



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, ILLINOIS 60532-4352

November 8, 2017

EA-17-192

Mr. Scott Northard
Site Vice President
Prairie Island Nuclear Generating Plant
Northern States Power Company, Minnesota
1717 Wakonade Drive East
Welch, MN 55089

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2—NRC
INTEGRATED INSPECTION REPORT 05000282/2017003 AND
05000306/2017003

Dear Mr. Northard:

On September 30, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Prairie Island Nuclear Generating Plant, Units 1 and 2. On October 5, 2017, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

Based on the results of this inspection, the NRC has identified one issue that was evaluated under the risk significance determination process as having very low safety significance (Green). The NRC has also determined that one violation is associated with this issue. Because the licensee entered the issue into the corrective action program (CAP), this violation is being treated as a Non-Cited Violation (NCV), consistent with Section 2.3.2 of the Enforcement Policy. The NCV is described in the subject inspection report. Further, the inspectors documented three licensee-identified violations that were determined to be of very low safety significance in this report. The NRC is treating these violations as NCVs consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violations or significance of these NCVs, 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 the Prairie Island Nuclear Generating Plant.

If you disagree with the cross-cutting aspect assignment or a finding not associated with a regulatory requirement 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 the 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 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Billy Dickson
Chief, Branch 2
Division of Reactor Projects, Region III

Docket Nos. 50-282; 50-306; 72-010
License Nos. DPR-42; DPR-60; SNM-2506

Enclosure:
IR 05000282/2017003; 05000306/20172003

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Letter to Scott Northard from Billy Dickson dated November 8, 2017

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2—NRC
INTEGRATED INSPECTION REPORT 05000282/2017003 AND
05000306/2017003

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-282; 50-306; 72-010
License Nos: DPR-42; DPR-60; SNM-2506

Report No: 05000282/2017003; 05000306/2017003

Licensee: Northern States Power Company, Minnesota

Facility: Prairie Island Nuclear Generating Plant, Units 1 and 2

Location: Welch, MN

Dates: July 1 through September 30, 2017

Inspectors: L. Haeg, Senior Resident Inspector
P. LaFlamme, Resident Inspector
P. Zurawski, Senior Resident Inspector, Monticello
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Approved by: B. Dickson, Chief
Branch 2
Division of Reactor Projects, Region III

Enclosure

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SUMMARY

Inspection Report 05000282/2017003; 05000306/2017003; 7/01/2017–9/30/2017; Prairie Island Nuclear Generating Plant, Units 1 and 2. Radiological Environmental Monitoring Program.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. One NRC-identified finding was identified during this inspection. The significance of inspection findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," dated April 29, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated November 1, 2016. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG–1649, "Reactor Oversight Process," July 2016.

NRC-Identified and Self-Revealed Findings

Cornerstone: Public Radiation Safety

Green. A finding of very-low safety significance, and an associated NCV of Technical Specification (TS) 5.4.1 was identified by the NRC inspectors for the failure to implement and maintain procedures to ensure adequate operation of a meteorological tower. The licensee entered this issue into their Corrective Action Program (CAP) as CAP 501000001091, dated July 27, 2017. The licensee had initiated efforts to assess and remove unnecessary vegetation growth.

The inspectors determined that the performance deficiency was more-than-minor in accordance with IMC 0612, Appendix B, "Issue Screening," because the finding impacted the Plant Facilities/Equipment and Instrumentation Attribute of the Public Radiation Safety Cornerstone, and adversely affected the cornerstone objective of ensuring adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. Specifically, existing meteorological tower procedures did not include the assessment and subsequent removal of trees that could impair the correct operation of sensors located at the 10 meter elevation of the tower. The finding was determined to be of very-low safety significance in accordance with IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," dated February 12, 2008. The violation was of very-low safety significance (Green) because: it was not a failure to implement the Effluent Program, nor did public dose exceed Appendix I or Title 10 of the *Code of Federal Regulations* (CFR), Part 20.1301(e) criteria. The inspectors concluded that the most significant contributing cause of the performance deficiency involved the Resolution cross cutting component in the area of problem identification and resolution because this issue was previously entered into the licensee's CAP in 2015 and closed with no action taken. [P.3] (Section 2RS7.1)

Licensee Identified Violations

Three violations of very low safety or security significance or Severity Level IV that were identified by the licensee have been reviewed by the NRC. Corrective actions taken or planned by the licensee have been entered into the licensee's CAP. The violations and CAP tracking numbers are documented in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 1 operated at full power for the duration of the inspection period with the exception of a brief down power evolution to approximately 42 percent power on September 26, 2017 to perform surveillance testing activities. Unit 1 was returned to full power on September 28, 2017, and remained at full power for the remainder of the inspection period.

Unit 2 began the inspection period at full power. On September 18, 2017, Unit 2 power was reduced to 7 percent to remove the main turbine from service to repair a turbine lubricating oil leak. Unit 2 was returned to full power on September 20, 2017, and remained at full power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- 122 Safeguards Chilled Water System (SCWS);
- Unit 1 and Unit 2 Safeguards Bus 112 and 122 480V Systems; and
- Unit 1 and Unit 2 Event Monitoring System.

The inspectors selected these systems based on their risk significance relative to the Reactor Safety Cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, Updated Safety Analysis Report (USAR), TS requirements, outstanding work orders (WOs), CAP documents, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

These inspections constituted three partial system walkdown samples as defined in IP 71111.04-05.

b. Findings

No findings were identified.

.2 Semiannual Complete System Walkdown

a. Inspection Scope

During the week of September 11–15, 2017, the inspectors performed a complete system alignment inspection of the Unit 2 D6 Emergency Diesel Generator (EDG) system to verify the functional capability of the system. This system was selected because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment lineups; electrical power availability; system configuration, as appropriate; component labeling; component and equipment cooling; hangers and supports; operability of support systems; and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding WOs was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the CAP database to ensure that system equipment alignment problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one complete system walkdown sample as defined in IP 71111.04–05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

The inspectors conducted fire protection walkdowns which were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- Fire Area 11; Unit 1 Control Rod Drive Room;
- Fire Area 122; Unit 2 480V Bus 221/222 Room;
- Fire Area 124; Unit 2 D6 Radiator Fan Room; and
- Fire Areas 58 & 73; Units 1 and 2 Auxiliary Building.

The inspectors reviewed these areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, maintained passive fire protection features in good material condition, and implemented adequate compensatory measures for out-of-service, degraded or inoperable fire protection equipment, systems, or features in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as

documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to impact equipment which could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the Attachment to this report, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's CAP. Documents reviewed are listed in the Attachment to this report.

These inspections constituted four quarterly fire protection inspection samples as defined in IP 71111.05–05.

b. Findings

No findings were identified.

1R06 Flooding (71111.06)

.1 Internal Flooding

a. Inspection Scope

The inspectors reviewed selected risk important plant design features and licensee procedures intended to protect the plant and its safety-related equipment from internal flooding events. The inspectors reviewed flood analyses and design documents, including the USAR, engineering calculations, and abnormal operating procedures to identify licensee commitments. The specific documents reviewed are listed in the Attachment to this report. In addition, the inspectors reviewed licensee drawings to identify areas and equipment that may be affected by internal flooding caused by the failure or misalignment of nearby sources of water, such as the fire suppression or the circulating water systems. The inspectors also reviewed the licensee's corrective action documents with respect to past flood-related items identified in the corrective action program to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the following plant area to assess the adequacy of watertight doors and verify drains and sumps were clear of debris and were operable, and that the licensee complied with its commitments:

- Auxiliary Building 695' Elevation.

Documents reviewed during this inspection are listed in the Attachment to this report.

This inspection constituted one internal flooding sample as defined in IP 71111.06–05.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review of Licensed Operator Requalification (71111.11Q)

a. Inspection Scope

On September 19, 2017, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification training. The inspectors verified that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and that training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of abnormal and emergency procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly licensed operator requalification program simulator sample as defined in IP 71111.11-05.

b. Findings

No findings were identified.

.2 Resident Inspector Quarterly Observation during Periods of Heightened Activity or Risk (71111.11Q)

a. Inspection Scope

On September 20, 2017, the inspectors observed control room operators during Unit 2 low power operations and power ascension activities following turbine lube oil system leak repairs. This was an activity that required heightened awareness or was related to increased risk. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions.

The performance in these areas was compared to pre-established operator action expectations, procedural compliance, and task completion requirements. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly licensed operator heightened activity/risk sample as defined in IP 71111.11–05.

b. Findings

No findings were identified.

.3 Biennial Review (71111.11B)

a. Inspection Scope

The following inspection activities were conducted during the weeks of August 21 and August 28, 2017, to assess: (1) the effectiveness and adequacy of the facility licensee's implementation and maintenance of its systems approach to training (SAT) based Licensed Operator Requalification Training (LORT) Program, put into effect to satisfy the requirements of 10 CFR 55.59; (2) conformance with the requirements of 10 CFR 55.46 for use of a plant referenced simulator to conduct operator licensing examinations and for satisfying experience requirements; and (3) conformance with the operator license conditions specified in 10 CFR 55.53. The documents reviewed are listed in the Attachment to this report.

- Licensee Requalification Examinations (10 CFR 55.59(c); SAT element 4 as defined in 10 CFR 55.4): The inspectors reviewed the licensee's program for development and administration of the LORT biennial written examination and annual operating tests to assess the licensee's ability to develop and administer examinations that are acceptable for meeting the requirements of 10 CFR 55.59(a).
 - The inspectors conducted a detailed review of one biennial requalification written examination versions to assess content, level of difficulty, and quality of the written examination materials. (02.03)
 - The inspectors conducted a detailed review of 10 job performance measures and 4 simulator scenarios to assess content, level of difficulty, and quality of the operating test materials. (02.04)
 - The inspectors observed the administration of the annual operating test and biennial written examination to assess the licensee's effectiveness in conducting the examination(s), including the conduct of pre-examination briefings, evaluations of individual operator and crew performance, and post-examination analysis. The inspectors evaluated the performance of two crews in parallel with the facility evaluators during two (each) dynamic simulator scenarios, and evaluated various licensed crew members concurrently with facility evaluators during the administration of several job performance measures. (02.05)
 - The inspectors assessed the adequacy and effectiveness of the remedial training conducted since the last requalification examinations and the training planned for the current examination cycle to ensure that they addressed weaknesses in licensed operator or crew performance identified during

training and plant operations. The inspectors reviewed remedial training procedures and individual remedial training plans. (02.07)

- Conformance with Examination Security Requirements (10 CFR 55.49): The inspectors conducted an assessment of the licensee's processes related to examination physical security and integrity (e.g., predictability and bias) to verify compliance with 10 CFR 55.49, "Integrity of Examinations and Tests." The inspectors reviewed the facility licensee's examination security procedure, and observed the implementation of physical security controls (e.g., access restrictions and simulator input/output controls) and integrity measures (e.g., security agreements, sampling criteria, bank use, and test item repetition) throughout the inspection period. (02.06)
- Conformance with Operator License Conditions (10 CFR 55.53): The inspectors reviewed the facility licensee's program for maintaining active operator licenses and to assess compliance with 10 CFR 55.53(e) and (f). The inspectors reviewed the procedural guidance and the process for tracking on-shift hours for licensed operators, and which control room positions were granted watch-standing credit for maintaining active operator licenses. Additionally, medical records for 10 licensed operators were reviewed for compliance with 10 CFR 55.53(l). (02.08)
- Conformance with Simulator Requirements Specified in 10 CFR 55.46: The inspectors assessed the adequacy of the licensee's simulation facility (simulator) for use in operator licensing examinations and for satisfying experience requirements. The inspectors reviewed a sample of simulator performance test records (e.g., transient tests, malfunction tests, scenario based tests, post-event tests, steady state tests, and core performance tests), simulator discrepancies, and the process for ensuring continued assurance of simulator fidelity in accordance with 10 CFR 55.46. The inspectors reviewed and evaluated the discrepancy corrective action process to ensure that simulator fidelity was being maintained. Open simulator discrepancies were reviewed for importance relative to the impact on 10 CFR 55.45 and 55.59 operator actions as well as on nuclear and thermal hydraulic operating characteristics. (02.09)
- Problem Identification and Resolution (10 CFR 55.59(c); SAT element 5 as defined in 10 CFR 55.4): The inspectors assessed the licensee's ability to identify, evaluate, and resolve problems associated with licensed operator performance (a measure of the effectiveness of its LORT Program and their ability to implement appropriate corrective actions to maintain its LORT Program up to date). The inspectors reviewed documents related to licensed operator performance issues (e.g., recent examination and inspection reports including cited and non-cited violations; NRC End of Cycle and Mid-Cycle reports; NRC plant issues matrix; licensee event reports (LERs); licensee condition/problem identification reports including documentation of plant events and review of industry operating experience). The inspectors also sampled the licensee's quality assurance oversight activities, including licensee training department self-assessment reports. (02.10)

This inspection constituted one biennial licensed operator requalification program inspection sample as defined in IP 71111.11-05.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations (71111.12Q)

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk-significant systems:

- 12 Residual Heat Removal (RHR) Pump Unavailability Criteria Exceeded.

The inspectors reviewed events such as where ineffective equipment maintenance had resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and components (SSCs)/functions classified as (a)(2), or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

The inspectors also performed a quality review for the maintenance and test/calibration history of the D5 and D6 EDGs as discussed in IP 71111.12, Section 02.02.

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

These activities constituted one quarterly maintenance effectiveness sample and one quality control review sample as defined in IP 71111.12-05.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

.1 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- 121 Safeguards Chill Water System and 2N42 Nuclear Instrument Maintenance and Repair Activities;
- D6 Lockout During Monthly Surveillance Test; and
- Unrecognized TS Implications with 121 Safeguards Chilled Water System (SCWS) Out of Service.

These activities were selected based on their potential risk significance relative to the Reactor Safety Cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed TS requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Documents reviewed during this inspection are listed in the Attachment to this report.

These inspections constituted three maintenance risk assessment and emergent work control samples as defined in IP 71111.13–05.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- CAP 50100000361; Error in Prairie Island Spent Fuel Pool Criticality Analysis;
- CAP 501000001068; 12 Component Cooling Water Pump Inboard Seal Oil Leakage Evaluation;
- CAP 501000000621; 121 Control Room Chiller Prompt Operability;
- CAP 501000001861; R-48/R-49 Concerns; and
- CAP 501000002635; Steam Leakage at Governor Valve (11 Turbine Driven Auxiliary Feedwater Pump).

The inspectors selected these potential operability issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TS and USAR to the licensee's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment to this report.

These inspections constituted five operability evaluation samples as defined in IP 71111.15-05.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

.1 Plant Modifications

a. Inspection Scope

The inspectors reviewed a temporary modification associated with 10 CFR 50.59 Screening 5439; "Bypass D6 Crankcase Pressure Trips to Support Operations"; Revision 2.

The inspectors reviewed the configuration changes and associated 10 CFR 50.59 safety evaluation screening against the design basis, the USAR, and the TS, as applicable, to verify that the modification did not affect the operability or availability of the affected system. The inspectors, as applicable, observed ongoing and completed work activities to ensure that the modifications were installed as directed and consistent with the design control documents; the modifications operated as expected; post-modification testing adequately demonstrated continued system operability, availability, and reliability; and that operation of the modifications did not impact the operability of any interfacing systems. As applicable, the inspectors verified that relevant procedure, design, and licensing documents were properly updated. Lastly, the inspectors discussed the plant modification with operations, engineering, and training personnel to ensure that the individuals were aware of how the operation with the plant modification in place could impact overall plant performance. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one plant modification sample as defined in IP 71111.18-05.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed the following post-maintenance (PM) activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- 2N42 Unit 2 Nuclear Instrument Isolation Amplifier Replacement and Testing;
- 121 SCWS Compressor Repair and Testing;
- 121 SCWS Pump Malfunction Troubleshooting and Testing;
- D5 EDG Following 2-Year Maintenance Window; and
- D2 EDG Jacket Water Coolant Leak.

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and test documentation was properly evaluated. The inspectors evaluated the activities against TSS, the USAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

These inspections constituted five post-maintenance testing samples as defined in IP 71111.19-05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

.1 Surveillance Testing

a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- SP 1005; Nuclear Instrumentation System Power Range Daily Calibration (Routine);
- SP 1037; Unit 1 Monthly Turbine Overspeed Trip Test (Routine);
- SP 1106A; 12 Diesel Driven Cooling Water Pump Monthly Test (Routine);
- SP 1006B; Nuclear Instrumentation System Power Range Axial Offset Calibration (Routine); and
- SP 1305; D2 Monthly Surveillance Test (IST).

The inspectors observed in-plant activities and reviewed procedures and associated records to determine the following:

- did preconditioning occur;
- the effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis;
- plant equipment calibration was correct, accurate, and properly documented;
- as-left setpoints were within required ranges; and the calibration frequency was in accordance with TSs, the USAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;
- where applicable for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers code, and reference values were consistent with the system design basis;
- where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable;
- where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure;
- where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished;
- prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;
- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

These inspections constituted four routine surveillance testing samples and one in-service test sample as defined in IP 71111.22, Sections–02 and–05.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency preparedness drill on September 21, 2017, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the technical support center to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

This inspection constituted one emergency preparedness drill inspection sample as defined in IP 71114.06–06.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2RS7 Radiological Environmental Monitoring Program (71124.07)

.1 Site Inspection (02.02)

a. Inspection Scope

The inspectors walked down select air sampling stations and dosimeter monitoring stations to determine whether they were located as described in the Offsite Dose Calculation Manual (ODCM) and to determine the equipment material condition.

The inspectors reviewed calibration and maintenance records for select air samplers, dosimeters, and composite water samplers to evaluate whether they demonstrated adequate operability of these components.

The inspectors assessed whether the licensee had initiated sampling of other appropriate media upon loss of a required sampling station.

The inspectors observed the collection and preparation of environmental samples from select environmental media to determine if environmental sampling was representative

of the release pathways specified in the ODCM and if sampling techniques were in accordance with procedures.

The inspectors assessed whether the meteorological instruments were operable, calibrated, and maintained in accordance with guidance contained in the USAR, NRC Regulatory Guide 1.23, "Meteorological Monitoring Programs for Nuclear Power Plants," and licensee procedures. The inspectors assessed whether the meteorological data readout and recording instruments were operable.

The inspectors evaluated whether missed and/or anomalous environmental samples were identified and reported in the Annual Environmental Monitoring Report. The inspectors selected events that involved a missed sample, inoperable sampler, lost dosimeter, or anomalous measurement to determine if the licensee had identified the cause and had implemented corrective actions. The inspectors reviewed the licensee's assessment of any positive sample results and reviewed any associated radioactive effluent release data that was the source of the released material.

The inspectors selected structures, systems, or components that involve or could reasonably involve a credible mechanism for licensed material to reach ground water, and assessed whether the licensee had implemented a Sampling and Monitoring Program sufficient to detect leakage to ground water.

The inspectors evaluated whether records important to decommissioning, as required by 10 CFR, Part 50.75(g), were retained in a retrievable manner.

The inspectors reviewed any significant changes made by the licensee to the ODCM as the result of changes to the land census, long-term meteorological conditions, or modifications to the sampler stations since the last inspection. The inspectors reviewed technical justifications for any changed sampling locations to evaluate whether the licensee performed the reviews required to ensure that the changes did not affect its ability to monitor the impacts of radioactive effluent releases on the environment.

The inspectors assessed whether the appropriate detection sensitivities with respect to the ODCM were used for counting samples. The inspectors reviewed the Quality Control Program for analytical analysis.

The inspectors reviewed the results of the licensee's Interlaboratory Comparison Program to evaluate the adequacy of environmental sample analyses performed by the licensee. The inspectors assessed whether the interlaboratory comparison test included the media/nuclide mix appropriate for the facility. The inspectors reviewed the licensee's determination of any bias to the data and the overall effect on the Radiological Environmental Monitoring Program (REMP).

This inspection constituted one REMP sample as defined in IP 71124.07-05.

b. Findings

(1) Failure to Ensure Correct Operation of Meteorological Tower

Introduction: An NRC-identified finding of very-low safety significance (Green) and associated NCV of TS 5.4.1 was identified for the failure to implement and maintain procedures to ensure adequate operation of the meteorological tower. Specifically, the

licensee failed to implement and maintain procedures that included the assessment and when necessary, removal of vegetation to ensure correct operation of the meteorological tower.

Description: The inspectors performed walkdowns of the meteorological tower during the week of July 24, 2017. Meteorological data is a parameter in the calculation of radiation dose received by the public during both normal operation and during potential accident conditions. The inspectors observed trees in close proximity to the tower. Trees may interfere with operation of the tower by changing wind conditions (wind speed and wind direction) resulting in reported data that may not be indicative of actual meteorological data. The concern is for the sensors located at 10 meters in height on the tower. The NRC provides guidance to licensees in the form of Regulatory Guides. These Regulatory Guides provide approved method(s) but not required methods to perform various tasks. Regulatory Guide 1.23., "Meteorological Monitoring Programs for Nuclear Power Plants," Revision 1, states in part, "Whenever possible, wind measurements should be made at locations and heights that avoid airflow modifications by obstructions such as large structures, trees, and nearby terrain. The sensors should be located over level, open terrain at a distance of at least 10 times the height of any nearby obstruction if the height of the obstruction exceeds one-half the height of the wind measurement. Wind sensors should be located on top of the measurement tower or mast or extended outward on a boom to reduce airflow modification and turbulence induced by the supporting structure itself."

Additionally, ANSI/ANS-2.5-1984, "Standard for Determining Meteorological Information at Nuclear Power Sites," also provides information on the siting of meteorological instrumentation. This information contains criteria for the evaluation of potential obstructions. The licensee could have used the guidance in Regulatory Guide 1.23 or evaluated other potential methods such as ANSI/ANS-2.5-1984 or other methods for the establishment of a maintenance program on the meteorological tower. The inspectors reviewed procedures that governed the tower operation and maintenance. These procedures did not contain references for the assessment and when necessary, the removal of vegetation. The licensee did not establish procedure(s) to ensure the correct operation of the tower. On Friday, July 28, 2017, the licensee began the assessment and subsequent removal of vegetation to ensure correct operation of the 10 meter sensors on the tower.

Analysis: The inspectors determined that the failure to implement and maintain procedures that included the assessment and when necessary, removal of vegetation to ensure correct operation of the meteorological tower was within the licensee's ability to foresee and correct and should have been prevented, and therefore constituted a performance deficiency. The performance deficiency was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue Screening", because the finding impacted the program and process attribute and areas to measure procedures (meteorological program) of the Public Radiation Safety Cornerstone, and adversely affected the cornerstone objective of ensuring adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. Specifically, during the week of July 24, 2017, the inspectors observed trees in proximity to the meteorological tower, a condition that could have impacted the correct operation of sensor(s) that measured wind direction and wind speed at the 10 meter elevation of the tower. The finding was determined to be of very-low safety significance in accordance with IMC 0609,

Appendix D, "Public Radiation Safety Significance Determination Process," dated February 12, 2008. The violation was of very-low safety significance (Green) because it was not a failure to implement the Effluent Program, nor did public dose exceed Appendix I or 10 CFR 20.1301(e) criteria.

The inspectors concluded that the most significant contributing cause of the performance deficiency involved the Resolution cross-cutting component in the area of problem identification and resolution because this issue was previously entered into the licensee's CAP in 2015 and closed with no action taken. [P.3]

Enforcement: TS 5.4.1 states in part that, "Written procedures or instructions shall be established, implement and maintained covering the following activities: the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978", Section 7, addresses, "Procedures for Control of Radioactivity (For limiting materials released to environment and limiting personnel exposure)," and Section 7h, addresses, "Meteorological Monitoring."

Contrary to the above, prior to July 28, 2017, the licensee failed to establish a procedure to address the requirements of Regulatory Guide 1.33, Appendix A, Section 7h. Specifically, the procedure failed to include provisions for the assessment and when necessary, removal of vegetation to ensure the correct operation of the tower. Because this violation was of very-low safety significance and was entered into the licensee's CAP as CAP 501000001091, this violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy. **(NCV 05000282/2017003-01; 05000306/2017003-01; Failure to Ensure Correct Operation of Meteorological Tower)**

.2 Groundwater Protection Initiative Implementation (02.03)

a. Inspection Scope

The inspectors reviewed monitoring results of the groundwater protection initiative to evaluate whether the licensee had implemented the program as intended and to assess whether the licensee had identified and addressed anomalous results and missed samples.

The inspectors evaluated the licensee's implementation of the minimization of contamination and survey aspects of the groundwater protection initiative and the Decommissioning Planning Rule requirements in 10 CFR 20.1406 and 10 CFR 20.1501.

The inspectors reviewed leak and spill events and 10 CFR 50.75 (g) records and assessed whether the source of the leak or spill was identified and appropriately mitigated.

The inspectors assessed whether unmonitored leaks and spills were evaluated to determine the type and amount of radioactive material that was discharged. The inspectors assessed whether the licensee completed offsite notifications in accordance with procedure.

The inspectors reviewed evaluations of discharges from onsite contaminated surface water bodies and the potential for ground water leakage from them. The inspectors

assessed whether the licensee properly accounted for these discharges as part of the Effluent Release Reports.

The inspectors assessed whether onsite ground water sample results and descriptions of any significant onsite leaks or spills into ground water were documented in the Annual Radiological Environmental Operating Report or the Annual Radiological Effluent Release Report.

The inspectors determined if significant new effluent discharge points were updated in the ODCM and the assumptions for dose calculations were updated as needed.

This inspection constituted one groundwater protection initiative implementation sample as defined in IP 71124.07–05.

b. Findings

No findings were identified

.3 Problem Identification and Resolution (02.04)

a. Inspection Scope

The inspectors assessed whether problems associated with the REMP were being identified by the licensee at an appropriate threshold and were properly addressed for resolution. The inspectors assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee that involved the REMP.

This inspection constituted one REMP PI&R sample as defined in IP 71124.07–05.

b. Findings

No findings were identified.

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation (71124.08)

.1 Radioactive Waste System Walk-down (02.03)

a. Inspection Scope

The inspectors reviewed administrative and/or physical controls to assess whether equipment which is not in service or abandoned in place would not contribute to an unmonitored release path and/or affect operating systems or be a source of unnecessary personnel exposure. The inspectors assessed whether the licensee reviewed the safety significance of systems and equipment abandoned in place in accordance with 10 CFR 50.59.

The inspectors selected processes for transferring radioactive waste resin and/or sludge discharges into shipping/disposal containers and assessed whether the waste stream mixing, sampling, and waste concentration averaging were consistent with the process control program, and provided representative samples of the waste product for the purposes of waste classification.

These inspection activities supplemented those documented in Inspection Report 05000282/2017001; 05000306/2017001 and constituted one complete radioactive waste system sample as defined in IP 71124.08–05.

b. Findings

No findings were identified.

.4 OTHER ACTIVITIES

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Security

4OA1 Performance Indicator Verification (71151)

.2 Reactor Coolant System Leakage

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system (RCS) leakage performance indicator (PI), Units 1 and 2, for the period from the third quarter of 2016 through the second quarter of 2017. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained within Nuclear Energy Institute (NEI) Document 99–02, “Regulatory Assessment Performance Indicator Guideline,” Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee’s operator logs, RCS leakage tracking data, CAP reports, event reports and NRC Integrated Inspection Reports for the period of July 1, 2016, through June 30, 2017, to validate the accuracy of the submittals. The inspectors also reviewed the licensee’s CAP database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two RCS leakage PI samples as defined in IP 71151–05.

b. Findings

No findings were identified.

.3 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors sampled licensee submittals for the RCS specific activity PI, Units 1 and 2, for the period from the third quarter 2016 through the second quarter 2017. The inspectors used PI definitions and guidance contained within NEI Document 99–02, “Regulatory Assessment Performance Indicator Guideline,” Revision 7, dated August 2013, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee’s RCS chemistry samples, TS requirements, CAPs, event reports and NRC Integrated Inspection Reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee’s CAP database to determine if any problems had been identified with the PI data collected or

transmitted for this indicator. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a RCS sample. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two RCS specific activity PI samples as defined in IP 71151-05.

b. Findings

No findings were identified.

.4 Radiological Effluent Technical Specification/Offsite Dose Calculation Manual
Radiological Effluent Occurrences

a. Inspection Scope

The inspectors sampled licensee submittals for the Radiological Effluent Technical Specification/ODCM radiological effluent occurrences PI for the period from the third quarter 2016 through the second quarter 2017. The inspectors used PI definitions and guidance contained within NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 2013, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's CAP and selected individual reports generated since this indicator was last reviewed to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose. The inspectors reviewed gaseous effluent summary data and the results of associated offsite dose calculations for selected dates to determine if indicator results were accurately reported. The inspectors also reviewed the licensee's methods for quantifying gaseous and liquid effluents and determining effluent dose. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one Radiological Effluent Technical Specification/ODCM radiological effluent occurrences PI sample as defined in IP 71151-05.

b. Findings

No findings were identified.

40A2 Identification and Resolution of Problems (71152)

.1 Routine Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify they were being entered into the licensee's corrective action program at an appropriate threshold, adequate attention was being given to timely corrective actions, and adverse trends were identified and addressed. Some minor issues were entered into the licensee's corrective action program as a result of the inspectors' observations; however, they are not discussed in this report.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure they were considered an integral part of the inspections performed during the quarter.

b. Findings

No findings were identified.

.2 Annual Follow-up of Selected Issues: D6 EDG Lockout During Surveillance Testing

a. Inspection Scope

The inspectors selected the following CAP issue for in-depth review:

- Root Cause Evaluation 50100000712; "D6 Diesel Lockout during Surveillance Procedure 2305". The inspectors selected this sample due to the potential for past operability implications due to the failure of the D6 EDG to run during surveillance testing.

As appropriate, the inspectors verified the following attributes during their review of the licensee's corrective actions for the above root cause evaluation and other related CAP documents:

- complete and accurate identification of the problem in a timely manner commensurate with its safety significance and ease of discovery;
- consideration of the extent of condition, generic implications, common cause, and previous occurrences;
- evaluation and disposition of operability/functionality/reportability issues;
- classification and prioritization of the resolution of the problem commensurate with safety significance;
- identification of the root and contributing causes of the problem; and
- identification of corrective actions, which were appropriately focused to correct the problem;
- completion of corrective actions in a timely manner commensurate with the safety significance of the issue;
- effectiveness of corrective actions taken to preclude repetition; and
- evaluate applicability for operating experience and communicate applicable lessons learned to appropriate organizations.

The inspectors discussed the corrective actions and associated evaluations with licensee personnel.

This inspection constituted one in-depth problem identification and resolution inspection sample as defined in IP 71152.

b. Observations and Assessments

The inspectors reviewed the root cause evaluation, applicable operating experience, vendor information, prior CAP history, and forensic analysis associated with the cause of the lockout (high crankcase pressure transducer fastener fretting wear and loosened fasteners resulting in a spurious engine trip and lockout of the D6 EDG). The inspectors determined that the licensee's evaluation was thorough, corrective actions to preclude

repetition were appropriate for the circumstances, and no performance deficiency was identified based on no firm evidence that the discrepancy existed prior to the discovery during surveillance testing.

c. Findings

No findings were identified.

4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) Licensee Event Report 05000282/2016-001-00: Unanalyzed Condition Due to Non-Compliant Fire Protection Manual Operator Actions

a. Inspection Scope

The inspectors reviewed information provided by the licensee regarding the December 21, 2015, identification of several motor-operated valves (MOVs) that could be rendered unavailable for manual operation following a postulated fire in the control or relay rooms. Specifically, during a National Fire Protection Association (NFPA) 805 transition process review of calculation ENG-ME-353, "Mechanical MOV Analysis to Support IN 92-18 Response," Revision 1, the licensee identified seventeen safe shutdown-credited MOVs that, following a postulated fire in the control or relay rooms, could have become unavailable due to hot shorting of the MOV torque or limit switches. This, in turn, could have resulted in damage to the valve(s) during operation and ultimately in the inability to manually operate the valve(s) post-fire to achieve and maintain safe shutdown. The licensee documented the issue in CAP 1506561, determined that the issue represented an unanalyzed condition, and immediately implemented compensatory measures in the form of hourly fire watches.

The inspectors reviewed the fire protection program documents and calculations, licensee CAPs, the apparent cause evaluation, immediate corrective actions (hourly fire watches), and longer term corrective actions. Enforcement aspects of this LER are discussed in Section 4OA7. Documents reviewed are listed in the Attachment to this report. This LER is closed.

This activity constituted one event follow-up sample as defined in IP 71153-05.

b. Findings

One finding and NCV for which the NRC exercised enforcement discretion was identified during the review of this LER. The inspectors determined that the finding and NCV associated with the unanalyzed condition was best characterized as a licensee-identified finding and violation. As a result, the inspectors documented information regarding this issue in Section 4OA7 of this inspection report.

4OA6 Management Meetings

.1 Exit Meeting Summary

On October 5, 2017, the inspectors presented the inspection results to Mr. S. Northard, Site Vice President, and other members of the licensee's staff. The licensee

acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

.2 Interim Exit Meetings

Interim exits were conducted for:

- On September 1, 2017, the inspectors presented the inspection results of the LORT biennial review inspection to Mr. S. Northard, Site Vice President, and other members of the licensee's staff. The licensee acknowledged the issues presented.
- On July 28, 2017, and via teleconference on September 29, 2017, the inspector presented the inspection results for the REMP inspection to Mr. W. Paulhardt, Plant Manager, and other members of the licensee's staff. The licensee acknowledged the issues presented.

The inspectors confirmed that none of the potential report input discussed was considered proprietary. Proprietary material received during the inspection was returned to the licensee.

40A7 Licensee-Identified Violations

The following violations of very low significance (Green) were identified by the licensee and are violations of NRC requirements which meet the criteria of the NRC Enforcement Policy for being dispositioned as NCVs.

- Title 10 CFR 50.48(b)(2) requires, in part, that all nuclear power plants licensed to operate before January 1, 1979, must satisfy the applicable requirements of Appendix R to this part, including specifically the requirements of Sections III.G, III.J, and III.O. Appendix R, Section III.G.3 of 10 CFR Part 50, requires, in part, that alternative or dedicated shutdown capability and its associated circuits, independent of cables, systems or components in the area, room, or zone under consideration should be provided where the protection of systems whose function is required for hot shutdown does not satisfy the requirement of paragraph G.2 of this section. In addition, fire detection and a fixed fire suppression system shall be installed in the area, room, or zone under consideration.

Contrary to the above, on December 21, 2015, the licensee failed to provide an alternative or dedicated shutdown capability for 17 MOVs credited in the licensee's Appendix R Safe Shutdown Analysis that did not satisfy the requirements of 10 CFR Part 50, Appendix R, Section G.2. Specifically the MOVs could have been rendered unavailable for manual operator action following a postulated fire in the control or relay rooms. These manual actions were required to achieve and maintain safe shut down in the event of a fire that resulted in functional loss and/or evacuation of the control and/or relay rooms.

Section 9.1 of the NRC Enforcement Policy allows the NRC to exercise enforcement discretion for certain fire protection related non compliances identified as a result of a licensee's transition to the new risk informed, performance based fire protection approach included in 10 CFR 50.48(c), and for

certain existing non compliances that reasonably may be resolved by compliance with 10 CFR 50.48(c) as long as certain criteria are met. This risk informed, performance based approach is referred to as National Fire Protection Association (NFPA) 805, “Performance Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants.”

At the time of discovery, the licensee was in transition to NFPA 805 and therefore the licensee-identified violation was evaluated in accordance with the criteria established by Section 9.1(a) of the NRC’s Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48) for a licensee in NFPA 805 transition. The inspectors determined that for this violation: (1) the licensee identified the violation during the scheduled transition to 10 CFR 50.48(c); (2) the licensee had established adequate compensatory measures within a reasonable time frame following identification and would correct the violation as a result of completing the NFPA 805 transition; (3) the violation was not likely to have been previously identified by routine licensee efforts; and (4) the violation was not willful. The finding also met additional criteria established in section 12.01.b of IMC 0305, “Operating Assessment Program.” In addition, in order for the NRC to consider granting enforcement discretion the violation must not be associated with a finding of high safety significance (i.e., Red).

The licensee performed risk evaluation V.SPA.16.001, Revision 0, dated March 27, 2017, and determined that this issue was not associated with a finding of high safety significance. A Region III Senior Reactor Analyst (SRA) reviewed the evaluation and concluded that the result was reasonable and that the finding was less than Red and eligible for enforcement discretion. The dominant core damage sequence from the licensee’s evaluation was a fire in the Control Room or Cable Spreading Room which could cause spurious operation of several MOVs necessary for safe shutdown. The SRA used IMC 0609, Appendix F, “Fire Protection Significance Determination Process,” to review the results of the licensee’s evaluation. The SRA validated the licensee’s calculations through a series of walkdowns, reviews of the calculation and verification of the values used were consistent with NUREG-6850 and IMC 0609, Appendix F. The licensee’s results were approximately $1E-6$ delta-CDF and $2E-8$ delta-LERF for this finding and hence were significantly lower than the $1E-4$ delta-CDF threshold for a finding of “high safety significance.”

In addition, the licensee entered this issue into their corrective action program as CAP 1506561. As a result, the inspectors concluded that the violation met all four criteria established by Section 9.1(a) and that the NRC was exercising enforcement discretion to not cite this violation in accordance with the Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues.

- Title 10 CFR 50, Appendix B, Criterion XI, “Test Control,” requires, in part, that a test program shall be established to assure that all testing required to demonstrate that SSCs will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. Specifically, the licensee established procedure 5 AWI 3.12.4,

“Post-Maintenance Testing,” Revision 24, as the program for selecting and documenting post maintenance tests (PMTs) and return to service tests to ensure that SSCs would perform their intended function when returned to service.

Contrary to the above, on September 20, 2017, the licensee failed to assure that testing required to demonstrate that three safety injection system actuation relays would perform satisfactorily in service was identified and performed in accordance with written test procedures, which incorporated the requirements and acceptance limits contained in applicable design documents. The three safety injection system actuation relays had not been tested following replacement during planned maintenance. Specifically, while reviewing PMT activities performed on the D5 EDG on September 19, 2017, the licensee identified three safety injection system actuation relays that had not been tested following replacement during planned maintenance. As a result, the D5 EDG was declared inoperable at the time of discovery on September 20, 2017. In response, the licensee performed an in-depth review of all recent D5 EDG maintenance activities to ensure that all PMT requirements were met and performed SP 2150, “D5 Diesel Generator Function Test,” on September 21, 2017, to adequately test all three safety injection system actuation relays and an additional D5 EDG slow start test to fully demonstrate operability of D5.

Because the inspectors answered “No” to all questions under Exhibit 2.A of IMC 0609, Appendix A, “The Significance Determination Process for Findings at-Power,” the finding screened as very low safety significance (Green). The above issue was documented in the licensee’s CAP as CAP 501000002920. Corrective actions included performing an apparent cause evaluation, department clock reset, and planned changes to 5 AWI 3.12.4 to ensure all required PMT activities are performed satisfactorily prior to returning SSCs to service.

- Prairie Island Technical Specification 3.0.6 requires, in part, that an evaluation shall be performed in accordance with Technical Specification 5.5.13, “Safety Function Determination Program,” when a supported system LCO is not met solely due to a support system LCO not being met. Specifically, if a loss of safety function is determined to exist by the Safety Function Determination Program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

Contrary to this TS requirement, between August 18 and 22, 2017, control room operators did not evaluate Unit 2 ‘A’ Component Cooling, Auxiliary Feedwater, and Cooling Water supported system LCOs while the 121 Safeguards Chilled Water support system LCO was not met. As a result, the appropriate Conditions and Required Actions were not entered during Unit 2 ‘B’ Component Cooling and Auxiliary Feedwater supported system maintenance and testing activities for which a loss of safety function existed.

Because the inspectors answered “No” to all questions under Exhibit 2.A of IMC 0609, Appendix A, “The Significance Determination Process for Findings at-Power,” the finding screened as very low safety significance (Green). Specifically, the finding did not represent (result in) an actual loss of function of two separate safety systems out-of-service for greater than their TS-allowed outage times. The above issues were documented in the licensee’s CAP as CAP 501000001929. Corrective actions included revisions to applicable station procedures for implementing TS 3.0.6 and the Safety Function Determination Program.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

S. Northard, Site Vice President
T. Conboy, Director of Site Operations
W. Paulhardt, Plant Manager
J. Bjorseth, Site Engineering Director
H. Butterworth, Business Support Director
O. Aarness, Maintenance Manager
J. Kivi, Regulatory Affairs Manager
T. Borgen, Operations Manager
B. Boyer, Radiation Protection Manager
B. Carberry, Emergency Preparedness Manager
B. Truckenmiller, Chemistry & Environmental Manager
D. Lapcinski, Assistant Operations Manager
S. Martin, Human Performance and Organizational Effectiveness Manager
S. Lappegaard, Production Planning Manager
P. Johnson, Regulatory Affairs Analyst
F. Sienczak, Senior Licensing Engineer
P. Wildenborg, Health Physicist
T. Wadley, Operations Training Manager
C. Boegeman, General Supervisor Operations Training
S. Sarrasin, Operations Training Supervisor
C. Schoo, Operations Training Supervisor
F. Collins, NRC Examination Developer

U.S. Nuclear Regulatory Commission

B. Dickson, Chief, Reactor Projects Branch 2
R. Kuntz, Project Manager, Office of Nuclear Reactor Regulation

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

5000282/2017003-01; 5000306/2017003-01	NCV	Failure to Ensure Correct Operation of Meteorological Tower (Section 2RS7.1)
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Closed

5000282/2017003-01; 5000306/2017003-01	NCV	Failure to Ensure Correct Operation of Meteorological Tower (Section 2RS7.1)
5000282/2016001-00	LER	Unanalyzed Condition Due to Non-Compliant Fire Protection Manual Operator Actions (Section 4OA3.1)

Discussed

None.

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety but rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

1R04 Equipment Alignment

- SP 1322; Safeguards Buses Weekly Inspection—Operating; Revision 29
- CAP 501000001018; Pot Adverse Trend in Chiller Performance; July 26, 2017
- CAP 501000001827; 11 CC PMP Pipe Support Near Upper Limit; August 22, 2017
- EC 22052; Remove Active Safety Function from CR Chillers Purge Compressors in Accordance with EC 14554; Revision 000
- CAP 501000001796; Suspected Bad Rings on D1 Starting AC; August 21, 2017
- CAP 1534401; NRC Question on Train B Cables in Bus 112 & Train A Event Monitoring Rooms; September 12, 2016;
- CAP 1499454; 2PSH-6669 “D6 EDG 2 Crank Case Hi PS” Found OOT; October 30, 2015
- C20.6-1; 480V Breaker Models, Mode of Operation and Appendix List; Revision 17
- NF-40022-1; Circuit Diagram 4kV & 480V Safeguard Buses Unit 1; Revision 78
- 2C1.4; Unit 2 Power Operation; Revision 58
- Adverse Condition Monitoring Plan; ZH Unit Cooler Motor; September 14, 2017
- CAP 501000003105; Scaffold Variance Not Specific; September 27, 2017
- CAP 501000003029; NRC Question: Scaffold Near MCC 2A2; September 26, 2017
- CAP 501000003061; CL Loop B Sch. Work Plan Issues—STOP WORK; September 26, 2017
- CAP 501000001388; D5 ENG 1 Oil Results Show Elevated Copper; July 8, 2017
- CAP 501000001530; D5 ENG 1 Added Approx. 10 Gal of Lube Oil; August 9, 2017
- CAP 501000001413; Added Oil to 11 TD AFW PMP; July 8, 2017
- CAP 501000000849; CV-31381, 11 CCHX TCV Failed Open; July 20, 2017
- CAP 1559905; Oil Addition to 234-042, D5 ENG 2 (CW); May 28, 2017
- WO 700009567; D2 High Turb-Chg. Inlet Gov. Side Temp; July 28, 2017
- CAP 501000000923; Rain Water on Bus 222; July 24, 2017
- 2C20.7; D5/D6 Diesel Generators; Revision 43

1R05 Fire Protection

- F5 Appendix F; Fire Hazard Analysis; Revision 33
- CAP 501000001014; Door 225 Plungers Sticking; July 26, 2017
- CAP 501000000914; 11 Rod Drive Room Cond Unit Tripped; July 24, 2017
- CAP 501000001412; NFPA 805 Post Fire Safe Shutdown Analysis; July 8, 2017
- CAP 501000001011; Rising Temp/Humidity Noted in CR; July 25, 2017

1R11 Licensed Operator Requalification Program

- PI-LOR-NRC-1701S; 2017 Licensed Operator Requalification NRC Simulator Evaluation #1; Revision 0
- PI-LOR-NRC-1709S; 2017 Licensed Operator Requalification NRC Simulator Evaluation #9; Revision 0
- FP-T-SAT-40; Implementation Phase; Revision 14
- FP-T-SAT-60; Systematic Approach to Training (SAT) Overview; Revision 19
- FP-T-SAT-71; NRC Exam Security Requirements; Revision 10

- FR-T-SAT-73; Licensed Operator Requalification Program Examinations; Revision 12
- FP-T-SAT-74; NRC Operator License Application and Renewal Requirements; Revision 10
- FP-T-SAT-75; Job Performance Measure and Simulator Exercise Guide Development; Revision 6
- FP-T-SAT-80; Simulator Configuration Control; Revision 9
- FP-T-SAT-81; FP-T-SAT-81; Simulator Testing and Documentation; Revision 9
- PITC 3.16; Prairie Island License Requalification Training; Revision 3
- PITC 3.18; Critical Task List; Revision 3
- D30; Post Refueling Startup Testing; Revision 62
- D32; Temperature Coefficient Measurement at Hot Zero Power; Revision 13
- D51; Temperature Coefficient Measurement at Power; Revision 14
- 1C1.2-M2; Unit 1 Startup to Mode 2; Revision 4
- 1C1.2-M1; Unit 1 Startup to Mode 1; Revision 5
- 1C1.2-BOP; Unit 1 Balance of Plant Systems Startup; Revision 5
- SP 1278; Core Exit Thermocouple Post Refueling Operability Test Unit 1; Revision 14
- SWI O-43; Operator Qualification Program; Revision 15
- Apparent Cause Evaluation; CAP 0183223; Revision 0
- CAP 1536820; PINGP Pre IP-71111.11B Focused Self-Assessment; May 15, 2017
- CAP 1492642; Entered Unplanned LCO 3.7.8 & 3.8.1 for SV-33133 [Cooling Water to 121 Safeguards Travelling Screens] INOP; September 9, 2015
- CAP 1494893; Loop A Cooling Water Header OOS During PMT of SV-33133 [Cooling Water to 121 Safeguards Travelling Screens]; September 28, 2015
- CAP 1495183; Negative Trend in Recent Operator Fundamental Performance; September 30, 2015
- CAP 1495611; Level 1 Escalation for Operability Calls; October 4, 2015
- CAP 1498110; Training Request for Use of Configuration Management Tools; October 22, 2015
- CAP 1530013; Potential Trend in Operations Fundamentals – High Standards and Communications; July 29, 2016
- CAP 1541821; Reactor Coolant Pumps Stopped due to Reactor Coolant System Pressure Dropping Below 240 psig; November 14, 2016
- 2017 Prairie Island Nuclear Generating Plant Licensed Operator Requalification Program Week 3/Crew 4 RO and SRO Biennial Written Examinations; August, 2017
- 2017 Prairie Island Nuclear Generating Plant Licensed Operator Requalification Program Week 3/Crew 4 RO and SRO Annual JPM Examination; August, 2017
- 2017 Prairie Island Nuclear Generating Plant Licensed Operator Requalification Program Week 5/Crews 3 RO and SRO Annual JPM Examination; August, 2017
- 2017 Prairie Island Nuclear Generating Plant Licensed Operator Requalification Program Week 4/Crews 2 RO and SRO Annual JPM Examination; August, 2017
- 2017 Prairie Island Nuclear Generating Plant Licensed Operator Requalification Program Week 3/Crew 4 Annual Simulator Evaluation Scenarios; August, 2017
- 2017 Prairie Island Nuclear Generating Plant Licensed Operator Requalification Program Week 4/Crews 2 Annual Simulator Evaluation Scenarios; September, 2017
- 2017 Prairie Island Nuclear Generating Plant Licensed Operator Requalification Program Week 5/Crews 3 Annual Simulator Evaluation Scenarios; September, 2017
- QF107302; Crew Simulator Examination Summary (Week 3/Crew 4); Revision 3
- QF107303; Individual Operator Simulator Examination Summary (Week 3/11 Individuals); Revision 2
- QF107304; SE/STA Simulator Examination Summary (Week3/Crew 4); Revision 3
- Remediation Training Forms; 7 Forms for FL-LOR September, 2015 through July, 2017
- List of Open Simulator Work Orders, Priority 1-4; as of August 25, 2017

- List of Completed Simulator Work Orders, August 15, 2015 through August 25, 2017
- Simulator Review Committee Agenda/Minutes; Prairie Island 2016-04; December 5, 2016
- Simulator Review Committee Agenda/Minutes; Prairie Island 2017-01; March 6, 2017
- Simulator Review Committee Agenda/Minutes; Prairie Island 2017-02a; April 10, 2017
- Simulator Review Committee Agenda/Minutes; Prairie Island 2017-02; June 5, 2017
- Simulator Performance Test Procedure T-01; Manual Reactor Trip; May 21, 2016
- Simulator Performance Test Procedure T-02; Simultaneous Trip of Both Main Feedwater Pumps; May 21, 2016
- Simulator Performance Test Procedure T-03; Simultaneous Closure of All Main Steam Isolation Valves; May 21, 2016
- Simulator Performance Test Procedure T-04; Simultaneous Trip of All Reactor Coolant Pumps; May 21, 2016
- Simulator Performance Test Procedure T-05; Main Turbine Trip from Maximum Power Level Which Does Not Result in Immediate Reactor Scram; November 5, 2016
- Simulator Performance Test Procedure T-08; Maximum Size Reactor Coolant System Rupture Combined with Loss of All Offsite Power; June 18, 2016
- Simulator Performance Test Procedure T-11; Maximum Design Load Rejection; June 18, 2016
- Simulator Performance Test Procedure S-01; Steady State Tests; November 23, 2015
- Simulator Performance Test Procedure N-01; Core Performance Testing Unit 1 Cycle 30; November 29, 2016
- CF-P1-30-OPS-001; P130 S3R Simulator Input; September 9, 2016
- D30 Deviation Document; October 21, 2016
- D32 Deviation Document; October 20, 2016
- 1C1.2-M2 Deviation Document; November 22, 2016
- 1C1.2-M1 Deviation Document; November 23, 2016
- 1C1.2-BOP Deviation Document; November 23, 2016
- LP (Lesson Plan) No. P9116L-0205, Operability Determinations and Exercises; Revision 0
- LP No. P9116L-0801; A Case for Change – Part 1; Revision 0
- LP No. P9116L-0806; A Case for Change – Part 2; Revision 0
- LP No. P9116L-1113; Safety Function Determination Program; Revision 0
- SEG (Simulator Exercise Guide) No. P9116ST-0812; Cycle 16H Simulator Session No. 2; Revision 0
- SEG No. P9116SE-0810; Cycle 16H Case for Change Evaluation; Revision 0

1R12 Maintenance Effectiveness

- FP-E-MR-04; Maintenance Rule—(A)(1) Process; Revision 5
- FP-E-MR-01; Maintenance Rule Process; Revision 9
- FP-E-MR-03; Maintenance Rule Monitoring; Revision 7
- Prairie Island Maintenance Rule Bases Document; June 2, 2017
- CAP 1561282; FNC RH-01 for the 12 RHR PMP Has Exceeded its MRule UA Criteria; June 16, 2017
- Prairie Island Maintenance Rule Bases Document; June 2, 2017
- Prairie Island MSPI Basis Document; Revision 23
- System Report-U2-D6 Diesel Generator; August 16, 2017
- System Report-U2-D5 Diesel Generator; August 16, 2017
- CAP 501000002517; D5 Engine 1 Cylinder A6 has a Crack; September 11, 2017
- CAP 501000002449; 2018 DBAI FSA-EDG LO Storage Locations; September 11, 2017
- CAP 501000002448; IRPI J-10 Causing 47513-0507 Alarm; September 11, 2017
- CAP 501000002541; Scaffolding in D6 Engine Room; September 11, 2017
- CAP 501000002550; Incorrect Model Relay Installed for D5; September 12, 2017

- CAP 501000002259; Unexpected 22 DDCLP Alarm; September 5, 2017
- CAP 501000002230; D5 ENG 1 High Crank Case Pressure; September 5, 2017
- CAP 501000002292; D5 Eng 1 L/O Level Varied During Testing; September 5, 2017
- CAP 501000002301; Added Oil to D5 DSL Gen 1B Air Distribution; September 5, 2017
- CAP 501000002523; Door 154 Gap Cannot be Field Repaired; September 11, 2017
- CAP 501000002607; CV-39423 Failed IST Timing in SP 2245A; September 13, 2017
- CAP 501000002635; Steam Leakage at Gov VLV; September 14, 2017
- CAP 501000002534; 2 PS-5670 Found OOT High; September 11, 2017
- CAP 501000002518; 2TSL-5212 Found OOT; September 11, 2017
- CAP 1499563; Found 2PSH-6169; Out of Tolerance During ICPM 2-600A; October 31, 2015

1R13 Maintenance Risk Assessment and Emergent Work Control

- SP 2305; D6 Diesel Generator Monthly Slow Start Test; Revision 41
- WO 700022304; Replace 2PSH-6169; July 18, 2017
- CAP 501000000712; D6 Diesel Lockout During SP 2305; July 17, 2017
- CAP 501000000957; 2N42 NM 305 OOT During SP; July 25, 2017
- CAP 501000000954; 2N42 NI 302 Meter OOT; July 25, 2017
- CAP 501000001052; Wrong Component Protected; July 27, 2017
- CAP 501000000923; 11 FWP IB Bearing Vib in Alert Range; July 22, 2017
- CAP 501000001929; Unit 2 AFW Pump Operability; August 24, 2017

1R15 Operability Determinations and Functionality Assessments

- CAP 1407745; 121 Control Room Chiller Did Not Start; April 19, 2015
- C37.11; Chilled Water Safeguard System Operation; Revision 29
- WO 00393580-01; SP 1253 Alternating In-Service Control Room Chillers; April 7, 2010
- SP 1253; Alternating In-Service Control Room Chillers; Revision 13
- VTM XH-483-6; Model PCV Direct Drive Hermatic Centravac; Revision 4
- CAP 501000002635; Steam Leakage at Governor Valve; September 14, 2017
- CAP 501000003174; Unit 1 Sump B Level Increase; September 29, 2017
- Independent Review of Past Operability Review of the Prairie Island D6 Crankcase Oil Pressure Switch Engine Trip; August 11, 2017
- CAP 501000003048; Indicated QPTP Exceeded T.S. Limits; September 26, 2017

1R18 Plant Modifications

- 50.59 Screening 5439; Bypass D6 Crankcase Pressure Trips to Support Operations; Revision 2

1R19 Post-Maintenance Testing

- CAP 501000001696; 121 CR Chilled Water Pump Low Flow and Pressure; August 18, 2017
- CAP 501000001499; 12 CC Pump Oil Addition; August 9, 2017
- CAP 501000001068; 12 CC PMP 1B Bulb Oiler Oil Level High; July 27, 2017
- WO 7000222943; Troubleshoot 121 Control Room Chiller; July 26, 2017
- SP 2318.31; NIS Power Range Channel Calibration; July 26, 2017
- WO 700022937-0010; Power Range 2N42 ISO AMP; July 19, 2017
- WO 700022937; Replace 2N42-305 and CB302; July 26, 2017
- WO 560806-01; IC: Replace 2N42-N1302 Current Indicator; July 12, 2017
- CAP 501000003014; D2 Keep Warm System Failure; September 25, 2017

- WO 700026970; QIM_501000002911_D5 Relay Replacement RT; September 21, 2017
- SP 2295; D5 Diesel Generator 6 Month Fast Start Test; Revision 47
- 5 AWI 3.12.4; Post-Maintenance Testing; Revision 24

1R22 Surveillance Testing

- CAP 501000000897; SP Could not be Performed As Written; July 22, 2017
- SP 2006B; NIS Power Range Axial Offset Calibration Greater than 50 Percent Power; July 26, 2017
- SP 2005; NIS Power Range Daily Calibration; July 12, 2017
- CAP 1556742; D2 High Turb—Chg. Inlet Gov. Side Temperature During SP 1305; April 24, 2017
- SP 1305; D2 Diesel Generator Monthly Slow Start Test; June 26, 2017
- WO 555082-01; SP 1305 D2 Diesel Generator Monthly Slow Start; June 26, 2017
- SP 1305; D2 Diesel Generator Monthly Slow Start Test; July 24, 2017
- WO 700014327; SP 1305 D2 Diesel Generator Monthly Slow Start Test; July 22, 2017
- SP 1037; Unit 1 Turbine Overspeed Trip Exercise; July 22, 2017
- CAP 501000000701; Turbine Overspeed Trip Test; September 15, 2017
- WO 700015236; SP 1037 MNTH U1 TB Overspeed Trip Test; July 17, 2017
- CAP 501000001585; Loose Bolt Tightened During D1 SP 1093; August 14, 2017
- CAP 501000003233; Indicated Spike On Main Turbine Vibes; October 1, 2017
- SP 1106A; 12 Diesel Cooling Water Pump Monthly; Revision 92
- SP 1005; NIS Power Range Daily Calibration; Revision 48

2RS7 Radiological Environmental Monitoring Program

- 2016 Annual Radiological Environmental Monitoring Program Report; May 8, 2017
- 2015 Annual Radiological Environmental Monitoring Program Report; May 5, 2016
- 2015 Meteorological Data Wind Rose; March 8, 2016
- 2016 Meteorological Data Wind Rose; January 6, 2017
- 2015 Land Use Census; October 14, 2015
- 2016 Land Use Census; September 29, 2016
- H4; ODCM; Revision 31
- 10 CFR 50.75(g) Information Matrix; Current Matrix
- Meteorological Tower Calibration; September 26, 2016
- ATI Environmental Inc. Audit Report; May 17, 2017
- TP1676; Meteorological Instruments Calibration; Revision 15
- TP1677; Meteorological Instrumentation Monthly Test; Revision 19
- RPIP 4731; REMP Air Sampling; Revision 17
- RPIP 4732; REMP Water Sampling; Revision 17
- Technical Basis Document 16-006; REMP Meat Pathway Evaluation; December 21, 2016
- Technical Basis Document 16-007; Loss of REMP Milk Pathway Evaluation; December 21, 2016
- Final Report; Meteorological Data Review for Calendar Years 2012 to 2016 and Comparison to 2002 to 2006 Joint Frequency Distribution Prairie Island Nuclear Generating Plant; March 2017
- Prairie Island Nuclear Generating Plant 2016 Groundwater Review
- Work Request 133522; Trees Need Clearing around REMP Air Sampler; May 15, 2017
- CAP 1492166; REMP Inspection NRC Concerns; September 3, 2015
- CAP 1494374; REMP Samples Shipped to Wrong Location; September 24, 2015
- CAP 1507162; REMP P-1 Air Sampler Missed Sample; December 31, 2015

- CAP 1530217; REMP Air Sampler P-2 Power Panel Air Flow Obstruction; August 2, 2016
- CAP 1536046; NOS ID: REMP Flow Control Gauges; September 28, 2016
- CAP 1537557; Last REMP Milk Sample Location Terminated; October 12, 2016
- CAP 500001560868; Primary Met Tower Disparity Delta T; June 21, 2016
- CAP 602000000017; H4.2 Offsite Dose Calculation Manual; June 29, 2017
- CAP 501000001091; Trees too Tall Near Met Tower; July 27, 2017
- CAP 501000000167; Evaluate Vegetation near REMP Air Sampler; July 27, 2017

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

- RPIP 1311; Resin Liner/PDV Control; Revision 17
- RPIP 1311; Resin Liner/PDV Control; Revision 16
- Response to NRC Question Concerning Out of Service Radwaste Equipment; May 18, 2017

4OA1 Performance Indicator Verification

- Radiological Effluent Summaries; Third Quarter of 2016 - Second Quarter of 2017
- RCS DEI Data; Third Quarter of 2016 - Second Quarter of 2017
- RCS Leakage Data; Third Quarter of 2016 – Second Quarter of 2017
- CAP 1546185; U-1 RCS Head Vent System Leakage; January 1, 2017

4OA2 Identification and Resolution of Problems

- CAP 501000000712; D6 Diesel Lockout During SP 2305; Root Cause Evaluation; July 17, 2017
- CAP 1499873; D5/D6 Crankcase Pressure Switches Cannot be Set at Setpoint; November 3, 2015
- CAP 1403725; C “As Found” Data Out of Tolerance; October 27, 2013
- CAP 1499454; 2PSH-6669 “D6 ENDG 2 Crankcase Hi PS” Found OOT; October 30, 2015

4OA3 Follow-up of Events and Notices of Enforcement Discretion

- V.SPA.16.001; Risk Assessment of CAP 150656 App R MOV Hot Short Bypass Torque/Limit SW; Revision 0
- CAP 1506561; App R MOV Hot Short Concern; December 21, 2015
- Root Cause Evaluation Report; 501000000712/D6 Diesel Lockout During SP2305; Revision 0

4OA7 Licensee Identified Violations

- CAP 501000002911; D5 Relay Replacement RTS/PMT Inadequate; September 20, 2017
- CAP 501000002920; D5 SI Relays Not Tested in PMT; September 20, 2017
- SP 2150; D5 Diesel Generator Relay Functional Test; September 21, 2017

LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access Management System
CAP	Corrective Action Program
CDF	Core Damage Frequency
CFR	<i>Code of Federal Regulations</i>
EDG	Emergency Diesel Generator
IMC	Inspection Manual Chapter
IP	Inspection Procedure
LER	Licensee Event Report
LERF	Large Early Release Frequency
LORT	Licensed Operator Requalification Training
MOV	Motor-Operated Valve
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NFPA	National Fire Protection Association
NRC	U.S. Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PI	Performance Indicator
PMT	Post-Maintenance Testing
RCS	Reactor Coolant System
REMP	Radiological Effluent Monitoring Program
RHR	Residual Heat Removal
SAT	Systems Approach to Training
SCWS	Safeguards Chilled Water System
SRA	Senior Reactor Analyst
SSC	Structure, System, or Component
TS	Technical Specification
USAR	Updated Safety Analysis Report
WO	Work Order