UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
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August 5, 2016

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 05000282/2016002 and 05000306/2016002

Dear Mr. Northard:

On June 30, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Prairie Island Nuclear Generating Plant, Units 1 and 2. On July 7, 2016, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The enclosed report represents the results of this inspection.

No NRC-identified or self-revealing findings were identified during this inspection.

However, the inspectors documented a licensee-identified violation which was determined to be of very low safety significance in this report. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2.a of the NRC Enforcement Policy.

In accordance with Title 10 of the *Code of Federal Regulations* (CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records System (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Kenneth Riemer
Branch 2
Division of Reactor Projects

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

Enclosure:
IR 05000282/2016002; 05000306/2016002

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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:	05000282/2016002; 05000306/2016002
Licensee:	Northern States Power Company, Minnesota
Facility:	Prairie Island Nuclear Generating Plant, Units 1 and 2
Location:	Welch, MN
Dates:	April 1, 2016 through June 30, 2016
Inspectors:	L. Haeg, Senior Resident Inspector P. LaFlamme, Resident Inspector P. Zurawski, Senior Resident Inspector - Monticello S. Bell, Health Physicist M. Ziolkowski, Reactor Inspector
Approved by:	K. Riemer, Chief Branch 2 Division of Reactor Projects

Enclosure

TABLE OF CONTENTS

SUMMARY

Routine Inspection Report 05000282/2016002, 05000306/2016002; April 1, 2016, through June 30, 2016; Prairie Island Nuclear Generating Plant, Units 1 and 2.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. No NRC-identified or self-revealing findings were 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 February 4, 2015. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG–1649, "Reactor Oversight Process," dated February 2014.

Licensee-Identified Violations

- 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 corrective action program (CAP). These violations and CAP tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Units 1 and 2 operated at full power for the entirety of the inspection period, with the exception of brief down-power maneuvers to accomplish planned surveillance testing activities.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness of Offsite and Alternate AC Power Systems

a. Inspection Scope

The inspectors verified that plant features and procedures for operation and continued availability of offsite and alternate alternating current (AC) power systems during adverse weather were appropriate. The inspectors reviewed the licensee's procedures affecting these areas and the communications protocols between the transmission system operator (TSO) and the plant to verify that the appropriate information was being exchanged when issues arose that could impact the offsite power system. Examples of aspects considered in the inspectors' review included:

- coordination between the TSO and the plant during off-normal or emergency events;
- explanations for the events;
- estimates of when the offsite power system would be returned to a normal state; and
- notifications from the TSO to the plant when the offsite power system was returned to normal.

The inspectors also verified that plant procedures addressed measures to monitor and maintain availability and reliability of both the offsite AC power system and the onsite alternate AC power system prior to or during adverse weather conditions. Specifically, the inspectors verified that the procedures addressed the following:

- actions to be taken when notified by the TSO that the post-trip voltage of the offsite power system at the plant would not be acceptable to assure the continued operation of the safety-related loads without transferring to the onsite power supply;
- compensatory actions identified to be performed if it would not be possible to predict the post-trip voltage at the plant for the current grid conditions;
- re-assessment of plant risk based on maintenance activities which could affect grid reliability, or the ability of the transmission system to provide offsite power; and
- communications between the plant and the TSO when changes at the plant could impact the transmission system, or when the capability of the transmission system to provide adequate offsite power was challenged.

Documents reviewed are listed in the Attachment to this report. The inspectors also reviewed corrective action program (CAP) items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action procedures.

This inspection constituted one readiness of offsite and alternate AC power systems sample as defined in Inspection Procedure (IP) 71111.01–05.

b. Findings

No findings were identified.

.2 External Flooding

a. Inspection Scope

The inspectors evaluated the design, material condition, and procedures for coping with the design basis probable maximum flood. The evaluation included a review to check for deviations from the descriptions provided in the Updated Safety Analysis Report (USAR) for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors checked for obstructions that could prevent draining, checked that the roofs did not contain obvious loose items that could clog drains in the event of heavy precipitation, and determined that barriers required to mitigate the flood were in place and operable. Additionally, the inspectors performed a walkdown of the protected area to identify any modification to the site which would inhibit site drainage during a probable maximum precipitation event or allow water ingress past a barrier. The inspectors also walked down underground bunkers/manholes subject to flooding that contained multiple train or multiple function risk-significant cables. The inspectors also reviewed the abnormal procedure for mitigating the design basis flood to ensure it could be implemented as written. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one external flooding sample as defined in IP 71111.01–05.

b. Findings

No findings were identified.

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:

- D5 emergency diesel generator (EDG) ventilation system;
- Bus 15 4KV electrical distribution system;
- 121 control room safeguards chilled water system; and
- D2 EDG starting air 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, the USAR, Technical Specification (TS) requirements, outstanding work orders (WOs), condition reports, 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.

This inspection constituted four quarterly partial system walkdown samples 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 58; Unit 1 695' Aux Bldg. Elevation;
- Fire Area 73; Unit 2 695' Aux Bldg. Elevation;
- Fire Area 81; Unit 1 715' Bus 15 4KV Room; and
- Fire Area 80; Unit 1 715' Bus 111 480 VAC Room.

The inspectors reviewed 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 (IPEEE) 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 activities 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 areas 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 feedwater (AFW) and Unit 1 safeguards electrical switchgear rooms due to postulated high energy line break (HELB)-induced flooding of turbine building.

Documents 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 May 31, 2016, 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

During the week of April 25, 2016, the inspectors observed control room operators during the replacement of the power supply for an area radiation monitor and post-maintenance testing of the 122 control room chiller. 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 (if applicable);
- correct use and implementation of procedures;
- control board (or equipment) manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications (if applicable).

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.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations

a. Inspection Scope

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

- Unit 1 EDG system; and
- Unit 1 & 2 safeguards chilled water systems.

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 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.

This inspection constituted two quarterly maintenance effectiveness samples 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:

- 21 safeguards screenhouse roof exhaust fan failure to start during the performance of monthly surveillance testing of the 22 diesel-driven cooling water pump (DDCLP);
- 21 shield building ventilation filter heater failure to energize during monthly surveillance test;
- 21 component cooling supply to residual heat removal (RHR) valve planned maintenance elevated risk evaluation; and
- SI 15–9, Unit 1 safety injection system throttle valve emergent work activities and subsequent repairs.

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 are listed in the Attachment to this report.

This inspection constituted four maintenance risk assessments 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:

- Turbine building HELB environmental analysis;
- Potential miss-classification of component cooling water valves within the in-service testing program (IST);
- D5 EDG 21 safeguards cooling fan failure evaluation;
- Unit 1 Train B safety injection throttle valve packing leak evaluation;
- D5 EDG failure to pick up load while paralleling to grid evaluation; and
- D6 EDG engine room exhaust damper failure evaluation.

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.

This inspection constituted six operability determinations and functionality assessments 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 the following modification:

- D5 EDG loading circuit modification.

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 modifications 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 activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- Train B to RHR supply valve maintenance;
- 1-SI 15–9, Unit 1 safety injection throttle valve repack and gland follower repair activities;
- 23 fan coil unit damper actuator repair activities;
- D6 EDG room exhaust motor damper repair activities;
- D5 EDG governor relay replacement activities; and
- 122 control room safeguards chilled water system maintenance activities.

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.

This inspection constituted six post-maintenance testing sample 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 Instruments System Power Range Daily Calibration (Routine);
- SP 2091, Monthly Containment Fan Coil Unit Test (Routine);
- SP 1089A, Train A Residual Heat Removal System Quarterly Test (Routine); and
- SP 2307, D6 Emergency Diesel Generator System Fast Speed Start 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 IST 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.

This inspection constituted three 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 drill on May 16, 2016, 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.

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

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2RS3 In-Plant Airborne Radioactivity Control and Mitigation (71124.03)

.1 Engineering Controls (02.02)

a. Inspection Scope

The inspectors reviewed procedural guidance for use of ventilation systems, and assessed whether the systems were used, to the extent practicable, during high-risk activities to control airborne radioactivity and minimize the use of respiratory protection. The inspectors assessed whether installed ventilation airflow capacity, flow path, and filter/charcoal unit efficiencies for selected systems were consistent with maintaining concentrations of airborne radioactivity in work areas below the concentrations of an airborne area to the extent practicable. The inspectors also evaluated whether selected temporary ventilation systems used to support work in contaminated areas were consistent with licensee procedural guidance and as-low-as-reasonably-achievable.

The inspectors reviewed select airborne monitoring protocols to assess whether alarms and set points were sufficient to prompt worker action. The inspectors assessed whether the licensee established trigger points for evaluating levels of airborne beta-emitting and alpha-emitting radionuclides.

These inspection activities constituted one sample as defined in IP 71124.03–05

b. Findings

No findings were identified.

.2 Use of Respiratory Protection Devices (02.03)

a. Inspection Scope

The inspectors assessed whether the licensee provided respiratory protection devices for those situations where it was impractical to employ engineering controls such that occupational doses were as-low-as-reasonably-achievable. For select instances where respiratory protection devices were used, the inspectors assessed whether the licensee concluded that further engineering controls were not practical. The inspectors also assessed whether the licensee had established means to verify that the level of protection provided by the respiratory protection devices was at least as good as that assumed in the work controls and dose assessment.

The inspectors assessed whether the respiratory protection devices used to limit the intake of radioactive materials were certified by the National Institute for Occupational Safety and Health/Mine Safety and Health Administration or have been approved by the U.S. Nuclear Regulatory Commission. The inspectors evaluated whether the devices were used consistent with their National Institute for Occupational Safety and Health/Mine Safety and Health Administration certification or any conditions of their U.S. Nuclear Regulatory Commission approval.

The inspectors reviewed records of air testing for supplied-air devices and self-contained breathing apparatus (SCBA) bottles to assess whether the air used met or exceeded Grade D quality. The inspectors evaluated whether plant breathing air supply systems satisfied the minimum pressure and airflow requirements for the devices.

The inspectors evaluated whether selected individuals qualified to use respiratory protection devices had been deemed fit to use the devices by a physician.

The inspectors observed selected individuals donning, doffing, and functionally checking respiratory protection devices as appropriate and assessed whether these individuals knew how to safely use the device and how to properly respond to any device malfunction or unusual occurrence. The inspectors reviewed training curricula for use of respiratory protection devices to assess whether individuals are adequately trained on donning, doffing, function checks, and how to respond to a malfunction.

The inspectors observed the physical condition of respiratory protection devices ready for issuance and reviewed records of routine inspection for selected devices. The inspectors reviewed records of maintenance on the vital components for selected devices and assessed whether onsite personnel assigned to repair vital components received vendor-provided training.

These inspection activities constituted one sample as defined in IP 71124.03–05

b. Findings

No findings were identified.

.3 Self-Contained Breathing Apparatus for Emergency Use (02.04)

a. Inspection Scope

The inspectors reviewed the status and surveillance records for select SCBAs. The inspectors evaluated the licensee's capability for refilling and transporting SCBA air bottles to and from the control room and operations support center during emergency conditions.

The inspectors assessed whether control room operators and other emergency response and radiation protection personnel were trained and qualified in the use of SCBAs and evaluated whether personnel assigned to refill bottles are trained and qualified for that task.

The inspectors assessed whether appropriate mask sizes and types were available for use. The inspectors evaluated whether on-shift operators had no facial hair that would interfere with the sealing of the mask and that appropriate vision correction was available.

The inspectors reviewed the past 2 years of maintenance records for selected in-service SCBA units used to support operator activities during accident conditions. The inspectors assessed whether maintenance or repairs on an SCBA unit's vital components were performed by an individual certified by the manufacturer of the device to perform the work. The inspectors evaluated the onsite maintenance procedures governing vital component work to determine whether there was any inconsistencies with the SCBA manufacturer's recommended practices. The inspectors evaluated whether SCBA cylinders satisfied the hydrostatic testing required by the U.S. Department of Transportation.

These inspection activities constituted one sample as defined in IP 71124.03–05

b. Findings

No findings were identified.

.4 Problem Identification and Resolution (02.05)

a. Inspection Scope

The inspectors assessed whether problems associated with the control and mitigation of in-plant airborne radioactivity were being identified by the licensee at an appropriate threshold and were properly addressed for resolution. Additionally, the inspectors evaluated the appropriateness of the corrective actions for selected problems involving airborne radioactivity documented by the licensee.

These inspection activities constituted one sample as defined in IP 71124.03–05

b. Findings

No findings were identified.

2RS4 Occupational Dose Assessment (71124.04)

.1 Source Term Characterization (02.02)

a. Inspection Scope

The inspectors evaluated whether the licensee had characterized the radiation types and energies being monitored and that the characterization included gamma, beta, hard-to-detects, and neutron radiation.

The inspectors assessed whether the licensee had developed scaling factors for including hard-to-detect nuclide activity in internal dose assessments.

These inspection activities constituted one sample as defined in IP 71124.04–05.

b. Findings

No findings were identified.

.2 External Dosimetry (02.03)

a. Inspection Scope

The inspectors evaluated whether the licensee's dosimetry vendor is National Voluntary Laboratory Accreditation Program accredited and if the approved irradiation test categories for each type of personnel dosimeter used are consistent with the types and energies of the radiation present and the way the dosimeter is being used.

The inspectors evaluated the onsite storage of dosimeters before their issuance, during use, and before processing/reading. For personal dosimeters stored onsite during the monitoring period, the inspectors evaluated whether they were stored in low-dose areas with control dosimeters. For personal dosimeters that are taken offsite during the monitoring period, the inspectors evaluated the guidance provided to individuals with respect to care and storage of the dosimeter.

The inspectors evaluated the calibration of active dosimeters. The inspectors assessed the bias of the active dosimeters compared to passive dosimeters and the correction factor used. The inspectors also assessed the licensee's program for comparing active and passive dosimeter results and investigations for substantial differences. The inspectors assessed whether there were adverse trends for active dosimeters.

These inspection activities constituted one sample as defined in IP 71124.04–05.

b. Findings

No findings were identified.

.3 Internal Dosimetry (02.04)

a. Inspection Scope

The inspectors reviewed procedures used to assess internal dose using whole body counting equipment to evaluate whether the procedures addressed methods for

differentiating between internal and external contamination, the release of contaminated individuals, the route of intake and the assignment of dose. The inspectors assessed whether the frequency of measurements was consistent with the biological half-life of the nuclides available for intake. The inspectors reviewed the licensee's evaluation for use of portal radiation monitors as a passive monitoring system to determine if instrument minimum detectable activities were adequate to detect internally deposited radionuclides sufficient to prompt additional investigation. The inspectors reviewed whole body counts and evaluated the equipment sensitivity, nuclide library, review of results, and incorporation of hard-to-detect radionuclides.

The inspectors reviewed procedures used to determine internal dose using in vitro analysis to assess the adequacy of sample collection, determination of entry route and assignment of dose. The inspectors reviewed select analyses for adequacy and assessed the laboratory's Cross-Check Program to ensure quality assurance.

The inspectors reviewed the licensee's program for dose assessment based on air sampling, as applicable, and calculations of derived air concentration. The inspectors determined whether flow rates and collection times for air sampling equipment were adequate to allow lower limits of detection to be obtained. The inspectors also reviewed the adequacy of procedural guidance to assess internal dose if respiratory protection was used.

The inspectors reviewed select internal dose assessments and evaluated the monitoring protocols, equipment, and data analysis.

These inspection activities constituted one sample as defined in IP 71124.04–05.

b. Findings

No findings were identified.

.4 Special Dosimetric Situations (02.05)

a. Inspection Scope

The inspectors assessed whether the licensee informs workers of the risks of radiation exposure to the embryo/fetus, the regulatory aspects of declaring a pregnancy, and the specific process to be used for declaring a pregnancy. The inspectors selected individuals who had declared pregnancy during the current assessment period and evaluated whether the Radiological Monitoring Program for declared pregnant workers was technically adequate to assess the dose to the embryo/fetus. The inspectors assessed results and/or monitoring controls for compliance with regulatory requirements.

The inspectors reviewed the licensee's methodology for monitoring external dose in non-uniform radiation fields or where large dose gradients exist. The inspectors evaluated the licensee's criteria for determining when alternate monitoring was to be implemented. The inspectors reviewed dose assessments performed using multibadging to evaluate whether the assessment was performed consistently with licensee procedures and dosimetric standards.

The inspectors evaluated the licensee's methods for calculating shallow dose equivalent from distributed skin contamination or discrete radioactive particles.

The inspectors evaluated the licensee's Neutron Dosimetry Program, including dosimeter types and/or survey instrumentation.

The inspectors reviewed select neutron exposure situations and assessed whether dosimetry and/or instrumentation was appropriate for the expected neutron spectra, there was sufficient sensitivity, and neutron dosimetry was properly calibrated. The inspectors also assessed whether interference by gamma radiation had been accounted for in the calibration and whether time and motion evaluations were representative of actual neutron exposure events.

For the special dosimetric situations reviewed in this section, the inspectors assessed how the licensee assigns dose of record. This included an assessment of external and internal monitoring results, supplementary information on Individual exposures, and radiation surveys and/or air monitoring results when dosimetry was based on these techniques.

These inspection activities constituted one sample as defined in IP 71124.04–05.

b. Findings

No findings were identified.

.5 Problem Identification and Resolution (02.06)

a. Inspection Scope

The inspectors assessed whether problems associated with occupational dose assessment are being identified by the licensee at an appropriate threshold and are properly addressed for resolution. The inspectors assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee involving occupational dose assessment.

These inspection activities constituted one sample as defined in IP 71124.04–05.

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)

.1 Mitigating Systems Performance Index—High Pressure Injection Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MPSI) - High Pressure Injection Systems performance indicator, Units 1 and 2, for the period from the 2nd quarter of 2015 through the 1st quarter of 2016. To determine

the accuracy of the performance indicator (PI) reported during those periods, PI definitions and guidance contained in the 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 narrative logs, issue reports, MSPI derivation reports, event reports and NRC Integrated Inspection Reports for the period of April 1, 2015, through March 31, 2016, to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report 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 MSPI high pressure injection system samples as defined in IP 71151–05.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index—Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Heat Removal System performance indicator, Units 1 and 2, for the period from the 2nd quarter of 2015 through the 1st quarter of 2016. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in NEI Document 99–02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, MSPI derivation reports, and NRC Integrated Inspection Reports for the period of April 1, 2015, through March 31, 2016, to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report 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 MSPI heat removal system samples as defined in IP 71151–05.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152)

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

a. Inspection Scope

As part of the various baseline inspection procedures 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 CAP at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Attributes reviewed included: identification of the problem was complete and accurate; timeliness was commensurate with the safety significance; evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent-of-condition reviews, and previous occurrences reviews were proper and adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included in the Attachment to 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 and documented in Section 1 of this report.

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's CAP. This review was accomplished through inspection of the station's daily condition report packages.

These daily reviews were performed by procedure as part of the inspectors' daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the

results of daily inspector CAP item screening discussed in Section 4OA2.2 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the 6-month period of January 1, 2016, through June 30, 2016, although some examples expanded beyond those dates where the scope of the trend warranted.

The review also included issues documented outside the normal CAP in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's CAP trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

This inspection constituted one semi-annual trend review sample as defined in IP 71152–05.

b. Findings

No findings were identified.

.4 Annual Follow-up of Selected Issues: Train B Safeguards Chilled Water System Operability Evaluation

a. Inspection Scope

During a review of items entered in the licensee's CAP, the inspectors recognized a corrective action item (CAP 01488482) documenting several instances where past inoperability of the train B chilled water system challenged safeguards bus 16 operability. Specifically, the chilled water system supplies room cooling for several safeguards systems that mitigate room heat up temperatures during a design basis HELB event. Consequently, the inspectors concluded that based on current calculations for HELB events, bus 16 could have been rendered inoperable each time the chilled water system had been taken out of service for planned maintenance over the past 3 years. The inspectors reviewed control room logs, associated work orders, operating procedures, the USAR, the TS and interviewed engineering and operations personnel. These reviews were performed to validate whether the licensee had adequately identified and evaluated each occurrence of the chilled water system being taken out of service and the associated impact on bus 16 operability. The inspectors noted that the licensee was in the process of reconstituting the HELB program. Therefore, the inspectors limited their review to verifying proper identification and evaluation of the train B chilled water system out of service and the impact on bus 16. The inspectors independently verified that apparent cause evaluation (ACE) 01488482 addressed the issue of concern, its impact on safeguards equipment, extent of condition, operating experience, safety culture, risk assessment and corrective actions taken to resolve the issue.

Documents reviewed are listed in the Attachment to this report.

This review constituted one in-depth problem identification and resolution sample as defined in IP 71152–05.

b. Findings

No findings were identified.

.5 Annual Follow-up of Selected Issues: Safety-Related Electrical Relay Preventive Maintenance Program

a. Inspection Scope

The inspectors selected the following condition report for in-depth review to gain insights into the licensee's electrical relay preventive maintenance program:

- CAP 01521329; D5 KW Pick-up at BKR Closure <500kW.

As appropriate, the inspectors verified the following attributes during their review of the licensee's corrective actions for the above condition report and other related condition reports:

- 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;
- 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
- evaluation of the applicability of operating experience and communication of applicable lessons learned to appropriate organizations.

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

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

b. Findings

No findings were identified.

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

.1 (Closed) Licensee Event Report 05000282/2015–006-00: Quarterly Containment Spray Pump Surveillance Test Methodology

a. Inspection Scope

The inspectors reviewed information provided by the licensee regarding the August 4, 2015, identification of inadequate procedure steps within quarterly containment spray pump surveillance procedures (SPs) 1090A & B, and 2090A & B. Specifically, the SPs inappropriately credited Note 1 of TS 3.6.3 and created open flow paths from the Unit 1 and 2 containments under administrative control while vent and/or drain valves connected to the containment spray header were opened. The opening of these valves was to facilitate draining of the header and to verify no leakage past manual isolation valves during containment spray pump operation in recirculation mode. These actions that occurred over the prior three years represented conditions that could have prevented the fulfillment of the safety function of the Units 1 and 2 containments and, conditions that were prohibited by TS.

During the inspection, the inspectors reviewed the surveillance procedures, licensee CAP 01488454 that was generated as a result of the issue, the apparent cause evaluation, immediate corrective actions (SP changes), and longer term corrective actions. Documents reviewed are listed in the Attachment to this report. This licensee event report (LER) is closed.

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

b. Findings

One licensee-identified Non-Cited Violation (NCV) of very low safety significance (Green) was identified during the review of this LER. As a result, the inspectors documented information regarding this issue in Section 4OA7 of this inspection report.

.2 (Closed) Licensee Event Report 05000282/2016–002–00: Listed System Actuation – Motor-Driven Cooling Water Pump Auto-Start

a. Inspection Scope

The inspectors reviewed information provided by the licensee regarding the January 29, 2016, automatic actuation of the 121 motor-driven cooling water pump. Specifically, during post-maintenance testing of the 22 DDCLP, a momentary low pressure condition existed within the cooling water piping header. The 121 motor-driven cooling water pump is designed to automatically start if low pressure is sensed in the cooling water header to ensure continuity of flow to cooling water loads following a postulated event. Since low pressure actually existed in the cooling water header (valid actuation signal) the licensee submitted an LER for this event/condition based on 10 CFR 50.73(a)(2)(iv)(A) as an event or condition that resulted in automatic actuation of an emergency service water system that does not normally run and serves as an ultimate heat sink.

The inspectors reviewed licensee CAP 01510473 that was generated as a result of the issue, the apparent cause evaluation, and corrective actions (post-maintenance and SP

changes). Documents reviewed are listed in the Attachment to this report. This LER is closed.

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

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On July 7, 2016, the inspectors presented the inspection results to Mr. S. Northard, Site Vice President, and other members of the licensee 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:

- The inspection results for the areas of in-plant airborne radioactivity control and mitigation; and occupational dose assessment with Mr. D. Lapcinski, Acting Plant Manager, on April 1, 2016.

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

4OA7 Licensee-Identified Violations

The following violation of very low significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy for being dispositioned as an NCV:

- Prairie Island TS 3.6.3, “Containment Isolation Valves,” Required Action A.1 required, in part, isolation of the affected penetration flow path within 4 hours if one or more penetration flow paths with one containment isolation valve inoperable.

  Contrary to the above, since August 4, 2012 on 21 occasions for Unit 1 and 23 occasions for Unit 2 (three year reporting window), the licensee failed to isolate containment spray header penetration flow paths within 4 hours during the performance of quarterly containment spray pump surveillance procedures SP 1090A & 1090B and SP 2090A & 2090B. Specifically, the SPs inappropriately credited Note 1 of TS 3.6.3 and created open flow paths from the Unit 1 and 2 containments under administrative control while vent and/or drain valves connected to the containment spray header were opened. The opening of these valves was to facilitate draining of the header and to verify no leakage past manual isolation valves during containment spray pump operation in recirculation mode.

On August 4, 2015, the licensee generated CAP 01488454 which questioned whether use of TS 3.6.3 Note 1 to open the containment spray header vent and drain valves under administrative control was permissible. The licensee performed an apparent cause evaluation and determined that because the vent and drain valves were not considered part of a containment penetration flow path, Note 1 could not be applied. A past operability review was performed and it was determined that on multiple occasions (at 1-10 hour durations) over the prior three years, the vent/drain opening resulted in a 3/8" opening in the containment pressure boundary. Because the resultant leakage at peak containment pressure during a design basis accident (approximately 4 percent of the containment volume per day) would have exceeded the maximum allowable leakage rate, conditions that could have prevented the fulfillment of the safety function of the Units 1 and 2 containments and, conditions that were prohibited by TS, had occurred.

Because the inspectors answered "Yes" to question B.1 under Exhibit 3, "Barrier Integrity Screening Questions" of IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power," the inspectors transitioned to IMC 0609, Appendix H, "Containment Integrity Significance Determination Process." Because the leak rate through the vent/drain openings would not have exceeded greater than 100 percent of the containment volume per day at calculated peak containment internal pressure, the finding screened as very low safety significance (Green). The issues were entered into the licensee's CAP as CAP 01488454. Corrective actions included immediate quarantine of the affected SPs and subsequent revisions to the SPs and TS Bases.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

S. Northard, Site Vice President
T. Conboy, Director Site Operations
S. Sharp, Director Performance Improvement
W. Paulhardt, Plant Manager
D. Lapcinski, Assistant Operations Manager
J. Bjorseth, Engineering Director
H. Butterworth, Business Support Director
J. Boesch, Maintenance Manager
T. Borgen, Operations Manager
B. Boyer, Radiation Protection Manager
B. Carberry, Emergency Preparedness Manager
S. Martin, Performance Assessment Manager
J. Kivi, Regulatory Affairs Manager
P. Wildenborg, Health Physicist

U.S. Nuclear Regulatory Commission

K. Riemer, Chief, Reactor Projects Branch 2
R. Kuntz, Senior Project Manager, Office of Nuclear Reactor Regulation

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

05000282/2015–006–00	LER	Quarterly Containment Spray Pump Surveillance Test Methodology (Section 4OA3.1)
05000282/2016–002–00	LER	Listed System Actuation – Motor-Driven Cooling Water Pump Auto-Start (Section 4OA3.2)

Discussed

None

LIST OF DOCUMENTS REVIEWED

The following is a partial list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspector 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.

1R01 Adverse Weather Protection

- PM 4910; Thermographic Inspection of Prairie Island Components; Revision 7
- AB–2; Tornado/Severe Thunderstorm/High Winds; Revision 41
- C20.3 AOP12; Grid Voltages or Frequency Disturbances; Revision 7
- C20.3; Electrical Power System Security Analysis; Revision 23
- AB–4; Flood; Revision 50

1R04 Equipment Alignment

- C37.9; Control Relay, and Computer Room Ventilation; Revision 29
- C37.14; Service Building Ventilation System; Revision 14
- CAP 01519936; NRC Question: Impact to D5 with DSL Room Cooling Fan Issue; April 25, 2016
- CAP 01520295; Operability Determination for D2 Questioned by NRC; April 27, 2016
- CAP 01518675; D2 DSL Gen Air Compr Relief Chattering; May 13, 2016
- CAP 01521030; Aggregate Impact of D1/D2 Air Start Leaks Request by NRC; May 4, 2016
- CAP 01521036; Information Provided to NRC Incorrect and Not Timely; May 4, 2016
- CAP 01521038; SM OPS Notes; May 4, 2016
- NF–39255–1; Flow Diagram Diesel Generators D1 & D2; Revision 82
- NF–40155–5; Wiring Diagram 4.16KV Switchgear Bus 15 CUB. 5; Revision 76
- CAP 01519996; 2DG–26, D2 DSL Gen Reserve Air Reservoir Inlet Leaks; April 26, 2016
- CAP 01518675; SA–54–4 D2 DSL Gen Air Compr Relief Chattering; April 13, 2016
- B37B; Safeguards Chilled Water System Figure 4; Revision 10
- C37.11; Chilled Water Safeguard System Operation; Revision 27

1R05 Fire Protection

- FPEE–14–001; Fire Protection Engineering Evaluation of EC 1784 Modification Affecting Component Cooling Water System; May 12, 2014
- CAP 01520060; Load Sequencer Relay ERCS Points; April 26, 2016
- NE–236878; Train B 230 VAC Distribution Panel 135 CKT#5 Drawing; Revision 0
- NF–40276–8; Wiring Diagram Terminal Cabinet #1229; Revision 77
- NF–40208–3; Wiring Diagram Bus 2 Motor Control Center 1K; Revision 76
- NF–236879–2; Wiring Diagram 122 SFP HX Inlet Header Isolation Train B; Revision 1
- NF–39245–1; Flow Diagram Component Cooling System Unit 1; Revision 83
- OI 16–23; Operating Information for Unit 1 and Unit 2 Main Transformer Temperature Monitoring; May 11, 2016

1R06 Flooding

- FP–E–RTC–02; Equipment Classification; Revision 12
- CAP 01523301; 24–CL–110, “A” CL Water Return Header Has Small Through Wall Leak; May 25, 2016

1R11 Licensed Operator Requalification Program

- Simulator Exercise Guide P9116SE–0401; Cycle 16D As-Found Evaluation; Revision 0
- WO 535537; 2RM–07 Power Supply Replacement
- WO 544358; OPS PMT 122 CR Chiller

1R12 Maintenance Effectiveness

- Prairie Island Maintenance Rule Expert Panel Meeting; April 27, 2016
- Maintenance Rule Expert Panel Meeting Minutes; April 13, 2016
- CAP 01511608; (a)(1) Action Plan for Safety Related 4KV Buses; March 8, 2016
- CAP 01458004; (a)(1) to (a)(2) Determination for RE–01; April 26, 2016
- QF0585; (a)1 Determination Template; Revision 1
- QF0583; Maintenance Rule Preventable/Performance Criteria Evaluation; Revision 2
- QF0565; Maintenance Rule Functional, MSPI, and Equipment Reliability Clock Reset Failure Evaluation; Revision 10
- B37B; Safeguards Chilled Water System; Revision 10
- Prairie Island Maintenance Rule Basis Document; April 15, 2016
- Maintenance Rule Program Notebook; October 1, 2015
- CAP 01468169; 47022–0303 122 Control Room Water Chiller Tripped
- CAP 01434286; 122 Control Room Chiller Tripped Alarm
- CAP 01470207; 15 Switchgear Room Unit Cooler Fan Failure

1R13 Maintenance Risk Assessment and Emergent Work Control

- CAP 01517613; 21 Safeguards Exhaust Fan Failed to Start; April 1, 2016
- CAP 01518495; SP 2073A Unsatisfactory Due to Filter Heater; April 12, 2016
- SP 2073A; Monthly Train A Shield Building Ventilation System Test; Revision 12
- DBD SYS–14; Component Cooling System Design Bases Document; Revision 9
- CAP 01454622; SI–15–9 Packing is Leaking and is Damaged; November 4, 2014
- CAP 01519326; NRC Question: Was PRA Addressed for the Issue with SI–1–9; April 19, 2016

1R15 Operability Determinations and Functional Assessments

- CAP 01519472; Basis for Excluding 30” Main Steam High Energy Line Break in Question; April 20, 2016
- PI–M–025; Turbine Building High Energy Line Breaks; Revision 0
- EC22114; Evaluation of Room Heat-up for Bus 15, Bus 16, Bus 111 with New Cooler Motors Installed; Revision 0
- CAP 01518272; NOS ID: Manual Valves Safety Function Classification; April 8, 2016
- H10.1; ASME Inservice Testing Program; Revision 37
- SWI O-35; Emergency Operating Procedure Verification, Validation & Maintenance; Revision 24
- AB–3; Earthquakes; Revision 33
- CAP 01519664; Operability Determination Was Modified Based on NRC Input; April 21, 2016
- CAP 01519328; Past Operability Review Not Requested Immediately for D5; April 19, 2016
- CAP 01519331; NRC Question SI-15-9 Inoperability Tech Spec Entry; April 19, 2016
- CAP 01521329; D5 KW Pick-up at BKR Closure <500kW; May 9, 2016
- CAP 01521427; D6 Exhaust Damper Past Operability Evaluation; May 17; 2016
- CAP 01519126; Initial Calculation for SI-15-9 Leakage Was Inaccurate; April 18, 2016

1R19 Post-Maintenance Testing

- CAP 01520625; 122 Control Room Chiller Time Delay Relay Failed While Performing C37.11
- WO 532047–04; 21 RHR Heat Exchanger CC Inlet D70 Inspection; April 13, 2016
- CAP 01518368; 211D Breaker Issue Identified During Forensic / Troubleshoot; April 11, 2016
- 5AWI 3.12.4; Post-Maintenance Testing; Revision 23
- CAP 01518851; SI–15–9 Has a Broken Gland Follower; April 18, 2016
- CAP 01519181; NRC Questioned Adequacy of PMT performed on SI–15–9; April 19, 2016
- WO 545088–03; CD–34085 Gap Damper Failed to Close per SP 2091 PMT; May 5, 2016
- CAP 01521658; Unit 1 CFCU Damper Extent of Condition Inspection Not Complete; May 11, 2016
- CAP 01521388; Inactive Boric Acid Leak on Packing and Body to Bonnet; May 9, 2016
- CAP 01518425; Damper Counterweight Broke from CD–36051 Actuator; April 11, 2016
- WO 545352–09; 22 D6 DSL Room Exhaust Air Damper PMT; May 12, 2016
- TP 2296B; D6 Radiator Fans Weekly Run Test; Revision 9
- WO 543902–02; Rx Vessel Injection Line SI–15–9 Active Packing Leak; April 17, 2016
- CAP 01520020; 122 CR Chiller Oil Cooler Temp Regulating Valve
- CAP 01519817; 122 CR Chiller Oil Cooler Temp Not Controlling Correctly
- CAP 01519689; 122 Control Room Chiller Surging
- CAP 01519767; 5730404 122 Control Room Chiller High Refrigerant Pressure Switch Requires Testing
- CAP 01520248; New 122 CR Chiller Oil Cooler Temperature Regulating Valve Has Bypass Hole
- PM 3183–3; 122 Control Room Chiller Annual Inspection; Revision 25
- PM 3183–5; 122 Control Room Chiller Annual Inspection Vendor; Revision 1
- WO 544358; OPS: L PMT 122 Chiller Oil Cooler Temperature Regulating Valve

1R22 Surveillance Testing

- CAP 01521309; D5 DG Would Not Pick up Load Upon Start per SP 2093; May 9, 2016
- CAP 01520297; 2 GT XFMR Has Increased Temperature on B Phase; April 27, 2016
- WO 530186–01; SP 2093 DG Diesel Generator Monthly Slow Start; May 9, 2016
- SP 2093; D5 Diesel Generator Monthly Slow Start Test; Revision 97
- SP 2091; Monthly Containment Fan Coil Units Surveillance Test; Revision 28
- WO 530194–01; Unit 2 D6 Emergency Diesel System Fast Start Test; April 18; 2016
- SP 2307; D6 Diesel Generator 6 Month Fast Start Test; Revision 39
- CAP 01519111; Unit 2 D6 Engine 1 Crankcase High Pressure; April 18, 2016
- CAP 01519158; D6 Engine 2 HT Recirc Line Sample Cap Will Not Attach; April 18, 2016
- CAP 01519159; 2EG–3–16 D6 Engine 2 LT Sample Valve Leaking; April 18, 2016
- CAP 01521844; High Chlorides Sample Noted on SP 1089A; May 12, 2016
- CAP 01521757; BACC: 11 RHR Pit Trending – Inactive Leakage Monitoring; May 12, 2016
- CAP 01521763; BACC: RH–11–8 Inactive Packing Leakage; May 12, 2016
- CAP 01521797; Vent Able Void at Location 1RH–04 Was Cleared; May 12, 2016
- WO 530822–01; Unit 1 RHR Quarterly Test; May 12, 2016
- SP 1089A; Train A RHR Pump and Suction Valve from RWST Quarterly Test; Revision 24
- SP 1005; NIS Power Range Daily Calibration; Revision 46
- CAP 01520890; 1N42 Upward Power Spike While Locking Gain Pot; May 3, 2016
- CAP 01519616; Validation of 11 FCU Leak Not Performed in Timely Manner; April 21, 2016

1EP6 Drill Evaluation

- P9116SD–0401; 2016 EP May Drill, LOR Cycle 16D; May 16, 2016

2RS3 In-Plant Airborne Radioactivity Control and Mitigation

- FP–RP–SEN–02; Radiological Work Planning and Controls; Revision 3
- RPIP 1123; Alpha Characterization Smears; Revision 3
- RPIP 1214; Respiratory Protection Equipment Testing; Revision 22
- RPIP 1733; Use and Control of Vacuums in the Radiologically Controlled Area; Revision 4
- RPIP 1734; Control and Use of Portable Ventilation Units in the Radiologically Controlled Area; Revision 4
- Grade D Air Sample Analysis; dated 2015 Records
- MSA SCBA Flow Test Results: August 2015
- Job Performance Measure; Donning a MSA SCBA; Revision 2
- Prairie Island Plant Alpha Characterization Study; dated February 3, 2016
- Respirator Usage Qualification Records; Various Records
- Respiratory Protection Checks; dated October 6, 2015
- Letter; Elimination of the 715' Auxiliary Building CAM Location; dated August 22, 2002
- Letter, Strategic CAM Locations; dated May 31, 1996
- CAP 01437369; Breathing Air Test Results Reported as Failed; dated July 7, 2014
- CAP 01476156; SFP Vent OOS Challenges Good Effluent Controls; dated April 24, 2015
- CAP 01465015; Lapel Air Sample not Counted IAW RPIP 1204; dated February 5, 2015
- CAP 01491339; Untimely Respirator Fit Dates in LMS; dated August 27, 2015
- CAP 01496048; Fire Brigade Scott SCBA Failed Quarterly Function Check; dated November 30, 2015
- CAP 01501454; Unauthorized JL Shepherd Calibrator Maintenance; dated November 12, 2015
- WO 00517348; Quarterly Watchstand ER Verification; dated September 25, 2015

2RS4 Occupational Dose Assessment

- Exposure Correction Radiation Occurrence Reports; dated 2014–2015
- Radiation Occurrence Reports; Various Records
- 2015 Prairie Island Isotopic Mix Evaluation; Undated
- 2015 Annual Area TLD Trending; dated February 3, 2016
- Declared Pregnant Worker Dosimetry Records; Various Records
- FP–RP–DP–01; Dosimetry Program; Revision 7
- FP–RP–IDA–01; Internal Dose Assessment; Revision 2
- RPIP 1107; Fetal Protection Program; Revision 11
- TP1514; Quarterly Emergency Plan Test Equipment; Revision 31
- RWP 160059; Dose Restricted Rad Workers; Revision 0
- CAP 01421049; TLD Results not Processed Correctly; dated March 3, 2014
- CAP 01436797; Neutron Studies need Updating; dated July 30, 2014
- CAP 01439937; RWP Violation/Unauthorized Entry to Neutron Area; dated July 24, 2014
- CAP 01468310; Unexpected TLD Results; dated March 15, 2014
- CAP 01469421; TLD Results do not Correspond to Electronic Dosimeter Sums; dated March 10, 2015
- CAP 01515233; OE: NRC TIA Issued on Dose Reporting; dated March 11, 2016
- TLD Interlaboratory Comparison Data; dated 2014–2015
- Whole Body Counter Radionuclide Library Listing Report; dated March 30, 2016

- ED Calibration Records, dated December 3, 2015
- Mirion Technologies NVLAP Accreditation; dated June 11, 2015

4OA1 Performance Indicator Verification

- FP–E–MSPI–01; Mitigating Systems Performance Index (MSPI); Revision 8
- MSPI Basis Document; Prairie Island Nuclear Generating Plant; Revision 21

4OA2 Identification and Resolution of Problems

- CAP 01520596: NRC Question About Breaker 15.-4 Cable; April 29, 2016
- CAP 01473550; NCTS Due to No Time Limit for 3.8.7.A; April 9, 2015
- 1C20.8 AOP1; Abnormal Operation Instrument AC Inverters; Revision 12
- B20.8; Instrument AC Distribution Unit 1; Revision 12
- CAP 01519459; NRC Question RE LER 2015–005–00 and C18.1; April 20, 2016
- CAP 01495080; 121 Control Room Chiller Past Operability Evaluation; October 6, 2015
- EC 22114; Evaluation of Room Heat-up for Bus 15, Bus 16, Bus 111 With New Cooler Motors Installed, June 5, 2013
- EC 21177; Temperature Profile for Unit 1 Bus 15, 16, 111 and 121 HELB Evaluation; January 21, 2013
- CAP 01520517: ECE Evaluation Identifies Further EOC for AR 1517705; April 29, 2016
- 1C20.8 AOP1; Abnormal Operation Instrument AC Inverters; Revision 12
- B20.8; Instrument AC Distribution Unit 1; Revision 12
- CAP 01526410; OE: Part 21 ABB Inc. Deviation for Class 1E Solid State Relay; June 27, 2016
- CAP 01507609; Test Equipment Out of Calibration
- CAP 01512363; 11 Auxiliary Containment Building Chiller Tube Sheet Eroded Excessively
- CAP 01508947; U2; D2 Both Engines Crankcase Pressure High – January 2016
- CAP 01527366; Recent Trend in Operator Configuration Control Events
- CAP 01523879; 1N43 Erratic During Adjustment
- CAP 01521032; Prioritization of Work Requests lessons Learned
- CAP 01520890; 1N42 Upward Power Spike While Locking Gain Pot
- CAP 01519361; Indication of 1N42 Step Change From 100.0% to 100.7%
- CAP 01473529; Use of LCO Action Alternative Choice During SP2006B
- CAP 01425636; 47013–0203 NIS Power Range Channel Deviation
- FP–PE–RLY–01; Relay Program; Revision 1

4OA3 Follow-Up of Events and Notices of Enforcements Discretion

- CAP 01510473; Auto-Start of 121 Motor Driven Cooling Water Pump
- CAP 01488454; Question about Quarterly Containment Spray Pump SP Method

LIST OF ACRONYMS USED

AC	Alternating Current
ACE	Apparent Cause Evaluation
ADAMS	Agencywide Document Access Management System
AFW	Auxiliary Feedwater
CAP	Corrective Action Program
CFR	Code of Federal Regulations
DDCLP	Diesel-Driven Cooling Water Pump
EDG	Emergency Diesel Generator
HELB	High Energy Line Break
IEEE	Institute of Electrical & Electronic Engineers
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IPEEE	Individual Plant Examination of External Events
IST	In-Service Test
kV	Kilovolt
LER	Licensee Event Report
MSPI	Mitigating System Performance Index
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
PARS	Publicly Available Records System
PI	Performance Indicator
RHR	Residual Heat Removal
SCBA	Self-Contained Breathing Apparatus
SP	Surveillance Procedure
SSC	System, Structure, and Component
TS	Technical Specification
TSO	Transmission System Operator
USAR	Updated Safety Analysis Report
WO	Work Order

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Sincerely,

/RA/

Kenneth Riemer
Branch 2
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Docket Nos. 50–282; 50–306; 72–010
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