



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

May 9, 2018

Mr. Scott Sharp  
Site Vice President  
Prairie Island Nuclear Generating Plant  
Northern States Power Company, Minnesota  
1717 Wakonade Drive East  
Welch, MN 55089-9642

**SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2—NRC  
INTEGRATED INSPECTION REPORT 05000282/2018001  
AND 05000306/2018001**

Dear Mr. Sharp:

On March 31, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Prairie Island Nuclear Generating Plant, Units 1 and 2. On April 12, 2018, 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 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 Enforcement Policy.

If you contest the violation or significance of the NCV, 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.

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/*

Kenneth Riemer, Chief  
Branch 2  
Division of Reactor Projects/Safety

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

Enclosure:  
IR 05000282/2018001; 05000306/2018001

cc: Distribution via LISTSERV®

Letter to S. Sharp from K. Riemer dated May 9, 2018

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2—NRC  
INTEGRATED INSPECTION REPORT 05000282/2018001  
AND 05000306/2018001

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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: 05000282/2018001; 05000306/2018001

Enterprise Identifier: I-2018-001-0041

Licensee: Northern States Power Company, Minnesota

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

Location: Welch, MN

Dates: January 1 through March 31, 2018

Inspectors: L. Haeg, Senior Resident Inspector  
P. LaFlamme, Resident Inspector  
A. Shaikh, Senior Reactor Inspector  
S. Bell, Health Physicist  
E. Fernandez, Reactor Inspector

Approved by: K. Riemer, Chief  
Branch 2  
Division of Reactor Projects

Enclosure

## SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring licensee performance by conducting an integrated quarterly inspection at Prairie Island Nuclear Generating Plant, Units 1 and 2 in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information. Additional tracking items are summarized in the table below. One Licensee-identified NCV and one minor violation are documented in report section 71153.

### List of Findings and Violations

None.

### Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000306/2017002-00	Reactor Coolant System Shutdown Communication Live Vent Through Wall Defect	71153	Closed
LER	05000306/2017003-00	Both Containment Spray Pump Control Switches in Pull-Out in Mode 4	71153	Closed
LER	05000282/2018001-00	121 Motor Driven Cooling Water Pump Auto Start due to Smoking Packing on 11 Cooling Water Pump	71153	Closed
URI	05000282/2017008-01	Questions Regarding the Manual Override of the Automatic-Closure Function of Component Cooling System Valves	71111.17T	Closed
URI	05000306/2018001-01	Questions Regarding Corrective Action Program, Use of Operating Experience, and Qualification of the 21 125 VDC Battery due to Cell Lid Cracking	71111.15	Open
URI	05000282/2018001-02	Questions Regarding the Corrective Action and Aging Management Programs Following the Discovery of 122 Diesel Driven Cooling Water (DDCL) Pump Fuel Oil Storage Tank (FOST) Vent Piping Degradation	71111.18	Open

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## 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 or troubleshooting activities.

## INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed plant status activities described in IMC 2515 Appendix D, "Plant Status" and conducted routine reviews using IP 71152, "Problem Identification and Resolution. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards."

## REACTOR SAFETY

### 71111.01—Adverse Weather Protection

#### Impending Severe Weather (1 Sample)

The inspectors evaluated readiness for impending adverse weather conditions for Cold Weather on January 4, 2018 (D5 and D6 emergency diesel generator (EDG) building).

### 71111.04—Equipment Alignment

#### Partial Walkdown (3 Samples)

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

- (1) 21 cooling water (CL) system during the week of January 8, 2018;
- (2) 12 and 22 DDCL ventilation system on January 19, 2018; and
- (3) Offsite power sources with 345 kV Bus 2 out of service during the week of March 5, 2018.

#### Complete Walkdown (1 Sample)

The inspectors evaluated system configurations during a complete walkdown of the Unit 2 safety injection system during the weeks of January 22 and 29, 2018.

#### 71111.05AQ—Fire Protection Annual/Quarterly

##### Quarterly Inspection (4 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) Fire Area 41A, Screenhouse, Elevation 695’;
- (2) Fire Area 18, Relay and Cable Spreading Room, Elevation 715’;
- (3) Fire Detection Zone 11, Fire Areas 20 & 81; Bus 15 & 16 Switchgear Rooms, Elevation 715’; and
- (4) Fire Zone 97, D5/D6 EDG Building.

#### 71111.06—Flood Protection Measures

##### Internal Flooding (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the Unit 1 containment spray pump room during the week of February 5, 2018.

#### 71111.11Q—Licensed Operator Requalification Program and Licensed Operator Performance

##### Operator Performance (1 Sample)

The inspectors observed and evaluated a Unit 1 reduction in power to approximately 40 percent for main turbine testing and main condenser inspections during the week of March 12, 2018.

##### Operator Requalification (1 Sample)

The inspectors observed and evaluated simulator requalification training on March 16, 2018.

#### 71111.12—Maintenance Effectiveness

##### Routine Maintenance Effectiveness (2 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

- (1) Unit 1 and 2 4.16kV AC electrical systems; and
- (2) Unit 2 component cooling water system.

#### 71111.13—Maintenance Risk Assessments and Emergent Work Control (4 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

- (1) D2 EDG exciter pushbutton failure, lockout, and troubleshooting activities on January 29, 2018;
- (2) Unit 2 containment sump A in-leakage on February 20, 2018;
- (3) D6 EDG return to service issues during the week of February 26, 2018; and
- (4) Work week 1811 unplanned Technical Specification (TS) Limiting Conditions for



Operation (LCOs) (screenhouse safeguards exhaust fan & Bus 122 room cooling fan motors) during the week of March 19, 2018.

71111.15—Operability Determinations and Functionality Assessments (5 Samples)

The inspectors evaluated operability determinations for the following action requests (ARs):

- (1) AR 501000004740; 121S and 122N Relay Room Motor Amp Past Operability Evaluation on January 2, 2018;
- (2) AR 501000009553; NRC Question On 21 Battery Lids on February 20, 2018;
- (3) AR 501000008489; Relay 1X32215 Contacts Sticky on February 21, 2018;
- (4) AR 501000007896; Safeguard Strainer Room Screenhouse Seismic Evaluation on February 26, 2018; and
- (5) AR 501000009528; D1 Turbocharger Outlet Bellows Leak on March 21, 2018.

71111.17T—Evaluations of Changes, Tests and Experiments (No Sample)

The inspectors performed a review of Unresolved Item (URI) 5000282/2017008–01, “Questions Regarding the Manual Override of the Automatic-Closure Function of Component Cooling System Valves.” This review did not constitute an inspection sample.

71111.18—Plant Modifications (1 Sample)

The inspectors evaluated a permanent modification associated with:

- (1) AR 501000005894; Hole in 122 DDCL Pump Oil Storage Tank Vent.

71111.19—Post Maintenance Testing (5 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) 22 steam generator steam flow and level indication circuit card replacement on January 22, 2018;
- (2) 122N relay room and B event monitoring room unit cooler motor replacement on January 31, 2018;
- (3) Testing of D2 EDG following exciter stop pushbutton replacement on February 1, 2018;
- (4) Testing of MV–32129, 22 residual heat removal component cooling water inlet valve on January 31, 2018; and
- (5) Bus 122 room cooler fan motor replacement on March 21, 2018.

71111.22—Surveillance Testing

The inspectors evaluated the following surveillance tests:

Routine (2 Samples)

- (1) SP 2116; Unit 1 Monthly Power Distribution Map Surveillance Test on January 23, 2018; and
- (2) SP 1073A; Unit 1 Train A Shield Building Ventilation System on February 6, 2018.

In-service (1 Sample)

(1) 22 DDCL Pump Monthly SP on March 23, 2018.

71114.06—Drill Evaluation

Drill/Training Evolution (1 Sample)

On January 25, 2018, the inspectors evaluated a simulator training session with Drill & Exercise Performance (DEP) opportunities.

**RADIATION SAFETY**

71124.03—In-Plant Airborne Radioactivity Control and Mitigation

Engineering Controls (1 Sample)

The inspectors evaluated airborne controls and monitoring.

Use of Respiratory Protection Devices (1 Sample)

The inspectors evaluated respiratory protection.

71124.04—Occupational Dose Assessment

Source Term Characterization (1 Sample)

The inspectors evaluated the licensee's source term characterization.

External Dosimetry (1 Sample)

The inspectors evaluated the licensee's external dosimetry program.

Internal Dosimetry (1 Sample)

The inspectors evaluated the licensee's internal dosimetry program.

Special Dosimetric Situations (1 Sample)

The inspectors evaluated the licensee's performance for special dosimetric situations.

**OTHER ACTIVITIES—BASELINE**

71151—Performance Indicator Verification (8 Samples)

The inspectors verified licensee performance indicators submittals listed below:

- (1) IE01: Unplanned Scrams per 7000 Critical Hours—2 Samples (01/01/2017-12/31/2017);
- (2) IE03: Unplanned Power Changes per 7000 Critical Hours—2 Samples (01/01/2017-12/31/2017);

- (3) IE04: Unplanned Scrams with Complications (USwC)—2 Samples (01/01/2017-12/31/2017); and
- (4) MS05: Safety System Functional Failures (SSFFs)—2 Samples (01/01/2017-12/31/2017).

71152A—Problem Identification and Resolution

Annual Follow-Up of Selected Issues (1 Sample)

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

- (1) Apparent Cause Evaluation 500000283593; Adverse Trend in Technical Rigor.

71153—Follow-Up of Events and Notices of Enforcement Discretion Events

Licensee Event Reports (3 Samples)

The inspectors evaluated the following licensee event reports which can be accessed at <https://lersearch.inl.gov/LERSearchCriteria.aspx>:

- (1) Licensee Event Report (LER) 5000306/2017002–00: Reactor Coolant System Shutdown Communication Live Vent Through Wall Defect;
- (2) LER 5000306/2017003–00: Both Containment Spray Pump Control Switches in Pull-out in Mode 4; and
- (3) LER 5000282/2018001–00: 121 Motor Driven Cooling Water Pump Auto Start due to Smoking Packing on 11 Cooling Water Pump.

**INSPECTION RESULTS**

71111.15—Operability Determinations and Functionality Assessments

Unresolved Item (Open)	Questions Regarding Corrective Action Program, Use of Operating Experience, and Qualification of the 21 125 VDC Battery due to Cell Lid Cracking URI 5000306/2018001–01	71111.15—Operability Determinations and Functionality Assessments
<p><u>Description:</u></p> <p>During the week of February 12, 2018, the inspectors performed a walkdown of the 21 125 VDC battery. The inspectors noted that the majority of the 58 battery cells that made up the 21 battery system had various degrees of cracks on the cell lids, including some with cracks that were completely through the lid. During a cursory review of the corrective action program, vendor information, and station testing and maintenance procedures, the inspectors noted that all cracks identified since 2009 would not be addressed until the next planned cell replacement (originally slated for the fall of 2017 Unit 2 refueling outage).</p>		

On February 22, 2018, the inspectors presented the following questions to the licensee:

- Did the cracking (especially those going through the lid) affect the qualification of the 21 battery? The cracks could allow entry of foreign material and/or prevent the cell flame arrestors from performing their function;
- Was there sufficient identification and tracking of battery lid cracks to monitor for changes over time? Since 21 battery cell lid cracks had been identified on various cells beginning in 2009, and the resolution was to replace the cells in 2017, there didn't appear to be monitoring of the cracks in the interim; and
- Had the licensee interfaced with the vendor and verified that all the vendor recommendations were properly dispositioned? Similarly, was the site aware of applicable industry operating experience regarding battery lid cracking?

The inspectors noted that the batteries had passed all required TS surveillance tests, so there was no immediate safety concern.

The licensee responses on March 2 included a copy of a letter from the battery vendor to a different facility with recommendations to seal the cracks with epoxy to ensure flame arrestor functionality and to preclude entry of foreign material. The responses also included an email communication between the site and the vendor verifying that the recommendations applied to Prairie Island.

The inspectors reviewed the responses to the above questions and concluded that they did not support the basis for full qualification of the 21 battery. Specifically, the vendor recommendation was not in the licensee's corrective action program and it was unclear if it would be added. Additionally, there was a recognition of deficiencies in existing visual inspection practices (conducted as part of monthly and quarterly surveillance tests), but no stated action to resolve them. The inspectors concluded that the licensee should perform a formal evaluation of the 21 battery to determine its qualification.

On March 14, the inspectors raised this issue in a meeting with the licensee. Following the meeting, the licensee initiated AR 50100009552, declared the 21 battery operable-but-degraded, and initiated a prompt operability determination (POD). The POD was completed on March 21, and concluded that the 21 battery was operable and fully qualified. The licensee also initiated a maintenance action to seal the cracks as referenced in the vendor recommendation letter, but strictly for personnel safety reasons.

Subsequently, the inspectors again voiced concerns with the qualification of the 21 battery. The licensee stated that the POD was being revised and would likely conclude that the 21 battery was not fully qualified (i.e. degraded or non-conforming) due to the lid cracks and that changes to the visual inspections and application of epoxy sealant would serve as compensatory measures. On March 31, the POD revision was completed; however, the revised POD again concluded that the 21 battery was operable and fully qualified based, in part, on newly identified vendor testing that demonstrated no impact on specified safety function. The POD did not provide specifics on how existing visual inspections were adequate to prevent foreign material intrusion and detect new or worsened cracks or otherwise provide sufficient justification to support the conclusion that it was "fully qualified." Additionally, the POD no longer referenced the vendor recommendations to seal the cracks.

At the end of the inspection period, the inspectors determined that more information was needed to determine whether performance deficiencies existed associated with the licensee's

identification and evaluation of battery lid cracking since 2009 and to date; whether the operability process had been properly followed; and whether the station had appropriately dispositioned vendor and operating experience information regarding battery lid cracking. Prior to the exit meeting being held for the inspection period, the licensee documented two additional ARs to perform individual cell inspections and identify cracks needing repair (501000010411), and to re-consider the conclusions of the revised POD considering Prairie Island USAR Section 8.5.7 that stated, in part, "Battery Maintenance and surveillance testing is performed in accordance with the recommendations of the manufacturers" (501000010554).

Planned Closure Actions: To resolve this item, the inspectors will review the final POD, any planned actions to revise the visual inspection procedures and maintenance practices, any planned actions to perform epoxy repairs per the vendor recommendations, and any evaluations regarding programmatic (operability, corrective action program, operating experience) and human performance aspects surrounding the issue (before and after questioning by the inspectors on February 22, 2018).

Corrective Action Program References: ARs 501000009553, 501000010411, and 501000010554.

71111.17T—Evaluations of Changes, Tests, and Experiments

Unresolved Item (Closed)	Questions Regarding the Manual Override of the Automatic-Closure Function of Component Cooling System Valves URI 5000252/2017008-01	71111.17T— Evaluations of Changes, Tests, and Experiments
<p><u>Description:</u></p> <p>The inspectors identified an unresolved item regarding manual override of the auto-closure function of component cooling water system valves. Specifically, the inspectors noted that the system was not protected from tornado generated missiles when valves CV-39153 &amp; CV-39154 are opened per procedure to support system alignments. The inspectors initially determined that further review was needed to determine if Technical Specifications are met if/when CV-39153 &amp; CV-39154 are maintained open.</p> <p>Corrective Action Reference: AR 501000001642; 2017 50.59 Potential PD Evaluation 1133; 08/15/2017</p> <p>Closure Basis: The inspectors reviewed the license basis documentation, procedures, and interviewed licensee personnel, and did not identify any licensee failure to meet a requirement or standard.</p>		

71111.18—Plant Modifications

Unresolved Item (Open)	Questions Regarding the Corrective Action and Aging Management Programs Following the Discovery of 122 DDCLP FOST Vent Piping Degradation URI 05000252/2018001-02	71111.18—Plant Modifications
<p><u>Description:</u></p> <p>On November 28, 2017, the inspectors identified a small hole in the vent piping for the below-ground 122 DDCLP FOST (located outside and adjacent to the plant screenhouse). The station generated AR 50100005894 and the shift manager declared the supported 22 DDCL pump operable-but-degraded with a temporary procedure change to AB-4, "Flood" as a compensatory measure and wrapping of the pipe to preclude foreign material intrusion. The site backed up the immediate operability determination with a POD, evaluated past operability (no issues identified) and, subsequently replaced the affected portion of the pipe to restore full qualification. The inspectors concluded that these short term actions were acceptable to address the issue, but identified several concerns regarding prior actions to address the vent pipe corrosion.</p> <p>On March 1, 2018, the inspectors were provided the final evaluations for AR 50100005894. After review, the inspectors were concerned that the evaluations did not perform a sufficient review of:</p> <ul style="list-style-type: none"> <li>• whether the corrective action program properly dispositioned corrosion of the pipe when first identified in July of 2015;</li> <li>• whether the corrective action program and aging management program (AMP) performed as required to correctly classify and correct and/or manage the corrosion aging mechanism; and</li> <li>• whether the extent of cause/condition for the adjacent 121 DDCLP FOST vent pipe was properly addressed.</li> </ul> <p>The inspectors passed these concerns to individuals in the engineering and regulatory affairs departments, but the licensee then stated that the evaluations provided on March 1, were, in actuality, still in a revision/review phase. The licensee stated that the final evaluations would likely address the inspectors' concerns.</p> <p>On March 22, the inspectors were provided the final evaluations, but it appeared that only minor changes were made and the inspector's concerns were not addressed. On March 28, the inspectors again voiced their concerns with the licensee and two new ARs (501000010169 and 501000010178) were created documenting the following:</p> <ul style="list-style-type: none"> <li>• the AR written identifying corrosion of the piping in July of 2015 was not evaluated under the AMP, the condition was determined to be operable and fully qualified, and it was closed to a work request to re-coat the piping but was never performed.</li> <li>• the AR written in April of 2016 again noted the corrosion, but was closed to a non-conservative evaluation, the issue was not evaluated under the AMP, operability was again assessed as operable and fully qualified, and a work request was issued to apply a coating (not completed until May of 2017).</li> </ul>		

- the AMP engineer was not consulted in 2015 or 2016 to determine if/how the issue fit into the AMP requirements for increased monitoring, development of acceptance criteria, and final corrective actions.

Planned Closure Actions: To resolve this item, the inspectors will review planned actions regarding the degraded 121 DDCLP FOST vent pipe, further extent of condition reviews, and review planned licensee condition and causal evaluations regarding programmatic and/or human performance aspects of the issue.

Licensee Actions: At the end of the inspection period, the licensee began excavation activities to replace the 121 DDCLP FOST vent pipe and had apparent cause and extent of condition evaluations in progress.

Corrective Action Program References: ARs 501000005894, 501000010169 and 501000010178.

71152A—Problem Identification and Resolution

Observation	71152—Problem Identification and Resolution
<p>The inspector’s assessment of ACE 500000283593 was that the licensee appeared to focus on common and contributing causes for various prior issues where engineering rigor was not satisfactory. Upon completing their review of the ACE, the inspectors questioned whether two additional examples of an apparent ongoing lack of rigor associated with URIs 5000306/2018001–01 and 5000252/2017008–01 discussed above could have been prevented based on corrective actions taken from the ACE. In response, engineering management acknowledged the underlining apparent causes to be behaviorally based, and increased mentoring, coaching, and oversight by engineering leadership was ongoing at the end of the inspection period. The inspectors concluded that ongoing engineering department initiatives were in place and continuing at the end of the inspection period, and continued monitoring was appropriate to verify sustainability.</p>	

71153—Follow-Up of Events and Notices of Enforcement Discretion

Minor Violation	71153—Follow-up of Events and Notices of Enforcement Discretion
<p>Minor Violation: For LER 5000306/2017002–00 “Reactor Coolant System Shutdown Communication Line Vent Through Wall Defect”, the inspectors reviewed pictures from October of 2015 and October of 2017 of boric acid deposits at the upstream side of the socket weld of valve 2RC–8–37 and the licensee’s Equipment Cause Evaluation dated December 13, 2017 (AR 501000003738). Based on this review, boric acid deposits indicative of leakage existed at this degraded weld location in 2015 and recurred in 2017. The licensee had not recognized this condition as evidence of an ongoing pressure boundary leak during this operating period. Based upon discussions with the licensee staff, the inspectors concluded that leakage of reactor coolant from the socket weld of valve 2RC–8–37 could not be isolated in Mode 1 using valves upstream because of the high radiation levels and personnel safety issues (e.g. heat and potentially high pressure steam if a fault progressed to rupture). Therefore, leakage from a through-wall fault at this location represented pressure boundary leakage and operation with this type of leakage is prohibited in Modes 1–4 by</p>	

Technical Specification Limiting Condition of Operation 3.4.14. The licensee documented this violation in AR 501000003738, and LER 500306/2017002-00.

Screening: The portion of the reactor coolant pressure boundary affected by this leak was part of the Code Class 1 pressure boundary and the faulted location did not affect the functional capability of any safety system since the leak was very small and within the capacity of the charging system. Therefore, the inspectors applied the IMC 0612 Appendix B "Issue Screening" process and answered "no" to the more than minor questions for this violation because the licensee determined that no loss of safety functions occurred.

Violation: Failure to comply with TS LCO 3.4.14 associated with past operation of Unit 2 with pressure boundary leakage constitutes a minor violation that is not subject to enforcement action in accordance with the NRC's Enforcement Policy.

Licensee Identified Non-Cited Violation	71153—Follow-up of Events and Notices of Enforcement Discretion
This violation of very low safety significant was identified by the licensee and has been entered into the licensee corrective action program and is being treated as a Non-Cited Violation, consistent with Section 2.3.2 of the Enforcement Policy.	
<p><u>Enforcement:</u></p> <p>Violation: Prairie Island Technical Specification 3.0.4 states, in part, that when an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time.</p> <p>Contrary to the above, at 0303 hours on November 12, 2017, during startup activities from a Unit 2 refueling outage, the licensee entered MODE 4 with both containment spray pump control switches in pull-out and therefore not OPERABLE as required by LCO 3.6.5 that required two containment spray trains OPERABLE in MODE 4.</p> <p>Significance/Severity Level: The finding was of very low safety significance (Green) because it did not degrade the ability to close or isolate containment and did not degrade the physical integrity of reactor containment.</p> <p>Corrective Action Program Reference: AR 501000005299.</p>	

## EXIT MEETINGS AND DEBRIEFS

The inspectors confirmed that proprietary information was controlled to protect from public disclosure. No proprietary information was documented in this report.

- On February 16, 2018, the inspectors presented the 71124.03 and 71124.04 inspection results to Mr. T. Conboy, Director of Site Operations, and other members of the licensee staff.
- On April 12, 2018, the inspectors presented the overall quarterly integrated inspection results to Mr. S. Sharp, Site Vice President, and other members of the licensee staff.



### **THIRD PARTY REVIEWS**

The inspectors reviewed World Association of Nuclear Operators/Institute of Nuclear Power Operations reports that were issued during the inspection period.

### **DOCUMENTS REVIEWED**

#### 71111.01—Adverse Weather Protection

AR 501000009559; Trending Oil Results on D5/D6 Rad Fans; 03/16/2018  
WO 00356590-02; TP 1676 Annual Meteorological Instruments Calibration; 04/06/2008  
TP 1676; Meteorological Instrument Calibration; Revision 10  
WO 00357688-01; TP 1677 Monthly Meteorological Instrumentation; 01/14/2009  
WO 700011943; D6 Building Ventilation Instruction Calibration; 12/11/2017  
AR 501000007124; D5/D6 Diesel Temperature Limit; 01/01/2018  
DBD SYS-38A; Design Bases Document for the Emergency Diesel Generator System  
AR 501000006819; Seasonal Readiness Program FP-WM-SR-01; 01/02/2018  
2C37.10; D5/D6 Diesel Generator Building HVAC; Revision 11  
AR 501000007616; PMT Documentation Enhancement; 01/24/2018  
AR 501000007584; MET Tower ERCS Points Not Checked; 01/23/2018

#### 71111.04—Equipment Alignment

NF-88616-2; Electrical Heat Tracing Isometric Unit 2 Safety Injection Pump Suction;  
Revision 75  
C1.1.18-2; S1, CS, CA, and HC System Checklist Unit 2; Revision 49  
C1.1.20.5-1; Unit 1 4.16kV System Switches and Indication Checklist; Revision 27  
C1.1.20.5-2; Unit 2 4.16kV System Switches and Indication Checklist; Revision 29  
Heating, Ventilating & Air Conditioning Project 2121-7594 (R/E 6197); Revision 0  
NE-40009; Annulus Vent Recirculation Fan Discharge Damper; Sheet 144; Revision CY  
C37.5; Screenhouse Normal Ventilation; Revision 9  
AR 501000007481; NRC Question on 12 and 22 DD Clg Pump; 01/19/2018  
FP-R-LIC-06; NRC Question Response Form-Outside Temperature; 01/2018  
AR 501000007044; 11 CL PMP Packing Smoke; 01/06/2018  
AR 501000007050; 21 Cooling Water Pump Packing Warm; 01/08/2018  
AR 501000006858; Emrg Gen Bldg FO Tank Rm Htr Not Working; 01/03/2018  
AR 501000007185; Expectations for Accuracy of Documentation; 01/11/2018  
AR 501000007092; 47019-0506 Alarm upon 121 Pump Start; 01/10/2018

#### 71111.05AQ—Fire Protection Annual/Quarterly

Appendix A; Fire Detection Zone 11; Revision 35F5  
Appendix F; Table 6-1 Fire Hazards Analysis Matrix Fire—Area 41A; Revision 34F5  
F5 Appendix K—Fire Protection Systems Functional Requirements; Diesel Driven Cooling  
Water Pumps; Revision 24  
AR 501000006871; 2 FBM's Didn't Get 2 Fire Drills in 2017; 01/01/2018

#### 71111.06—Flood Protection Measures

H36; Plant Flooding; Revision 11  
5 AWI 8.9.0; Internal Flooding Drainage Control; Revision 20

## 71111.11—Licensed Operator Requalification Program and Licensed Operator Performance

1C1.4; Unit 1 Power Operation; Revision 65

AR 501000007687; Crew Failed Cycle 18A Simulator Eval; 01/24/2018

AR 501000007770; Trend in Simulator Evaluation Failures; 01/25/2018

AR 501000009799; SR RPS Failed RP Cycle 1 Continuing Training; 03/20/2018

LOR Cycle 18B Cycle SIM Session #3—Licensed Operator Requalification; Revision 0

## 71111.12—Maintenance Effectiveness

Prairie Island Maintenance Rule Bases Document

FP-E-MR-01; Maintenance Rule Process; Revision 9

FP-E-MR-02; Maintenance Rule Scoping; Revision 10

FP-E-MR-03; Maintenance Rule Monitoring; Revision 7

WO 700005259–0090; NEPA 805 EC 25120 CT12 4kV Breaker Addition; 12/22/2017

WO 00540589; Troubleshoot and Repair BUS 15 Load Sequencer; 11/09/2016

AR 501000007217; Unable to Hang Tags on New Unlabeled Breaker; 01/13/2018

AR 501000004433; Unexpected Plant Response Breaker 25–17; 10/28/2017

AR 501000007689; Bus 26 Relay 27–UV Out of Range; 01/25/2018

AR 1538329; 4kV Disconnect Danger Tag Placement Incorrect; 10/18/2016

AR 1534190; Breaker CT–BT112 Relay Chattering; 09/14/2016

AR 1520596; NRC Question about Breaker 15–4 Cable; 06/22/2016

SP 2322; Safeguards Buses Weekly Inspection—Operating; Revision 31

WO 700015558; SP 2322 4.16 kV Safeguards Bus Weekly Inspection

SP 2856; Monthly 4kV Bus 26 Undervoltage Relay Test (Omicron); Revision 6

## 71111.13—Maintenance Risk Assessments and Emergent Work Control

AR 501000007811; D2 Lockout during Slow Start Test; 01/29/2018

AR 501000007845; D2 PMT Plan Improper for Conditions; 01/30/2018

AR 501000008319; Increase in U2 Containment Sump A Operation; 02/14/2018

AR 501000008527; U2 Containment Sump A Consecutive Days Runtime; 02/17/2018

AR 501000008542; U2 Containment Sump A 3 Days With Runtime; 02/18/2018

AR 501000008538; Unit 2 Containment Sump A Pump Runtime; 02/19/2018

AR 501000008620; Unexpected Annunciator 47516-0504; 02/19/2018

AR 501000008640; Unit 2 Containment Sump A Consecutive Run Day #5; 02/20/2018

AR 501000008853; Strong Odor From D6 Serv Pnl 6; 02/26/2018

AR 501000008917; D6 Maintenance Run Issues; 02/27/2018

AR 501000008923; Excitation Voltage and Current on D6; 02/27/2018

AR 501000008950; Abnormal Conditions During D6 Maint Run; 02/27/2018

AR 501000009350; D5 DG Common Cause Documentation; 03/09/2018

1C20.7; D1/D2 Diesel Generators; Page 1 of 108; Revision 48

## 71111.15—Operability Determinations and Functionality Assessments

AR 501000007074; Relay Room Temperature Limit Question; 01/09/2018

AR 501000010535; D1 Bellow POD; 04/09/2018

AR 501000009850; Revise D1 Bellows Crack POD; 03/20/2018

AR 501000010554; POD for 21 Battery Needs Revision; 04/08/2018

AR 501000010411; Safety Battery Lid Crack Identification; 04/05/2018

AR 501000009553; NRC Question on 21 Battery Lids; 03/14/2018  
SP 2323; 21 Battery Monthly Inspection; Revision 18  
SP 2325; 21 Battery Quarterly Inspection; Revision 18  
SP 2337; 21 Battery Semi-Annual Inspection; Revision 22  
AR 1184867; Adverse Trend in 11 Battery Jar/Cover Leakage; 06/08/2009  
AR 1293335; Hairline Cracks by Sample Tubes on Several Battery Cells; 07/06/2011  
AR 1511537; Results of 21 Battery Monthly Inspection; 02/09/2016  
AR 1546260; 21 Battery Inspection, SP 2323; 01/03/2017  
AR 1558296; 21 Battery Inspection, SP 2323; 05/09/2017  
AR 501000008489; Relay 1X/32215 Contacts Sticky; 02/16/2018  
AR 726957; Engineering Inspection of 21-Battery Found New Cracks on Cell; 06/28/2004  
AR 501000009528; D1 Turbocharger Outlet Bellows Leak; 03/15/2018  
FP-OP-OL-01; Operability/Functionality Determination; Revision 21  
Temporary Modification 60100000504; Temporary Repair of D1 Exhaust Bellows  
H59; Periodic Vendor Contact Program; Revision 3  
SWI ENG-20; Disposition of Vendor Information; Revision 5  
FP-PA-OE-01; Operating Experience Program; Revision 25  
FP-PE-PM-01; Preventive Maintenance Program; Revision 20  
FP-PA-ARP-01; CAP Process; Revision 52  
WO 700027998-0030; Bench Test Motor 121N Relay Rm Unit CLR; 10/10/2017  
WO 700027998-0010; Replace Motor 112G-15 and Motor 112G-23; 10/10/2017  
D80; Scaffolds Requiring Seismic Consideration-Controlled Access Areas @ 695; Revision 36

#### 71111.18—Plant Modifications

AR 501000010178; Aging Management CE Inappropriately Closed; 03/30/2018  
AR 501000010169; Response to Degraded FOST Vent Pipe; 03/30/2018  
H65.2.14; External Surfaces Monitoring Aging Management Program; Revision 0  
PINGP 1516; Walkdown Checklist Mechanical Systems/Components; Revision 5  
AR 501000005894; Hole in 122 DDCL Pump Oil Storage TK Vent; 11/28/2017  
AR 1487938; DSL Storage Tank Vent Stack Corrosion; 07/30/2015  
AR 1519124; Vent Line for 121 Clg Water Pump DSL Oil Storage Tank Corroded; 04/18/2016

#### 71111.19—Post Maintenance Testing

D70.1; Motor Operated Valve Testing; Revision 23  
WO 700027006-0020; 122 SWGR RM Unit Clr; 03/12/2018  
WO 700027009-0010; Replace MTR 222G-19 per EC 21175; 12/29/2017  
WO 700027009-0020; Replace MTR 222G-19 Bench Test Motor; 12/07/2017  
WO 700027007-0010; Replace MTR 222G-16 (EC 21175); 12/29/2017  
WO 700033770-0030; PMT and RTS 2 S/G Steam Flow; 01/19/2018  
AR 501000007861; Inadequate PMT for MV-32129 Work Plan; 01/30/2018  
5AWI 3.12.4; Post Maintenance Testing; Revision 24  
AR 501000002920; D5 Simulator Relays Not Tested in PMT; 11/30/2017  
WO 700033770-0010; Replace Analog Output Q Card Slot 6; 01/19/2018  
AR 501000007542; Worn Connecting Rod on MD-32429; 01/21/2018  
AR 501000007428; 22 S/G STM Flow 2FI-475 Failed; 01/19/2018  
WO 700028081-0020; Benchtest Motor; 10/10/2017  
WO 700027998-0020; Benchtest Motor 121 N Relay Room Unit CLR; 10/10/2017  
WO 700028082-0020; Benchtest Motor 121 N Relay Room Unit CLR; 10/10/2017  
AR 501000006972; Incorrect Bench Test Info Documented; 01/05/2018

AR 501000006985; Incorrect Bench Test Info Documented; 01/05/2018

71111.22—Surveillance Testing

WO 700011438; SP 1073A-Train A Shield Building Vent Test; 02/01/2018  
SP 1073A—Monthly Train A Shield Building Ventilation System Test; Revision 14  
SP 1106B; 22 Diesel Cooling Water Pump Monthly Test; Revision 93  
WO 700021965; SP 1106B 22 Diesel CL PMP Monthly; 03/23/2018  
SP 2116; Monthly Power Distribution MAP U2; 01/15/2018  
AR 501000008026; MD-32215 Green IL Not Lit After SP 1073A; 02/06/2018

71114.06—Drill Evaluation

LOR Cycle 18A Licensed Operator Requalification; Revision 0

71124.03—In-Plant Airborne Radioactivity Control and Mitigation

Self-Assessment; 6SAR01554468; 02/02/2018 Licensed Operator Respiratory Protection  
Eyeglass Records; Current Records  
C40.5; Control Room Breathing Air System; Revision 3  
RPIP 1214; Respiratory Protection Equipment Testing; Revision 22  
RPIP 1215; Respiratory Protection Control; Revision 10  
H26; Respiratory Protection Program; Revision 14  
Respirator Inspection Checks; 01/2018  
Grade D Air Tests; 2016 through 2017  
AR 501000007493; Leak on Fire Brigade SCBA; 01/19/2018  
AR 501000007262; Large SCBA Mask Staged Vice Medium; 01/15/2018  
AR 50100000477; MSA SCBA Cylinder Gauge Incorrect; 07/01/ 2018  
AR 1557677; Fitting on SCBA Charging Hose is Leaking; 05/03/2017  
AR 1547925; Fire Brigade SCBA Failed Monthly Testing; 01/19/2017  
AR 1544020; Breathing Air Sample Lost for November 2016; 12/05/2016  
AR 501000008404; Outdated Respirator Canisters; 02/15/2018  
AR 501000008440; SCBA Inspection Incomplete; 02/15/2018

71124.04—Occupational Dose Assessment

NVLAP Accreditation Program for Mirion Technologies, 07/01/2017–06/30/2018  
FP–RP–AM–01; Alpha Monitoring Program; Revision 5  
FP–RP–BP–01, Bioassay Program; Revision 7  
FPRP–DP–01; Dosimetry Program; Revision 10  
FP–RP–IDA–01; Internal Dose Assessment; Revision 3  
FP–RP–EDC–01; DMC 2000 S Electronic Dosimeter and IRD 2000 Calibration; Revision 4  
RPIP 1107; Fetal Protection Program; Revision 11  
RPIP 1115; Area TLD Locations, Emergency Plan TLDs & TLD Change Out; Revision 16  
RPIP 1204; Evaluation of Airborne Radioactivity; Revision 22  
2017 Prairie Island Isotopic Mix Evaluation; Undated  
2017 Annual Area TLD Trending Report; 01/24/2018  
2017 TLD Data; Various Records  
Declared Pregnant Worker Records; One Record  
Technical Basis Document #13–002; ISFSI Cask Neutron Field Evaluation; Revision 1

Technical Basis Document #15-001; Unit 2 Containment Neutron Field Evaluation; Revision 0  
TLD/ED Comparison Data and Evaluation; Various Records  
Whole Body Count Records; Various Records  
AR 501000008210; Dose Discrepancies for Period 02/03/2017-02/03/2017; 02/09/2018  
AR 1549796; Personnel Dose in Green Warehouse; 02/07/2017

71151—Performance Indicator Verification

Operator Logs, Various, January 1 through December 31, 2017

71152—Problem Identification and Resolution

AR 500001548470; NRC Question on Door 225 Transom; 03/21/2017  
AR 500001547498; NRC Question—Busduct from 1R to BUS 15 at Cubicle 15-3; 03/21/2017  
AR 501000003299; Inaccuracy in Statement Given NRC Resident Inspector; 11/03/2017  
FP-PA-HU-01; Human Performance Program (Culpability Evaluation Tool); Revision 19  
AR 501000006926; QIM 501000004740 POR Assignment; 01/05/2018  
W/R #00130457; NRC Question Busduct from 1R to Bus 15 at Cubicle 15.3; 01/18/2017  
AR 501000007264; PINGP Unacceptable Continued Poor HU; 01/14/2018

71153—Follow-Up of Events and Notices of Enforcement Discretion

AR 501000003738; BACC: 2RC-8-37 Indication of Leakage; 10/16/2017  
Flowserve Certificate of Compliance/Conformance; 02/24/2014  
Work Task 00532148-01; 10/17/2015  
Work Task 00532148-02; 09/07/2017  
FP-PE-NDE-200; Solvent Removable Visible Dye Penetrant; Revision 1  
Work Order # 700028252; 10/19/2017  
Liquid Penetrant Examination Report BOP-PT-17-048; 10/16/2017  
AR 501000006279; PI&R Issue for 2RC-8-37; 12/11/2017  
RCE 501000004815; 2R30 Configuration Management; 12/18/2017