verification Methods	1
		FP-E-MR-03	Maintenance Rule Monitoring	8
		FP-E-SE-02	Component Classification	19
		FP-E-SE-03	10CFR50.59 and 72.48 PROCESSES	5
		FP-E-SE-04	Conduct of Strategic Engineering	29
		FP-E-SE-05	Strategic Engineering Walkdowns	9
		FP-G-DOC-05	Fleet Writers Manual	29
		FP-MA-MOV-01	Motor Operated Valve Testing	2
		FP-PE-CBL-01	Cable Condition Monitoring Program	5
		FP-PE-MOV-07	Motor Operated Valve Program	10
		FP-PE-PM-01	Preventive Maintenance Program	28
		FP-PE-PMOG-01	Preventive Maintenance Oversight Group	1
		FP-PE-SW-01	SW/MIC Program	15
		FP-WM-SP-01	Fleet Surveillance Test Program	8
		GMP YUBA-001	CC Heat Exchanger Periodic Maintenance	10
		H21	Generic Letter 89-13 Implementing Program	30
		H32.2	Lubrication Sampling and Analysis Program	12
		H36	Plant Flooding	12
		H5	Motor Operated Valve Program	27
		H65	License Renewal Implementation and Aging Management	13

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Programs	
		H65.2.14	External Surfaces Monitoring Aging Management Program	8
		H65.2.21	Inaccessible Medium and Low Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Aging Management Program	1, 2, 4
		H65.2.24	Lubricating Oil Analysis Aging Management Program	5
		H65.2.31	Open-Cycle Cooling Water System Aging Management Program	14
		H65.2.9	Closed-Cycle Cooling Water System Aging Management Program	9
		MSIP 3000	Motor Megger	18
		MSIP 3033	Off-Line Motor Testing Using the PDMA Motor Tester	19
		PE 4825	Testing of Cables Rated Greater than 600 Volts	14
		PE 4826	Testing of Cables Rated Less Than 600 Volts	1, 5
		PE MCC-G7	MCC Electrical Preventive Maintenance for GE 7700 Line MCCS	19, 47
		SP 1304	Unit 1 Component Cooling Heat Exchanger Performance Test	10
		TP 1315	Unit 1 Circ Water Pumps Level Switches 18110, 18111, and 18112 Testing	1
		TP 2315	Unit 2 Circ Water Pumps Level Switches 18113, 18114, and 18115 Testing	0
	Self-Assessments	SAR 606000001693	10CFR 50.65 (a)(3) Periodic Assessment	04/01/2024
	Work Orders	00270322	PM 32378 13 FCU CL Inlet Isol MOV D70.1 PM	09/11/2009
		00361227	PM 3002-10-12 - 12 DDCLP Diesel Major Maint Activities	06/11/2015
		00362727	PE-212L-22 BREAKER ELECT 10YR PM MV-321	01/06/2014
		00362727	PE-212L-22 BREAKER ELECT 10YR PM MV-32197	12/13/2013
		00410210	OFF LINE TEST - MTR 221D (22 D6 DSL RN COOLING FAN MTR)	12/19/2012
		00410795	OFF LINE TEST - MTR 23-1 (121 SCRNWSH PMP)	06/24/2011
		00436526	CLBR: 135-032 PERFORM GMP YUBA-001	10/12/2017
		00455932	185-2, TEST CABLE PER PE 4826 FOR LICENSE	09/27/2012

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			RENEWAL	
		00455937	1AB1-20, TEST CABLE PER PE 4826 FOR LICENSE RENEWAL	11/15/2012
		00465930	ELEC: 185-2, TEST CABLE PER PE 4826	07/20/2016
		00500119	SP 1168.8 Cooling Water System Operating Pressure	11/20/2016
		00502140	Replace Duplex L.O. Filter Vent Hoses D5 EDG	07/24/2014
		00515321	TP 2315 - U2 CW PUMPS LEVEL SWITCHES TESTING	10/19/2016
		00520679	CLBR: 135-032 PERFORM GMP YUBA-001	05/09/2017
		00534766	IC: TS & REPAIR 18113, 18115, & 71092	10/28/2016
		0436526	PINGP 1066 CL HX Internal Inspection	10/23/2014
		0503539	MV-32197 Perform MOLR BKR 212L-22	05/25/2005
		600117726	PM 3001-1-D5, Perform D5 Inspection	09/12/2023
		7000013580	MV-32038 CL Dump MOV D70.1 PM	05/09/2019
		700005694	CORROSION IN PNL 71092, U2 TURB BLDG HI	04/09/2018
		700005716	SEAL CONDUIT OUTLET AT LS	03/16/2023
		700006223	SEAL CONDUIT OUTLET AT LS	12/19/2018
		700019820	TEST CABLE 221C-4 (UNDRGRD TO MCC 1AB2)	03/28/2018
		700019908	D5 E1, ECT A-SIDE, B-SIDE LO CLRS	03/08/2019
		700019954	D5 E2 ECT A-SIDE, B-SIDE LO CLRS	03/08/2019
		700020042	REPL D5 E2 LUB OIL TCV AND LO RLF VLVS	02/12/2018
		700022643	BKR 122L-21 BREAKER ELECT PM MV-32196	05/01/2018
		700024030	SP 1168.8 CL Sys Operating Press	07/19/2019
		700024256	PINGP 338: MCC Test Form	10/11/2018
		700024256	BKR 112L-22 BREAKER ELECT PM MV-32195	10/11/2018
		700024472	TEST CABLE 1AB1-20, MCC 1AB1 TO MV32031	10/04/2018
		700024472	TEST CABLE 1AB1-20, MCC 1AB1 TO MV32031	10/04/2018
		700025211	(BKR 222L-21) 2 PRZR PORV ISOL MV-32198	10/09/2019
		700025360	GMP YUBA-001 22 COMPONENT COOLING HX	10/11/2019
		700029744	SP 1168.4 CC SYS OPERAT PRESS TST CLASS 3	09/26/2020
		700032119	PM GMP SAC-003 - D5 DIESEL GEN INSPECT	03/12/2019
		700038100	Test Cable 1AB1-20, MCC 1ABA to MV32031	10/04/2024
		700045025	12DDCLP Change Eng Coolant	03/14/2019
		700045652	20040 - TURB BLDG MIC INSP	03/17/2021

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		700046140	SP 1168.8A CL AUX Operating Press Test	07/19/2019
		700051609	PM GMP SAC-003: D5 DSL GEN INSP	03/15/2021
		700053796	PM 3002-10-22 22 DDCLP Major Maint	07/26/2023
		700056258	22 DDCLP Heat Exchanger Clean and Insp	03/17/2020
		700056301	22 DDCLP Change Eng Coolant	03/18/2020
		700059134	22 DDCLP Diesel Minor Maint	03/18/2020
		700059186	Replace 121 MDFP Control Panel	04/16/2020
		700070049	MV-32378 13 FCU CL Inlet Lube	10/20/2021
		700071251	PM GMP SAC-003: D5 DSL GEN INSP	09/22/2023
		700073677	501000040177_Coolant Leak of 22 DDCL	11/22/2020
		700078596	D5 ENG #1 - REPL LUB OIL SYS HOSES	03/03/2025
		700078598	D5 ENG #2 - REPL LUB OIL SYS HOSES	03/03/2025
		700078972	CV-39916 REPL D5 ENG #1 LUB OIL THERM CV	08/18/2023
		700078973	CV-39917 REPL D5 E1 LUB OIL THERM CTRL	02/07/2023
		700079619	Line-4-CL Has MIC Thinning	10/12/2023
		700080646	SP 1304 UNIT I CC HX PERFORMANCE TEST	10/19/2022
		700086871	UNIT 2 LICENSE RENEWAL SYSTEMS WALKDOWNS	10/30/2023
		700088296	SP 2093 D5 DG SLOW START	01/03/2022
		700092735	SP 2334 D5 DG 24 HOUR LOAD TEST	05/02/2022
		700094125	SP 1168.8A CL AUX Operating Press Test	12/07/2022
		700094160	SP 1168.8 CL Sys Operating Press	03/27/2023
		700095493	SP 1 168,4 CC SYS OPERAT PRESS TST CLASS3	11/07/2024
		700097789	SP 2158A TRN A CTMT FCU Cooling Water QTR	11/18/2022
		700097858	SP 1158A TRN A CTMT FCU Cooling WTRQTR	11/18/2022
		700103871	PM GMP SAC-003: D5 DSL GEN INSP	03/23/2025
		700108125	TEST CBL 1AB2-20 (MCC 1AB2 TO CL HDR)	03/27/2023
		700108936	PM 3002-2-12 12 DDCLP Minor Maint	12/12/2022
		700109013	MV-32195 Failed to Close	11/16/2022
		700117803	SP 1106B 22 Diesel CL Pmp Mnthly	07/29/2023
		700118362	SP 1159 - Cooling Water Valves Quarterly	08/23/2024
		700118387	SP 1106A 12 Diesel CL Pmp Mnthly	08/18/2023
		700118671	SP 1304 UNIT I CC HX PERFORMANCE TEST	10/01/2024
		700119065	TP 1315 - U1 CW PMPS LVL SWES TEST	11/11/2024

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		700124127	22DDCLP Change Eng Coolant	03/21/2024
		700125792	PM 3002-2-12 12 DDCLP Minor Maint	03/08/2024
		700126244	SP 1106A 12 Diesel CL Pmp Mnthly	02/16/2024
		700126447	PM 3002-2-22: 22 DDCLP Minor Maint	03/25/2024
		700127259	REPL D5 E2 LUB OIL TCV AND LO RLF VLVS	03/17/2025
		700128102	PM 3001-1-D5, Perform D5 Inspection	05/14/2024
		700129412	SP 1155B - CC SYS QTR TEST TRN B	07/03/2024
		700130047	SP 2158A TRN A CTMT FCU Cooling WTR QTR	06/06/2024
		700133173	SP 1106B 22 Diesel CL Pmp Mnthly	03/23/2024
		700133712	SP 2295 D5 DG FAST START TEST	11/13/2024
		700134033	SP 1155B - CC SYS QTR TEST TRN B	09/17/2024
		700134655	SP 1302 11 AFW PMP Suction QTR Line Flush	11/14/2024
		700134900	SP 2302 21 AFWP Suction QTR Line Flush	09/30/2024
		700136093	U0 LR ONLINE SYSTEMS WALKDOWNS	03/21/2024
		700136148	SP 1159 - Cooling Water Valves Quarterly	11/14/2024
		700136300	SP2295 D5 Fast Start Test	01/13/2025
		700137175	SP 1155B - CC SYS QTR TEST TRN B	01/14/2025
		700137770	PM 3001-1-D5, Perform D5 Inspection	11/14/2024
		700138633	SP1302 11 AFW PMP SUCT QTR Line Flush	01/19/2025
		700138916	SP 2302 21 AFWP Suction QTR Line Flush	01/30/2025
		700140996	UNIT 1 LICENSE RENEWAL SYSTEMS WALKDOWNS	07/17/2024
		700141001	SP 1106A 12 Diesel CL Pmp Mnthly	11/14/2024
		700141518	SP 1006B 22 Diesel Cl Pmp Mnthly	11/29/2024
		95045	REPLACE HEATERS BKR 112L-22, MV- 32195	05/01/2006