



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION III
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November 8, 2016

Mr. Peter A. Gardner
Site Vice President
Monticello Nuclear Generating Plant
Northern States Power Company, Minnesota
2807 West County Road 75
Monticello, MN 55362-9637

**SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT—NRC INTEGRATED
INSPECTION REPORT 05000263/2016003**

Dear Mr. Gardner:

On September 30, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Monticello Nuclear Generating Plant. On October 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.

Based on the results of this inspection, the NRC has identified one issue that was evaluated under the risk significance determination process as having very low safety significance (green). The NRC has also determined that one violation is associated with this issue. Because the licensee initiated a condition report to address this issue, this violation is being treated as a Non-Cited Violation (NCV), consistent with Section 2.3.2 of the Enforcement Policy. The NCV is described in the subject inspection report.

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: (1) the Regional Administrator, Region III; (2) the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and (3) the NRC Resident Inspector at the Monticello Nuclear Generating Plant.

In addition, if you disagree with the cross-cutting aspect assignment for the finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at the Monticello Nuclear Generating Plant.

P. Gardner

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In accordance with Title 10 of the *Code of Federal Regulations* (10 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, Chief
Branch 2
Division of Reactor Projects

Docket No. 50-263
License No. DPR-22

Enclosure:
Inspection Report 05000263/2016003

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-263
License No: DPR-22

Report No: 05000263/2016003

Licensee: Northern States Power Company, Minnesota

Facility: Monticello Nuclear Generating Plant

Location: Monticello, MN

Dates: July 1 through September 30, 2016

Inspectors: P. Zurawski, Senior Resident Inspector
D. Krause, Resident Inspector
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G. Hausman, Senior Reactor Inspector
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Approved by: K. Riemer, Branch Chief
Branch 2
Division of Reactor Projects

Enclosure

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SUMMARY

Inspection Report (IR) 05000263/2016003, 07/01/2016—09/30/2016, Monticello Nuclear Generating Plant. Operability Determinations and Functionality Assessments

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. One Green finding was identified by the inspectors. This finding involved a Non-Cited Violation (NCV) of the U.S. Nuclear Regulatory Commission (NRC) requirements. 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 August 1, 2016. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," dated July 2016.

NRC-Identified and Self-Revealed Findings

Cornerstone: Initiating Events

- **Green**. Inspectors identified a self-revealed finding of very low safety significance (Green) and associated Non-Cited Violation (NCV) of Technical Specification 5.4.1.a, on June 24, 2016, when the licensee failed to follow procedures while performing activities affecting quality. Specifically, the licensee failed to accomplish activities affecting quality in accordance with FP-G-DOC-03; "Procedure and Work Instruction Use and Adherence," in that operators performed the Standby Gas Treatment (SBGT) A Train, Quarterly Test (0253-01) and failed to follow steps in that procedure. This resulted in an unanticipated trip of the turbine building ventilation and reactor building exhaust plenum fans causing an increase of steam chase temperatures which had the potential to upset plant stability by initiating a Group 1 Isolation. Immediate corrective actions included restoring ventilation to reduce the steam chase temperature, and entering the issue into the licensee's Corrective Action Program (CAP 1526310).

The inspectors determined that the licensee's failure to follow procedures while performing activities affecting quality was a performance deficiency requiring evaluation. The finding was determined to be more than minor because it adversely impacted the Initiating Events Cornerstone attribute of Human Performance in the area of human error, and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure to follow procedures resulted in conditions that had the likelihood to upset plant stability and challenge critical safety functions, in this case, the potential to initiate a Group 1 Isolation due to high steam chase temperatures. The inspectors evaluated the finding in accordance with IMC 0609 and determined it to be of very low safety significance (Green).

The inspectors determined that the contributing cause that provided the most insight into the performance deficiency was associated with the cross-cutting area of Human Performance, Avoid Complacency; Individuals recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes. Individuals implement appropriate error reduction tools [H.12]. (Section 1R15)

Licensee-Identified Findings

None

REPORT DETAILS

Summary of Plant Status

Monticello operated at or near full power for the inspection period, with the following exceptions:

On July 21, 2016, power was reduced to approximately 90 percent to maintain discharge canal temperatures. Power was returned to approximately 100 percent the same day. On September 17, 2016, power was reduced to approximately 47 percent for several activities including: Control rod pattern adjustment; Quarterly turbine valve and main steam isolation valve testing; and work in the condenser hot side to encapsulate a known steam leak. After completion of those activities, later the same day, an increase of vibrations on the 11 reactor feedwater (RFP) pump occurred. Licensee troubleshooting activities occurred over the next two days. On September 19, 2016, the licensee reduced power to approximately 40 percent and removed the 11 reactor feedwater pump from service for further troubleshooting and repair. Power was raised to approximately 58 percent after the 11 RFP had been removed from service and power was maintained at that level for the following seven days while repairs were made. On September 30, 2016, power was raised to approximately 95 percent where it remained until the close of the inspection period.

1. REACTOR SAFETY

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

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.

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. Documents reviewed are listed in the Attachment to this report

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.

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:

- Reactor Building Railroad Door Maintenance;
- 11 Emergency Diesel Generator During 12 Emergency Diesel Generator Maintenance;
- 12 Standby Liquid Control System during 11 Standby Liquid Control System Maintenance;
- Primary Containment Instrument Air System Post IST; and
- 11 Emergency Diesel Generator (EDG) Lube Oil System—post cooler Replacement.

The inspectors selected these systems based on their risk significance relative to the Reactor Safety Cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, Updated Safety Analysis Report (USAR), 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 corrective action program (CAP) with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

This inspection constituted five partial system walkdown samples as defined in IP 71111.04–05.

b. Findings

No findings were identified.

.2 Semiannual Complete System Walkdown

a. Inspection Scope

On August 3, 2016, the inspectors performed a complete system alignment inspection of the 11 reactor protection system (RPS) motor-generator (MG) and power supplies to verify the functional capability of the system. This system was selected because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment lineups; electrical power availability; system pressure and temperature indications, as appropriate; component labeling; component lubrication; component and equipment cooling; hangers and supports; operability of support systems; and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding work orders (WOs) was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program (CAP) database to ensure that system equipment alignment problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- Fire Zone 19–A; Makeup Demineralizer Area;
- Fire Zone 19–B; Essential MCC 42 & 43;
- Fire Zone 19–C; Feedwater Pipe Chase;
- Fire Zone 16; Turbine Building Corridor East & West 911' & 931'; and
- Fire Zone 17; Turbine Building North Cable Corridor.

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

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

b. Findings

No findings were identified.

1R06 Flooding (71111.06)

.1 Internal Flooding

a. Inspection Scope

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

- Residual Heat Removal / Core Spray Corner Rooms.

Documents reviewed during this inspection are listed in the Attachment to this report. This inspection constituted one internal flooding sample as defined in IP 71111.06–05.

b. Findings

No findings were identified.

.2 Underground Vaults

a. Inspection Scope

The inspectors selected underground bunkers/manholes subject to flooding that contained cables whose failure could disable risk-significant equipment. The inspectors determined that the cables were not submerged, that splices were intact, and that appropriate cable support structures were in place. In those areas where dewatering devices were used, such as a sump pump, the device was operable and level alarm circuits were set appropriately to ensure that the cables would not be submerged. In those areas without dewatering devices, the inspectors verified that drainage of the area was available, or that the cables were qualified for submergence conditions. The inspectors also reviewed the licensee's corrective action documents with respect to past submerged cable issues identified in the corrective action program to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the following underground bunkers/manholes subject to flooding:

- 2MH01; Manhole Southwest of Reactor Building Nitrogen Storage Tank;
- 2MH02; Manhole Southwest of Radwaste Building;
- NMH331; independent spent fuel storage installation (ISFSI) Southeast Corner;
- NMH332; ISFSI Middle East Side;
- NMH333; ISFSI Northeast Corner;
- NMH334; ISFSI Northwest Corner;
- NMH335; ISFSI Middle West Side; and
- NMH336; ISFSI Southwest Corner.

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

This inspection constituted one underground vaults sample as defined in IP 71111.06–05.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program (71111.11)

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

a. Inspection Scope

On July 19, 2016, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator regualification 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 regualification program simulator sample as defined in IP 71111.11-05.

b. Findings

No findings were identified.

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

a. Inspection Scope

On July 21, 2016, the inspectors observed a return to power—Reactivity Adjustment 2300. 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;
- correct use and implementation of 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 performance in these areas was compared to pre-established operator action expectations, procedural compliance and task completion requirements. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

.3 Resident Inspector Quarterly Observation During Periods of Heightened Activity or Risk (71111.11Q)

a. Inspection Scope

On September 19, 2016, the inspectors observed a 2300 reactivity adjustment and removal of the 11 reactor feedwater pump from service. 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;
- correct use and implementation of 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 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:

- 11 EDG Relay Replacement; and
- 13 EDG.

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.

These inspections 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:

- Replace Door Seals on Door 45 (Reactor Building Railroad Door);
- Rod Position Indication Relay & Master Clock Card Failure—RPI Loss;
- 12 EDG Maintenance;
- RO-4001—MSIV Steam Drain Orifice Steam Leak Repair; and
- RPS 0051—Main Steam Line Hi Flow Grp 1 High Risk.

These activities were selected based on their potential risk significance relative to the Reactor Safety Cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's

probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed TS requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Documents reviewed during this inspection are listed in the Attachment to this report.

These maintenance risk assessments and emergent work control activities constituted five samples as defined in IP 71111.13–05.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functional Assessments (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- SBTG “A” missed procedure steps; and
- RWM/RPIS OOS-loss of manual rod control.

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 Updated Safety Analysis Report (USAR) to the licensee’s evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment to this report.

These inspections constituted two operability samples as defined in IP 71111.15–05.

b. Findings

Failure to follow procedures while performing activities affecting quality.

Introduction:

Inspectors determined a finding of very low safety significance (Green) and associated NCV of Technical Specification 5.4.1.a, were self-revealed on June 24, 2016, when the licensee failed to follow procedures while performing activities affecting quality. Specifically, the licensee failed to accomplish activities affecting quality in accordance with FP–G–DOC–03; “Procedure and Work Instruction Use and Adherence,” in that

documented procedures were not followed while performing a surveillance test on safety-related Standby Gas Treatment (SBGT) A Train.

Description:

On June 24, 2016, inspectors evaluated an issue of concern; that operators performing the SBGT A Train Quarterly Test (0253–01) failed to follow steps in the procedure resulting in an unanticipated trip of the turbine building ventilation and reactor building exhaust plenum fans and consequentially, higher than expected temperatures in the steam chase.

Operators performing the SBGT A Train Quarterly Test (0253–01) were conducting the test as required by the procedure. In step 4.b, operators bypassed reactor building exhaust plenum fan and turbine building ventilation fan trip signals to allow for continued use of reactor building ventilation (RBV) radiological effluent monitoring systems and to aid in controlling steam chase temperatures. As the operators continued to sequentially execute the procedure, two pages of the procedure “stuck” together. This led the operators to move from step 14 to step 19 and skip steps 15, 16, 17, & 18. In step 19, the fan trip circuitry was placed from bypass back into normal. When step 19 occurred, the reactor building exhaust plenum fans and turbine building ventilation fans tripped. Step 19 was completed out-of-sequence and prior to performing steps 15, 16 (trip reset), 17, and 18. The operators carrying out the test became aware of their procedural error only upon the trip of the fans. The consequences of this event were a reduction of RBV radiological effluent monitoring systems and loss of steam chase cooling capabilities and consequentially, higher than expected temperatures in the steam chase. The inspectors verified corrective actions had occurred; including implementing the tiered decision-making process, restoring the normal ventilation alignment to the steam chase within 45 minutes of the trip, and entering this issue into the licensee’s Corrective Action Program (CAP 01526310).

Analysis:

The inspectors determined that the licensee’s failure to follow procedures while performing activities affecting quality was a performance deficiency warranting further evaluation. Using the guidance in Inspection Manual Chapter (IMC) 0612, “Power Reactor Inspection Reports,” Appendix B, “Issue Screening,” the inspectors concluded the performance deficiency was more than minor, and therefore a finding, because it adversely impacted the Initiating Events Cornerstone attribute of Human Performance in the area of human error, and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the inspectors determined that performing activities affecting quality without following procedures could result in conditions that have the likelihood to upset plant stability and challenge critical safety functions, in this case, the potential to initiate a Group 1 Isolation due to high steam chase temperatures.

Using the Initiating Events Cornerstone, Exhibit 1 of IMC 0609, Appendix A, “The SDP for Findings At-Power,” Initiating Events Screening Questions; Transient Initiators the inspectors concluded the finding to have very low safety significance (Green) because all the screening questions were answered “No.” This finding had a cross-cutting aspect in the area of Human Performance—Avoid Complacency: Individuals recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting

successful outcomes. Individuals implement appropriate error reduction tools, (H.12). Specifically, the licensee's failure to implement appropriate error reduction tools during the Standby Gas Treatment A Train Quarterly test (0253-01) resulted in the failure to follow procedure steps causing a temporary loss of reactor building ventilation and higher than expected temperatures in the steam chase and a reduction of RBV radiological effluent monitoring systems.

Enforcement:

Technical Specification 5.4.1.a required, in part, that written procedures shall be established, implemented, and maintained, covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2. Section 1.d of Appendix A, required procedures for procedure adherence and temporary change methods. The licensee established, in part, fleet procedure FP-G-DOC-03, to meet the Regulatory Guide 1.33 requirement. Section 4.6 of FP-G-DOC-03 designated minimum procedure usage levels during performance of an activity. It further defined "Continuous Use" as a procedure usage level which required; "Reading each step of the procedure prior to performing that step, performing each step in the sequence given, and proceeding to the next step." Procedure 0253-01 was designated as a "Continuous Use" procedure.

Contrary to the above, on June 24, 2016, the licensee failed to accomplish activities affecting quality by not performing FP-G-DOC-03, resulting in personnel failing to follow the step sequence given when implementing procedure 0253-01. Failing to follow the sequence of steps resulted in an unanticipated trip of the turbine building ventilation and reactor building exhaust plenum fans and consequentially, higher than expected temperatures in the steam chase. If left uncorrected, the increasing steam chase temperatures had the potential to upset plant stability by initiating a Group 1 Isolation. Corrective actions included restoring ventilation to reduce the steam chase temperature, conducting a fitness-for-duty evaluation, and entering the issue into the licensee's Corrective Action Program. The licensee also performed a Human Performance Event Investigation as well as an Operations Department clock reset.

Because the violation was of very low safety significance and was entered into the licensee's corrective action program (CAP 01526310), this violation of Technical Specification 5.4.1.a, is being treated as an NCV consistent with Section 2.3.2 of the NRC Enforcement Policy. **(NCV 05000263/2016003-01, Failure to follow procedures while performing activities affecting quality.)**

1R18 Plant Modifications (71111.18)

.1 Plant Modifications

a. Inspection Scope

The inspectors reviewed the following modification(s):

- Tornado Vent Missile Protection; and
- 11 Reactor Feedwater Pump Main Shaft Oil Pump Vent Path.

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(s). 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.

These inspections constituted two permanent plant modification samples as defined in IP 71111.18–05.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

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

- Rod Position Indication Master Clock Card Replacement;
- 'A' Residual Heat Exchanger Room Cooler Replacement;
- 11 EDG Small Oil Leak from Lube Oil Cooler; and
- 11 EDG Relays – Set 3.

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and test documentation was properly evaluated. The inspectors evaluated the activities against TSs, the USAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the

equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

.1 Surveillance Testing

a. Inspection Scope

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

- RCIC High Steam Flow Pressure Sensor Test and Calibration [Routine];
- RPS 0051; Main Steam Line High Flow Group 1 [Routine];
- RHR Reactor Steam Dome Pressure Low Calibration [Routine];
- Instrument Air System Check Valve Exercise [IST]; and
- 0533 Containment Sump Flow Measurement Instrumentation [RCS Leakage].

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

- did preconditioning occur;
- the effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis;
- plant equipment calibration was correct, accurate, and properly documented;
- as-left setpoints were within required ranges; and the calibration frequency was in accordance with TSs, the USAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;

- where applicable for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers code, and reference values were consistent with the system design basis;
- where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable;
- where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure;
- where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished;
- prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;
- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

These inspections constituted three routine surveillance testing sample(s), one inservice test samples, and one reactor coolant system leak detection inspection 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 August 23, 2016, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the Control Room Simulator, Technical Support Center, and Emergency Offsite Facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

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

b. Findings

No findings were identified.

2. **RADIATION SAFETY**

Cornerstones: Occupational and Public Radiation Safety

2RS6 Radioactive Gaseous and Liquid Effluent Treatment (71124.06)

.1 Walkdowns and Observations

a. Inspection Scope

The inspectors walked down select effluent radiation monitoring systems to evaluate whether the monitor configurations aligned with Offsite Dose Calculation Manual (ODCM) descriptions and to observe the materiel condition of the systems.

The inspectors walked down selected components of the gaseous and liquid discharge systems to evaluate whether equipment configuration and flow paths align with plant documentation and to assess equipment materiel condition. The inspectors also assessed whether there were potential unmonitored release points, building alterations which could impact effluent controls, and ventilation system leakage that communicated directly with the environment.

For equipment or areas associated with the systems selected for review that were not readily accessible, the inspectors reviewed the licensee's materiel condition surveillance records.

The inspectors walked down filtered ventilation systems to assess for conditions such as degraded high-efficiency particulate air/charcoal banks, improper alignment, or system installation issues that would impact the performance or the effluent monitoring capability of the effluent system.

As available, the inspectors observed selected portions of the routine processing and discharge of radioactive gaseous effluent to evaluate whether appropriate treatment equipment was used and the processing activities aligned with discharge permits.

The inspectors determined if the licensee has made significant changes to their effluent release points.

As available, the inspectors observed selected portions of the routine processing and discharging of liquid waste to determine if appropriate effluent treatment equipment was being used and that radioactive liquid waste was being processed and discharged in accordance with procedure requirements and aligned with discharge permits.

This inspection constituted one complete sample as defined in Inspection Procedure IP 71124.06–05.

b. Findings

No findings were identified.

.2 Sampling and Analyses

a. Inspection Scope

The inspectors reviewed select effluent sampling activities and assessed whether adequate controls had been implemented to ensure representative samples were obtained.

The inspectors reviewed select effluent discharges made with inoperable effluent radiation monitors and assess whether controls were in place to ensure compensatory sampling was performed consistent with the ODCM and that those controls were adequate to prevent the release of unmonitored effluents.

The inspectors determined whether the facility was routinely relying on the use of compensatory sampling in lieu of adequate system maintenance.

The inspectors reviewed the results of the Inter-Laboratory Comparison Program to evaluate the quality of the radioactive effluent sample analyses and assessed whether the Inter-Laboratory Comparison Program included hard-to-detect isotopes as appropriate.

This inspection constituted one complete sample as defined in IP 71124.06–05.

b. Findings

No findings were identified.

.3 Instrumentation and Equipment

a. Inspection Scope

The inspectors reviewed the methodology used to determine the effluent stack and vent flow rates to determine if the flow rates were consistent with plant documentation, and that differences between assumed and actual stack and vent flow rates did not affect the results of the projected public doses.

The inspectors assessed whether surveillance test results for Technical Specification required ventilation effluent discharge systems met Technical Specification acceptance criteria.

The inspectors assessed calibration and availability for select effluent monitors used for triggering emergency action levels or for determining protective action recommendations.

This inspection constituted one complete sample as defined in IP 71124.06–05.

b. Findings

No findings were identified.

.4 Dose Calculations

a. Inspection Scope

The inspectors reviewed significant changes in reported dose values compared to the previous radiological effluent release report to evaluate the factors which may have resulted in the change.

The inspectors reviewed radioactive liquid and gaseous waste discharge permits to assess whether the projected doses to members of the public were accurate.

Inspectors evaluated the isotopes that are included in the source term to assess whether analysis methods were sufficient to satisfy detectability standards. The review included the current Part 61 analyses to ensure hard-to-detect radionuclides are included in the source term.

The inspectors reviewed changes in the licensee's offsite dose calculations to evaluate whether changes were consistent with the ODCM and Regulatory Guide 1.109. Inspectors reviewed meteorological dispersion and deposition factors used in the ODCM and effluent dose calculations to evaluate whether appropriate factors were being used for public dose calculations.

The inspectors reviewed the latest Land Use Census to assess whether changes have been factored into the dose calculations.

For select radioactive waste discharges, the inspectors evaluated whether the calculated doses were within the Title 10 of the *Code of Federal Regulations*, Part 50, Appendix I, and Technical Specification dose criteria.

The inspectors reviewed select records of abnormal radioactive waste discharges to ensure the discharge was monitored by the discharge point effluent monitor. Discharges made with inoperable effluent radiation monitors, or unmonitored leakages were reviewed to ensure that an evaluation was made to account for the source term and projected doses to the public.

This inspection constituted one complete sample as defined in IP 71124.06–05.

b. Findings

No findings were identified.

.5 Problem Identification and Resolution

a. Inspection Scope

Inspectors assessed whether problems associated with the Effluent Monitoring and Control Program were being identified by the licensee at an appropriate threshold and were properly addressed for resolution. In addition, they evaluated the appropriateness of the corrective actions for a selected sample of problems documented by the licensee involving radiation monitoring and exposure controls.

This inspection constituted one complete sample as defined in IP 71124.06–05.

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—Emergency AC Power System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI)—Emergency AC Power System performance indicator for the period from the third quarter 2015 through the second quarter 2016. To determine the accuracy of the PI data 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, MSPI derivation reports, issue reports, event reports and NRC Integrated Inspection Reports for the period July 2015 through June 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 one MSPI emergency AC power system sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index—High Pressure Injection Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index—High Pressure Injection Systems performance indicator for the period from the third quarter 2015 through the second quarter 2016. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the 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 July 2015 through June 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 one MSPI high pressure injection system sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index—Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index—Heat Removal System performance indicator for the period from the third quarter 2015 through the second quarter 2016. To determine the accuracy of the PI data 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, event reports, MSPI derivation reports, and NRC Integrated Inspection Reports for the period of July 2015 through June 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 one MSPI heat removal system sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.4 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system specific activity Performance Indicator for Monticello Nuclear Generating Plant for the period from the third quarter 2015 through the second quarter 2016. The inspectors used Performance Indicator definitions and guidance contained in the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 2013, to determine the accuracy of the Performance Indicator data reported

during those periods. The inspectors reviewed the licensee's reactor coolant system chemistry samples, technical specification requirements, issue reports, event reports and U.S. Nuclear Regulatory Commission Integrated Inspection Reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the Performance Indicator data collected or transmitted for this indicator and none were identified. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a reactor coolant system sample. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one reactor coolant system specific activity sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.5 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Exposure Control Effectiveness Performance Indicator for the period from the third quarter 2015 through the second quarter 2016. The inspectors used Performance Indicator definitions and guidance contained in the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 2013, to determine the accuracy of the Performance Indicator data reported during those periods. The inspectors reviewed the licensee's assessment of the Performance Indicator for occupational radiation safety to determine if the indicator related data was adequately assessed and reported. To assess the adequacy of the licensee's Performance Indicator data collection and analyses, the inspectors discussed with radiation protection staff the scope and breadth of its data review and the results of those reviews. The inspectors independently reviewed electronic personal dosimetry dose rate and accumulated dose alarms and dose reports and the dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized occurrences. The inspectors also conducted walkdowns of numerous locked high and very high radiation area entrances to determine the adequacy of the controls in place for these areas. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one occupational exposure control effectiveness sample as defined in IP 71151-05.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors sampled licensee submittals for the radiological effluent Technical Specification/ODCM radiological effluent occurrences Performance Indicator for the period from the third quarter 2015 through the second quarter 2016. The inspectors used Performance Indicator definitions and guidance contained in the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 2013, to determine the accuracy of the Performance Indicator data reported during those periods. The inspectors reviewed the licensee's issue report database and selected individual reports generated since this indicator was last reviewed to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose. The inspectors reviewed gaseous effluent summary data and the results of associated offsite dose calculations for selected dates to determine if indicator results were accurately reported. The inspectors also reviewed the licensee's methods for quantifying gaseous and liquid effluents and determining effluent dose. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one Radiological Effluent Technical Specification/ODCM radiological effluent occurrences sample 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 discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify they were being entered into the licensee's corrective action program at an appropriate threshold, adequate attention was being given to timely corrective actions, and adverse trends were identified and addressed. Some minor issues were entered into the licensee's corrective action program as a result of the inspectors' observations; however, they not discussed in this report.

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

b. Findings

No findings were identified.

.2 Semiannual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program 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 corrective action program item screening discussed in Section 4OA2.1 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the 6-month period of March 2016 through August 2016, although some examples expanded beyond those dates where the scope of the trend warranted.

The review also included issues documented outside the corrective action program 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 corrective action program trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

This review constituted one semiannual trend review inspection sample as defined in IP 71152.

b. Findings

No findings were identified.

.3 Annual Followup of Selected Issues: In-depth Review of 11 Reactor Feedwater Pump Corrective Action Program Items

a. Inspection Scope

The inspectors selected the following condition reports for in-depth review due to significant 11 reactor feedwater pump vibration increases on September 17, 2016, subsequent removal of the pump from service on September 19, 2016, and inspector awareness that similar issues had previously been identified at another nuclear facility:

- CAP 1536340; Vibration trend is rising on P-2A;
- CAP 1536560; P-2A, 11 RFP Vibrations exceeded 4.2 Mils;
- CAP 1536743; Increase in bearing cap vibrations on 11 RFP;
- CAP 1536978; Unexpected rise in vibrations for 11 RFP; and
- CAP 1537182; Negative step change in vibrations on P-2A.

As appropriate, the inspectors verified the following attributes during their review of the licensee's corrective actions for the above condition reports 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 corrective actions, which were appropriately focused to correct the problem;
- completion of corrective actions in a timely manner commensurate with the safety significance of the issue;
- effectiveness of corrective actions taken to preclude repetition; and
- evaluate applicability for operating experience and communicate applicable lessons learned to appropriate organizations.

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

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

b. Findings

No findings were identified.

.4 Annual Followup of Selected Issues: In-depth Review of Enforcement Discretion Non-Cited Violations Identified During the Monticello 2014 Cyber-Security Inspection 2014403 and Associated Corrective Action Documents

a. Inspection Scope

The inspector performed a review of the licensee's Corrective Action Program (CAP) and associated documents, specifically Action Request (AR) 1439691, "NRC INSP - Review the Use of Handheld Scanners;" AR 1437875, "NRC INSP—Portable Media Connected to Simulator Server;" AR 1437932, "NRC INSP - Unsecured CDROM [Compact Disc-Read Only Memory] and Modem Found Near Voltage Reg.;" and AR 1434687, "OE [Operational Experience] PI [Prairie Island] NRC TI - Possibly Milestone 4 Gaps." The inspector interviewed personnel, verified the completion of and assessed the adequacy of the corrective actions taken in response to two NRC identified Non-Cited Violations (NCVs) and one licensee identified NCV given enforcement discretion.

The inspector's review and evaluation was focused on the NRC and licensee identified cyber-security NCVs to ensure corrective actions were: complete, accurate, and timely; considered extent of condition; provided appropriate classification and prioritization; provided identification of root and contributing causes; appropriately focused; action taken resulted in the correction of the identified problem; identified negative trends; operating experience was adequately evaluated for applicability; and applicable lessons learned were communicated to appropriate organizations.

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

b. Background

In accordance with Title 10, Code of Federal Regulations (CFR), Part 73, Section 54, "Protection of Digital Computer and Communication Systems and Networks (i.e., the Cyber-Security Rule), each nuclear power plant (NPP) licensee was required to submit to the NRC for review and approval a cyber-security plan (CSP) and an associated implementation schedule by November 23, 2009. A Temporary Instruction (TI) 2201/004, "Inspection of Implementation of Interim Cyber Security Milestones 1 – 7" was developed to evaluate and verify each NPP licensee's ability to meet the interim milestone requirements of the Cyber-Security Rule. On July 25, 2014, the NRC completed an inspection at the Monticello Nuclear Generating Plant, Unit 1, which evaluated the interim cyber-security Milestones 1 – 7. During performance of the TI, three NCVs were identified and incorporated into the licensee's CAP. These three NCVs were subsequently given enforcement discretion following the Security Issues Forum (SIF) Meeting conducted on August 6, 2014. During the week of August 8, 2016, the inspector reviewed the Cyber-Security Milestones 1 – 7 Inspection NCVs as a PI&R sample. The CAP documents were evaluated to determine the effectiveness of the licensee's corrective actions.

c. Observations

As discussed in the "Inspection Scope" section above, the inspector's review was focused on the licensee's actions to ensure the NCVs corrective actions were appropriately focused to correct the identified problems. In addition, during the inspector's review of the cyber-security inspection's corrective action documents, the following two observations were identified:

- The inspector's review of the above ARs' Form AT-0175, "Action Request Record Report," Revision 3, identified the use of a "Status" designation code, which provided the action tracking status used to describe the AR / Assignment / Sub-assignment tracking process. Based on the inspector's questions regarding the definitions of the status code designations, the licensee provided the job aid/desktop guide "Overview of Action Tracking Process," Revision 5 dated February 29, 2016. The job aid/desktop guide referenced the licensee's CAP Procedure FP-PA-ARP-01, "CAP Action Request Process," Revision 45; however, no definitions and/or descriptions of the status code designations were identified in the procedure. In addition, the job aid/desktop guide did not provide a complete list of all in-use or possible status code designations and was not a controlled document. As a result, the licensee issued AR 01531260, "NRC INSP: OBS-AR Status Code Definitions," dated August 11, 2016, to evaluate the addition of status code designation definitions and/or descriptions as a possible procedure attachment.
- The inspector's review of the above ARs revealed that numerous cross-referenced AR documents (e.g., in some cases up to 13 additional ARs) were identified and cross-referenced in each referenced AR. In addition, these ARs cross-referenced other ARs, which resulted in more cross-referenced ARs. Many of these ARs were

not directly related to closure of the above NCVs' corrective actions. Due to the number of cross-referenced ARs, an overwhelming (i.e., time consuming) situation was created for the inspector to verify all corrective actions were addressed to ensure closure of the above NCVs. As a result, the licensee issued AR 01531267, "NRC INSP: OBS—Use of Cross-References," dated August 11, 2016, to evaluate the utilization of cross references.

d. Findings

No findings were identified.

4OA5 Other Activities

.1 Component Design Bases Inspection (71111.21)

Closed Unresolved Item (URI) 05000263/2012007-06: Failure to Analyze Effect of System and Transient Harmonics on Proper Operation of Degraded Voltage Relays.

a. Inspection Scope

During the 2012 Component Design Bases Inspection (CDBI), the inspectors identified an unresolved item (URI) regarding the degraded voltage relays. Specifically, the effect of system and transient harmonics on proper operation of degraded voltage relays was not analyzed. The Monticello degraded voltage protection scheme features three ITE Type 27N relays for each 4.16kV safety bus, arranged in a two out of three tripping scheme. BBC Instruction Bulletin 7.4.1.7-7 states, the relay employs a peak voltage detector, and harmonic distortion on the AC waveform can have a noticeable effect on the relay operating point and the measuring instruments used to calibrate the relay. The bulletin also notes that the relay is available with an internal harmonic filter for applications where waveform distortion is a factor. The inspectors noted Calculation 92-220, "Instrument Set-Point Calculation 4.16 kV Degraded Voltage," identified the relays as a model not equipped with harmonic filters, but did not address the basis for excluding harmonic distortion as a factor affecting relay accuracy.

The licensee provided additional information stating that, Monticello Nuclear Generating Plant had not experienced any substantial harmonic distortion in their electric power system. Subsequently, the licensee installed power quality monitoring equipment in their 345 kV and 115 kV switchyards, and provided digital fault recorder data to the inspectors to review. Based on reviewing the August and September, 2016 data, NRC inspectors noted that very little (less than 0.7 percent) total harmonic distortion (THD) existed at Monticello compared to the IEEE Standard 519-2014 allowed THD of 1.5 percent for 345 kV and 2.5 percent for 115 kV. As a result, the NRC inspectors did not identify a performance deficiency or violation of U.S. Nuclear Regulatory Commission requirements at this time; therefore, this URI is closed.

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On October 7, 2016, the inspectors presented the inspection results to Mr. P. Gardner, 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:

- Radiation Safety Program inspection results were reviewed with Mr. H. Hanson, Plant Manager, on July 29, 2016.
- Cyber Security inspection results were reviewed with Mr. H. Hanson, Plant Manager, on August 11, 2016.
- Closure of URI 05000263/2012007–06 inspection results were reviewed with Ms. A. Ward, Regulatory Assurance Manager, and Mr. M. Lingenfelter, Site Engineering Director, on September 28, 2016.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

P. Gardner, Site Vice President
K. Scott, Site Operations Director
H. Hanson, Jr., Plant Manager
M. Antony, Operations Manager
C. Stalpes, Assistant Operation Manager
M. Lingenfelter, Director of Engineering
T. Erickson, Engineering Supervisor
W. Kleeve, Engineering Supervisor
B. Olson, Maintenance Manager
M. Wilson, Maintenance Supervisor
S. Quiggle, Chemistry Manager
C. England, Radiation Protection Manager
A. Ward, Regulatory Affairs Manager
P. Bruley, Cyber-Security Assessment Team (Lead)
D. Feitl, Cyber-Security Manager
W. Flaga, Quality Assurance / NOS
B. Glaser, Information Technology Supervisor
J. Hamilton, Cyber Change Manager
A. Kouba, Regulatory Affairs Lead

U.S. Nuclear Regulatory Commission

K. Riemer, Chief, Reactor Projects Branch 2
P. Zurawski, Senior Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000263/2016003-01	NCV	Failure to Follow Procedures While Performing Activities Affecting Quality
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Closed

05000263/2016003-01	NCV	Failure to Follow Procedures While Performing Activities Affecting Quality
05000263/2012007-06	URI	Failure to Analyze Effect of System and Transient Harmonics on Proper Operation of Degraded Voltage Relays

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

- 1150; Summer Checklist; Revision 71
- 4 AWI-04.02.01; Revision 27
- A.6; Acts of Nature; Revision 54

1R04 Equipment Alignment

- 0379; RPS – Electrical Protection Assembly (EPA); Revision 32
- 2113; Plant Prestart Checklist Standby Liquid Control; Revision 4
- 2124; Plant Prestart Checklist – Diesel Generators and Fuel Oil System; Revision 10
- 2127; Plant Prestart Checklist Reactor Protection and Instrumentation Power System; Revision 24
- 2154-07; Standby Liquid Control System Prestart Valve Checklist; Revision 14
- 2154-28; Diesel Generator Air Start System Prestart Valve Checklist; Revision 11
- B.08.11-05; Operations Manual, Diesel Oil System, System Operation; Revision 39
- B.09.12-02; Operations Manual, Reactor Protection System Power Supplies, Description of Equipment; Revision 2
- B.09.12-04; Operations Manual, Reactor Protection System Power Supplies, References; Revision 9
- B.09.12-06; Operations Manual, Reactor Protection System Power Supplies, Figures; Revision 1
- B.09.12-09; Operations Manual, Reactor Protection System Power Supplies, System Operation; Revision 27
- CAP 1294797; ARPS MG Set and Alt Both Powered from MCC-111 (MRB-107); July 15, 2011
- CAP 1337114; OE 35752, Failure to Transfer “B” RPS Bus to MG Set; May 10, 2012
- CAP 1353719; Workers Noted that Greasing was not Being Performed During PM; October 2, 2012
- CAP 1528861; Update USAR Section 7.6.3.4 to Include New Testing Method; July 20, 2016
- CAP 1530485; NRC Question Regarding Protection of RPS EPA; August 3, 2016
- DBD B.03.05; Design Bases Document for Standby Liquid Control System; Revision 4
- NE-36771-4; Reactor Protection Power System Distribution Panel Y-40 & Y-50; Revision 77
- NH 36051; P&ID, Diesel Oil System; Revision 86
- NH 36051-1; P&ID, Diesel Oil System; Revision 77
- NH-36049-12; P&ID Instrument Air Reactor Building & Drywell; Revision 80
- NH-36253; Standby Liquid Control System P&ID; Revision 80
- NH-36258; P&ID Primary Containment & Atmospheric Control System; Revision 79
- NX-7834-63; Elementary Diagram, Reactor Protection System MG Set Control; Revision 75
- PCT-0255-10-IA-4; Reactor Building to Torus Vacuum Breaker Mechanical Exercise Test; July 11, 2016
- USAR-07.06; Section 7.6.1, Reactor Protection System; Revision 31P
- USAR-08.06; Section 8.6, Reactor Protection System Power Supplies; Revision 22
- WO 538386-01; 11 Emergency Diesel Generator, Mechanical - Small Oil Leakage from

- 11 EDG Lube Oil Cooler; July 12, 2016
- WO 538386-02; OPS PMT - Small Oil Leakage from 11 EDG Lube Oil Cooler; July 12, 2016

1R05 Fire Protection

- USAR Appendix J; Fire Protection Program; Revision 22
- USAR Appendix J.05; Fire Hazards Analysis; Revision 34p
- USAR Appendix J.04; Fire Protection Program; Revision 34p
- CAP 1531921; NRC Question on SCTMT Impact of 3 Holes Above Door 65
- CAP 1499040; Extinguisher Discrepancies Identified with Fire Strategies
- CAP 1491012; Failure to Maintain Portable Fire Extinguishers
- A.3-16-A; Fire Strategy for Fire Zone 16; TB Corridor East & West 911' & 931'; Revision 16
- A.3-17-A; Fire Strategy for Fire Zone 17; TB North Cable Corridor; Revision 6
- A.3-19-A; Fire Strategy for Fire Zone 19-A; Makeup Demineralizer Area; Revision 12
- A.3-19-B; Fire Strategy for Fire Zone 19-B; Essential MCC Area (No. 142 & 143 931' Elevation); Revision 13
- A.3-19-C; Fire Strategy for Fire Zone 19-C; Feedwater Pipe Chase; Revision 7

1R06 Flooding

- 1252 RHR Pump Room Sump Pump Surveillance Procedure; Revision 12
- CAP 1531885; NRC Identified Concern- Items in A and B RHR Rooms
- DBD T.08; Design Basis Document for Internal Flooding; Revision 3
- NF-201636-1; ISFSI Temperature Monitoring System Electrical Layout and Details; Revision 2
- NF-74413-4; Underground Services Electrical Power; Revision 94
- NF-74413-6; Underground Services of Division II Cable Raceway System; Revision 80
- WO 524429-01; Mechanical Underground Vaults For Water Inspection; June 1, 2016

1R11 Licensed Operator Requalification Program

- SEG# RQ-SS-08E; Simulator Exercise Guide; Revision 0
- B.0206-05; Isolating Hydrogen Flow to One RFP to Allow its Removal from Service; Revision 42
- Ops Man C.2-05; System Operation; Revision 66
- B.06.05-05; Shutdown of the Condensate and Reactor Feedwater System; Revision 45
- B.06.06-05; Placing a Condensate Demineralizer Vessel in Standby; Revision 42
- Procedure 2300; Reactivity Adjustment, Revision 17; July 21, 2016
- Procedure 2300; Reactivity Adjustment, Revision 17; September 19, 2016

1R12 Maintenance Effectiveness

- CAP 1385911; NDG Exceeds the 75% Maintenance Rule Unavailability Criteria
- CAP 1410987; LCB-092 Found with Broken Center Pole Clevis Pin
- CAP 1411214; NDG Exceeded Maintenance Rule Unavailability Criteria
- CAP 1418669; 13 EDG Output Breaker Failed to Close
- CAP 1424346; LCB-083 Trip Interlock Causing Unexpected Lockout/alarm
- CAP 1439033; 13 Diesel Generator Lockout on Start Attempt
- CAP 1474945; Conflicting Settings on Drawings for 11 & 12 EDG Annunciator Relays
- EC 25502; Equivalency for Vendor Recommended Replacement EDG Engine Start and Fast Start Relays; Revision 000
- FP-E-MR-01; Maintenance Rule Process; Revision 7

- FP-E-MR-02; Maintenance Rule Scoping; Revision 8
- FP-E-MR-03; Maintenance Rule Monitoring; Revision 4
- FP-E-MR-06; Maintenance Rule (A)(3) Assessment; Revision 4
- FP-PE-RLY-01; Fleet Procedure, Relay Program; Revision 01
- Maintenance Rule Database Unavailability and Reliability Entries—Non Essential Diesel Generator; March 2013 through September 2016
- Maintenance Rule Expert Panel Meeting Minutes; September 29, 2016
- NF-170042-2; Connection Diagram, 11 EDG Panel C91; Revision 78
- NX-9216-5-1; Physical Schematic & Field Connections Model 999 – 11 EDG; Revision 80
- NX-9216-5-2; Physical Schematic & Field Connections Model 999 – 11 EDG; Revision 76
- NX-9216-5-3; Physical Schematic & Field Connections Model 999 – 11 EDG; Revision 77
- NX-9216-5-4; Physical Schematic & Field Connections Model 999 – 11 EDG; Revision 77
- QF0586; (a)(2) Determination – NDG Non Essential Diesel Generator; September 2, 2016
- WO 530620-01; Elec-G-3A Relays, Replace Relays – Set 3; July 13, 2016
- WO 530620-02; Elec-G-3A Relays, Bench Test Relays – Set 3; May 13, 2016

1R13 Maintenance Risk Assessment and Emergent Work Control

- 0000-B; Operations Daily Log – Part B; Revision 111
- CAP 01530067; RO-4001 Leak Inconsistent w/AST Analysis (Calc. 04-038); July 29, 2016
- CAP 01534969; T-Mod did not Eliminate Steam Leakage; September 18, 2016
- Fleet Procedure FP-E-MOD-03; Temporary Modifications; Revision 13
- ISP-RPI-0001; Alternate Method for Control Rod Position Determination; Revision 0
- Technical Specifications Section 3.3.6.1; Primary Containment Isolation Instrumentation; Amendment No 146
- USAR Appendix I; I.02, High Energy Systems and Piping; Revision 31
- WO 530625-01; Electrical 12 EDG Relay Replacement – Set 3; July 25, 2016
- WO 537217; 0051 Main Steam Line Hi Flow GRP I Instrument Test (High Risk – New Test Fixture); August 8, 2016
- WO 538742; QF-2007 Planning and Approval of High Risk Work – Replace Door Seals on Door 45; July 19, 2016
- WO 538742; Replace Door Seals on Door 45; July 19, 2016
- WO 538961; Install Furmanite T-Mod onto RO-4001 Main Steam Equalizer Drain Restricting Orifice; September 17, 2016
- WO 550166; Rod Position Information System; August 18, 2016
- Work Plan 550166-08; C-27 Install Spare Master Clock Board in C-27 Panel; August 18, 2016

1R15 Operability Determinations and Functional Assessments

- 0253-01; SBGT A Train Quarterly Test, Revision 52; June 24, 2016
- CAP 1531584; Unexpected Control Room Annunciators Received; August 15, 2016
- CAP 1532103; C-05 Full Core Display Unexpected Response; August 18, 2016
- CAP 1516359; HPCI CV-2043 Not Closing, HPCI Drain Pot Bypass; March 21, 2016
- CAP 1516359; Prompt Operability Determination, CV-2043; March 25, 2016
- CAP 1516361; Past Operability Review, HPCI Oil Leak; July 7, 2016
- CAP 1526310; HU Event During Performance of 0253-01; June 24, 2016
- FP-G-DOC-03; Procedure and Work Instruction Use and Adherence, Revision 13
- FP-OP-OL-01; Operability/Functionality Determination; Revision 17
- NH-36249; P&ID (Steam Side) High Pressure Coolant Injection System, Revision 82
- NH-36250; P&ID (Water Side) High Pressure Coolant Injection System, Revision 83
- Plant Response Evaluation – Scram 134; no date

- Root Cause Evaluation (RCE): 01516361; Revision 1; HPCI Oil Leak; May 24, 2016
- Technical Specifications Appendix A Section 1.1; Definitions; Amend. 179
- Technical Specifications Appendix A Section 5.5.10; Safety Function Determination Program (SFDP); Amend. 176
- Technical Specifications Bases Section 3.5.1; ECCS – Operating; Revision 41
- Technical Specifications Section 3.1.3; Control Rod Operability; Amend. 146
- Technical Specifications Section 3.3.2.1; Control Rod Block Instrumentation; Amend. 146
- Technical Specifications Section 3.3.6.2; Secondary Containment Isolation Instrumentation; Amend. 146
- Technical Specifications Section 3.6.4.1; Secondary Containment; Amend. 146
- Technical Specifications Section 5.4.1; Administrative Controls; Amend. 146
- Technical Specifications Section 5.5.6; Ventilation Filter Testing Program (VFTP); Amend. 146
- USAR-06.02; Section 6.2.4.1, High Pressure Coolant Injection System (HPCI) Design Basis; Revision 33
- USAR-06.02; Section 6.2.6, ECCS Performance Evaluation; Revision 33
- USAR-07.2; Section 7.2.1, Reactor Manual Control System; Revision 26
- USAR-07.8; Section 7.8, NUMAC Rod Worth Minimizer and Plant Process Computer; Revision 28
- USAR-08.12; Section 8.12, Station Blackout; Revision 27
- USAR-14.7; Section 14.7.2.2.3, ECCS-LOCA Analysis Assumptions, Revision 31
- USAR-14.7; Section 14.7.2.3, ECCS Emergency Core Cooling System Performance; Revision 31
- WO 550166-01; FIN 3A-K39, Replace Relay; August 18, 2016
- WO 550166-08; Install Spare Master Clock Board in C-27 Panel; August 18, 2016

1R18 Plant Modifications

- 16-002; Evaluation of HPV Missile Barrier – Upper & Intermediate Frames; Revision 0
- 16-003; Evaluation of HPV Missile Barrier – Lower Frame; Revision 0
- 16-004; Evaluation of Reactor Building Wall for HPV Missile Barrier; Revision 0
- 16-005; Evaluation of HPCI Roof for HPV Missile Barrier; Revision 0
- B.06.05-04; Condensate and Reactor Feedwater; Revision 48
- C.6-006-A-16; RCT Feed Pump P-2A Low Oil Press; Revision 3
- C.6-006-A-21; RCT Feed Pump P-2A AC Aux Oil Pump Start; Revision 7
- EC 26081; Tornado Missile Barrier for Hardened Containment Venting System; July 26, 2016
- EC 27552; 11 RFP Lube Oil Vent Line Installation; September 29, 2016
- EC-26081-02; Missile Barrier Hardened Pipe Vent Existing Conditions Elevation; Revision 0
- EC-26081-10; Missile Barrier Hardened Pipe Vent Upper and Lower Barrier Plan; Revision 1
- EC-26081-103; Missile Barrier Pipe Relocation Support Details; Revision 1
- EC-26081-20; Missile Barrier Hardened Pipe Vent Baseplate locations; Revision 1
- EC-26081-30; Missile Barrier Hardened Pipe Vent Upper Barrier Sections; Revision 1
- EC-26081-40; Missile Barrier Hardened Pipe Vent Lower Barrier Framing Plan; Revision 1
- Manual CA-1; IMO Pump General Installation, Operation, Maintenance and Troubleshooting Manual for Three Screw and CIG Series Pumps; Revision 4
- MNGP-181838-S02; Evaluation of HPV Missile Barrier – Lower Frame; Revision 0
- MPS-2151; Reactor Feed Pump Specification; Revision 2
- NH-36037-3; Reactor Feedwater Pump and Motor Lube Oil System; Revision 0
- NX-236531-28; Reactor Feed Pumps, Pumps Section; Revision 1
- NX-236531-42; Reactor Feed Pumps, IMO Pump Piping Units P-2A & B; Revision 0
- QF-0501; 50.59 Screening – 11 RFP Lube Oil Vent Line Installation; Revision 0
- WO 538503; EC 26081, HPV Fabricate and Install Tornado Missile; Various Dates

1R19 Post-Maintenance Testing

- Work Plan 550166-08; C-27 Install Spare Master Clock Board in C-27 Panel; August 18, 2016
- WO 550434; V-AC-5 Cooling Coil Leaking at Approximately 1 GPM; August 21, 2016
- NE 36375-17; Reactor Building H&V Units; Revision 76
- WO 550434-08; OPS-V-AC-5 PMT, Precision Maintenance on High Critical Component; August 22, 2016
- WO 538386-01; 11 Emergency Diesel Generator, Mechanical—Small Oil Leakage from 11 EDG Lube Oil Cooler; July 12, 2016
- WO 538386-02; OPS PMT - Small Oil Leakage from 11 EDG Lube Oil Cooler; July 12, 2016
- 0255-11-III-3; 12 ESW Quarterly Pump and Valve Tests; Revision 56
- WO 530620-03; PMT-#11 EDG Relays—Set 3; July 12, 2016
- WO 547485-02; OPS-G-3A, PMT, 11 EDG; July 12, 2016
- B.09.08-05, D-1; Ops Manual 11 Emergency Diesel Generator Startup; Revision 49
- WO 550166; Rod Position Information System; August 18, 2016
- 550166-06; OPS-3A-K5 and Clock Board Replacement, PMT; August 18, 2016
- WO 550434-08; OPS V-AC-5 PMT/RTS; August 23, 2016

1R22 Surveillance Testing

- 0533; Containment Sump Flow Measurement Instrumentation; Revision 27
- CAP 1528892; NRC Question –EQ Requirements for Drywell Floor and Equipment Drain Transmitters; July 20, 2016
- CAP1528948; NRC Question on Test Equipment Checks During 0533; July 20, 2016
- NH-36049-14; P&ID Instrument Air – Reactor Building; Revision 79
- NSPM Calculation CA 04-119; Instrument Setpoint Calculation Reactor Steam Dome Pressure—Low (LPCI Loop Select); Revision 0
- Ops Man B.05.06-05; Plant Protection System, System Operation; Revision 12
- OSP-RC-0060; RCIC Hi Steam Flow Pressure Sensor Test and Calibration; Revision 6
- Technical Requirements Manual Section 3.6.1.3; Primary Containment Isolation Valves (PCIVs); Revision 13
- Technical Specifications Section 3.3.5.1; Emergency Core Cooling System (ECCS) Instrumentation, Amendment No 146
- Technical Specifications Section 3.3.6.1; Primary Containment Isolation Instrumentation, Amendment No 146
- WO 534935; 0255-17-IA-1, Instrument Air System Valve Exercise, Revision 41; July 7, 2016
- WO 535676-01; 0533-Containment Sump Flow Measurement Instrumentation; July 20, 2016
- WO 537217; 0051 Main Steam Line Hi Flow GRP I Instrument Test; August 8, 2016
- WO 537236; ISP-RHR-0602, Rx Steam Dome Press Lo-Channel Cal & Function Test; August 10, 2016
- WO 537647-01; RCIC Hi Steam Flow Pressure Sensor Test and Calibration; August 15, 2016

1EP6 Drill Evaluation

- Monticello Nuclear Generating Plant Emergency Plan Drill; August 23, 2016

4OA1 Performance Indicator Verification

- Maintenance Rule Database (Emergency AC Power and High Pressure Injection Systems); July 2015 through June 2016
- MSPI Deviation Report; MSPI High Pressure Injection Systems; July 2015 through June 2016

- PRA-CALC-05-003; MSPI Basis Document; Revision 6
- FP-PA-PI-01; Performance Indicator Control; Revision 11
- FP-PA-PI-02; NRC/INPO/WANO Performance Indicator Reporting; Revision 11
- FP-R-PI-01; Preparation of NRC Performance Indicators; Revision 4
- NEI 99-02; Regulatory Assessment PI Guideline; Revision 7
- MSPI Deviation Report; MSPI Emergency AC Power; July 2015 through June 2016
- Monticello Station Log Entries; July 2015 through June 2016

4OA2 Identification and Resolution of Problems

- 4 AW-08.03.04; Controlled Use Of Portable Computing Devices (PCD) On Critical Digital Asset (CDA) Equipment; Revision 0
- ACE 1439691; Apparent Cause Evaluation NRC INSP Review the Use of the Handheld Scanners; September 5, 2014
- ACE 1445206; Apparent Cause Evaluation NRC Identified Green NCV – MS4; October 27, 2014
- CAP 1348991; FP-IT-CSP-21 Cyber Security CDA Media Protection Procedure
- CAP 1359641; Cyber Security, Critical Group Expansion FSA—AFI 1.1
- CAP 1371123; FP-IT-CSP-13
- CAP 1377810; FP-IT-CSP-13 CS Asset Assessment Procedure
- CAP 1410394; CYB SEC Plan E6 Defense-In-Depth
- CAP 1415779; OE: Evaluate Need for Cyber Security Data 'Transfer Station'
- CAP 1419682; Cyber Security Procedures For Portable Devices Not Followed
- CAP 1422242; Revisit Possible Need for Cyber 'Transfer Station'
- CAP 1425542; FP-IT-CSP-07
- CAP 1425545; FP-IT-CSP-21
- CAP 1427880; QF 1521, Revision 3 Revisions To Incorporate NEI 10-04
- CAP 1432729; NRC Asked If SD Cards/Dongles Are In Portable Media Program
- CAP 1433028; QF 1537 Port Dev Log
- CAP 1433064; Consider Proceduralizing Cyber Comp. Device Scanning Process
- CAP 1433126; Possible Gaps for Full Cyber Milestone 4 Implementation
- CAP 1433458; Digital Devices In EC Process Have Not Been Assessed As CDAs
- CAP 1434167; FG-ITCSP-06-01; Revision 1, CDA Media Scanning
- CAP 1434170; FP-IT-CSP-12, Revision 3; CS & CDA Identification
- CAP 1434679; OE PI NRC TI — SD Cards/Dongles In Portable Media Program
- CAP 1434687; OE PI NRC TI—Possibly Milestone 4 Gaps
- CAP 1435042; Inadequate Guidance for Form QF1521 (CDA Determination)
- CAP 1437875; NRC INSP — Portable Media Connected to Simulator Server
- CAP 1437932; NRC INSP — Unsecured CDROM and Modem Found Near Voltage Regulator
- CAP 1438096; RM-3 Cyber Security 3:2:1 Tile RED
- CAP 1439691; NRC INSP — Review the Use of Handheld Scanners
- CAP 1440485; Cancelled – FG-IT-CSP-07-01, Guide to PCD Scanning
- CAP 1440487; FP-IT-CSP-15, CSAT Procedure
- CAP 1441789; NRC Identified Green NCV Cyber Security Milestone 4
- CAP 1441790; NRC Identified Green NCV Cyber Security Milestone 4
- CAP 1444490; SAP-01.01
- CAP 1445206; Effectiveness Review; Action Being Assessed for Effectiveness: 01445206-16
- CAP 1445206; NRC Identified Green NCV Cyber Security MS4 Fleet ACE
- CAP 1447135; Cyber Security Area Rated As Needs Improvement 2C14
- CAP 1447216; FP-IT-CSP-06
- CAP 1447311; FG-IT-CSP-06-02

- CAP 1450111; Lack of Urgency on ACEs 1445206 and 1441791
- CAP 1457568; Cyber Security Engagement of Employees/Leadership Inadequate
- CAP 1460772; OE—Duane Arnold Reactor Feedwater Pump Failure
- CAP 1491714; SA: Cyber Security Milestone 8
- CAP 1491791; Add Wireless Access Point at PAB 3 Conference Room
- CAP 1492454; Canceled: Create and Track EC to move Security Screeners to Level 3
- CAP 1503164; 11 RFP Seal Flow Indicator Downscale
- CAP 1511361; Sulzer Recommendation—Replace Feed Pump Flow Straighteners
- CAP 1514862; 12 RFP Axial Position Changed Relative to 11 RFP
- CAP 1519656; NOS ID: ACE Actions Not Verbatim As Required
- CAP 1521595; IP 71152: Cyber Security Follow Up (TI 2201/004)
- CAP 1524076; Discrepancy Between Procedure F—IT—CSP—12 and Form QF1521
- CAP 1524504; Erratic Vibration Data on 11 RFP
- CAP 1525057; O-ring Failure on Duane Arnold RFP's
- CAP 1528622; ACE 1439691 Missing Similar-Similar Extent of Condition
- CAP 1528625; Unclear Cause To Corrective Action Link In ACE 1445206
- CAP 1528628; Extent of Condition Not Performed for ACE 1445206
- CAP 1531260; NRC INSP: OBS—AR Status Code Definitions
- CAP 1531267; NRC INSP: OBS—Use of Cross-References
- CAP 1534941; Control Room Received Unexpected 11 RFP Alarm
- CAP 1535202; 11 RFP Repair—Gall Picked up on Throttle Injection Sleeve
- CAP 1535203; 11 RFP Repairs—Active Face Thrust Bearing Condition
- CAP 1535468; Flow Straightener Vane Found Broken
- CAP 1535479; 11 RFP Repair—NDE Throttle Injection Sleeve Coating Damage
- CAP 1535633; Damaged O-rings 11 RFP Oil Seals to be Reused
- CAP 1535900; 11 RFP Repairs—Coupling Alignment Out of Spec
- CAP 1536059; Trip of 11 Reactor Feed Pump
- CAP 1536340; Vibration Trend is Rising on P-2A
- CAP 1536560; P-2A, 11 RFP Vibrations Exceeded 4.2 Mils
- CAP 1536743; Increase in Bearing Cap Vibrations on 11 RFP
- CAP 1536978; Unexpected Rise in Vibrations for 11 RFP
- CAP 1537182; Negative Step Change in Vibrations on P-2A
- CAP 1537275; 11 RFP Hot Alignment—Results Different than Expected
- CAP 1537419; 11 RFP Repair—INPRO Bearing Isolator Apparent Failure
- CAP 1537500; 11 RFP Repair—Crack Found on Throttle Injection Sleeve
- CAP 1538445; 11 RFP Event Review
- CDA Determination; Security Hand Held Badge Scanners; July 14, 2014
- CDA Determination; Security: Hand Held Badge Scanners; January 20, 2015
- DAR 1535347; 11 RFP Repair—Suction O-ring failure
- DAR 1535484; 11 RFP Repairs—Suction Piece Studs/Nuts Gall
- DAR 1535632; Wrong Material for O-ring
- DAR 1535751; Pipe Strain on 11 RFP Oil and Cooling Water Lines
- FP—DOC—03; Procedure and Work Instruction Use and Adherence; Revision 13
- FP—IT—CSP—12; Critical Systems and Critical Digital Asset Identification Procedure; Revisions 2 & 5
- FP—IT—CSP—21; Cyber Security CDA Media Protection Procedure; Revisions 2 & 3
- FP—PA—ARP—01; CAP Action Request Process; Revision 45
- FP—S—FSIP—07; Access Controls; Revision 6
- ML13178A203; Enhanced Guidance for Licensee Near-Term Corrective Actions to Address Cyber Security Inspection findings and Licensee Eligibility for "Good-Faith" Attempt Discretion; July 1, 2013

- ML14246A072; Monticello Nuclear Generating Plant, Unit 1, Inspection of TI2201/004, "Inspection of Implementation of Interim Cyber-Security Milestones 1 – 7" Inspection Report 2014403; September 2, 2014
- ML14316A042; IP 71152, Problem Identification and Resolution; February 6, 2015
- QF1521; Cyber Security Critical Digital Asset Determination Form; Revision 5
- SVP-14-063; Closure of Cyber-Security "Good Faith Enforcement Discretion" Findings / Violations; September 2, 2014

LIST OF ACRONYMS USED

AC	Alternating Current
ACE	Apparent Cause Evaluation
ADAMS	Agencywide Document Access Management System
AR	Action Request
CAP	Corrective Action Program
CDA	Critical Digital Asset
CDROM	Compact Disc-Read Only Memory
CFR	Code of Federal Regulations
CSP	Cyber-Security Plan
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
ESW	Emergency Service Water
IEEE	Institute of Electrical & Electronic Engineers
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
IR	Issue Report
ISFSI	Independent Spent Fuel Storage Installation
kV	Kilovolt
LOOP	Loss of Off-site Power
MG	Motor-Generator
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NOS	Nuclear Safety Oversight
NPP	Nuclear Power Plant
NRC	U.S. Nuclear Regulatory Commission
OE	Operational Experience
PARS	Publicly Available Records System
PI	Performance Indicator
PI	Prairie Island
PI&R	Problem Identification and Resolution
PM	Planned or Preventative Maintenance
PMT	Post-Maintenance Testing
RCIC	Reactor Core Isolation Cooling
RFP	Reactor Feed Pump
RHR	Residual Heat Removal
RPS	Radiation Protection Specialist
RPS	Reactor Protection System
SBGT	Standby Gas Treatment
SBLC	Standby Liquid Control
SDP	Significance Determination Process
SIF	Security Issues Forum
SLC	Standby Liquid Control
SW	Service Water
TI	Temporary Instruction
TS	Technical Specification
TSO	Transmission System Operator
USAR	Updated Safety Analysis Report
URI	Unresolved Item

P. Gardner

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Sincerely,

/RA/

K. Riemer, Chief
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