UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, IL 60532-4352

February 13, 2017

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 05000263/2016004; ANNUAL EMERGENCY PREPAREDNESS ASSESSMENT 05000263/2016501; AND ISFSI 072000058/2016001

Dear Mr. Gardner:

On December 31, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Monticello Nuclear Generating Plant. On January 10, 2017, the NRC inspectors discussed the results of this inspection with you and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report. The NRC also completed its annual inspection of the Emergency Preparedness Program. This inspection began on January 1, 2016, and issuance of this letter closes Inspection Report Number 2016501. The NRC also completed an inspection of dry cask storage canister #16 movement and loading corrective action program items. This inspection began on October 1, 2016, and issuance of this letter closes Inspection Report Number 2016001 (Docket 72–058).

No NRC-identified or self-revealed findings were identified during this inspection. However, inspectors documented licensee-identified violations which were determined to be of very low safety significance in this report. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violation or significance of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555–0001, with copies to: (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 accordance with 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 Nos. 50–263; 72–058
License Nos. DPR–22; 72–1004

Enclosure:
IR 05000263/2016004; 05000263/2016501;
072000058/2016001

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50–263; 72–058
License No:	DPR–22; 72–1004
Report No:	05000263/2016004; 05000263/2016501; 072000058/2016001
Licensee:	Northern States Power Company, Minnesota
Facility:	Monticello Nuclear Generating Plant
Location:	Monticello, MN
Dates:	October 1 through December 31, 2016
Inspectors:	P. Zurawski, Senior Resident Inspector D. Krause, Resident Inspector L. Haeg, Senior Resident Inspector S. Bell, Health Physicist G. Hansen, Senior Emergency Preparedness Inspector R. Baker, Operations Engineer
Approved by:	K. Riemer, Chief Branch 2 Division of Reactor Projects

Enclosure

TABLE OF CONTENTS

SUMMARY

Inspection Report (IR) 05000263/2016004, October 1, 2016, through December 31, 2016, Monticello Nuclear Generating Plant.

This report covers a 3–month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. No findings of significance were identified. 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

None

Licensee-Identified

Violations of very low safety or security significance or Severity Level IV that were identified by the licensee have been reviewed by the NRC. Corrective actions taken or planned by the licensee have been entered into the licensee’s corrective action program (CAP). These violations and CAP tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Monticello began the inspection period operating at approximately 95 percent power continuing power ascension from the previous inspection period after completion of 11 Reactor Feedwater Pump (RFP) repairs. Power ascension to 100 percent was completed on October 2, 2016. Shortly after returning to 100 percent power, the 11 RFP exhibited unexpected vibrations. On October 9, 2016, power was reduced to approximately 58 percent. The 11 RFP was removed from service to resolve the unexpected vibrations conditions. Work was completed on October 13, 2016 with power returned 100 percent on October 16, 2016. Monticello operated at or near full power for the reminder of the inspection period, with the following exceptions:

- 11/2/2016 to 11/3/2016—Power was reduced to approximately 97 percent for a control rod pattern adjustment and returned to 100 percent afterward.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

.1 Winter Seasonal Readiness Preparations

a. Inspection Scope

The inspectors conducted a review of the licensee's preparations for winter conditions to verify that the plant's design features and implementation of procedures were sufficient to protect mitigating systems from the effects of adverse weather. Documentation for selected risk-significant systems was reviewed to ensure that these systems would remain functional when challenged by inclement weather. During the inspection, the inspectors focused on plant specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Updated Safety Analysis Report (USAR) and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant specific procedures. Cold weather protection, such as heat tracing and area heaters, was verified to be in operation where applicable. 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. The inspectors' reviews focused specifically on the following plant systems due to their risk significance or susceptibility to cold weather issues:

- Emergency Diesel Generator (EDG)–Emergency Service Water System; and
- Emergency Diesel Generator Fuel Oil System.

This inspection constituted one winter seasonal readiness preparations sample as defined in IP 71111.01–05.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

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

- 11/13 Battery Rooms During 12 EDG Maintenance; and
- 12 EDG Fuel Oil System Repair.

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, USAR, Technical Specification (TS) requirements, outstanding work orders (WOs), condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

These inspections constituted two partial system walkdown samples as defined in IP 71111.04–05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- Fire Zone 32–B; Emergency Filter Train (EFT) 2nd Floor – Division II;
- Fire Zone 33; EFT 3rd Floor;

- Fire Zone 37; Transformers;
- Fire Zone 23–B; Intake Structure Corridor; and
- Fire Zone 31–B; EFT 1st Floor—Division II.

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 samples as defined in IP 71111.05–05.

b. Findings

No findings were identified.

1R07 Annual Heat Sink Performance (71111.07)

.1 Heat Sink Performance

a. Inspection Scope

The inspectors reviewed the licensee's testing of Emergency Diesel Generators heat exchangers to verify that potential deficiencies did not mask the licensee's ability to detect degraded performance, to identify any common cause issues that had the potential to increase risk, and to ensure that the licensee was adequately addressing problems that could result in initiating events that would cause an increase in risk. The inspectors reviewed the licensee's observations as compared against acceptance criteria, the correlation of scheduled testing and the frequency of testing, and the impact of instrument inaccuracies on test results. Inspectors also verified that test acceptance criteria considered differences between test conditions, design conditions, and testing conditions. Documents reviewed are listed in the Attachment to this document.

This inspection constituted one annual heat sink performance sample as defined in IP 71111.07–05.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

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

a. Inspection Scope

On November 21, 2016, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification training. The inspectors verified that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and that training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

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

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

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

b. Findings

No findings were identified.

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

a. Inspection Scope

On November 2, 2016, the inspectors observed a Rod Pattern Adjustment – power maneuver. 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. Annual Operating Test Results (71111.11A)

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of the Annual Operating Test, administered by the licensee from September 5, 2016, through October 14, 2016, required by Title 10 of the *Code of Federal Regulations* (CFR), Part 55.59(a). The results were compared to the thresholds established in Inspection Manual Chapter 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process," to assess the overall adequacy of the licensee's Licensed Operator Requalification Training Program to meet the requirements of 10 CFR 55.59. (Section 02.02).

This inspection constituted one annual licensed operator requalification examination results sample as defined in Inspection Procedure 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:

- 12 Residual Heat Removal (RHR) Pump Min Flow Valve (CV–1995) Risk;
- 11 EDG Fuel Oil Transfer Pumps P222B [Quality Control];
- "B" EFT Train Trip (V–FE–12 Hydramotor failure); and
- High Pressure Coolant Injection (HPCI) Comprehensive Pump & Valve Test Failures.

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 four 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:

- "B" EFT Train Trip (V–FE–12 INOP);
- Control Rod Drive (CRD) 111, HCU 22–27, Valve Repair Excessive Packing Leak;
- Standby Gas Treatment (SBGT) Flow Controller 2943 Replacement;
- HPCI Turbine Steam Supply Valve (MO–2036) Packing Leak; and
- Emergency Diesel Generator Exhaust Barrier Modifications.

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 Title 10 of the *Code of Federal Regulations* (10 CFR) 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed TS requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Documents reviewed are listed in the Attachment to this report.

These inspections constituted five maintenance risk assessments and emergent work control activities 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:

- Fire Impairment issues (OWA) (From 3Q);
- HPCI LS–23–98 Failed Exhaust Steam Drain Level Switch; and
- "A" SBGT Relay (J7TD) failure.

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

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

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

.1 Plant Modifications

a. Inspection Scope

The inspectors reviewed the following modification(s):

- Welding Blanket Install over Ventilation Intakes for V–AC–10A/B; and
- HPCI LS–23–98 Exhaust Steam Drain Level Switch Modification.

The inspectors reviewed the configuration changes and associated 10 CFR 50.59 safety evaluation screening against the design basis, the USAR, and the TS, as applicable, to verify that the modification did not affect the operability or availability of the affected system(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 temporary 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:

- Pressure Control Valve to RHR Charge Line;
- "B" EFT–V–FE–12–OPS–VD–9111B PMT/RTS;
- 12 EDG PMT Ops–G–3B Flange Coolant Leakage;
- PMT # 12 EDG Relays—Set 4; WO 530626–03;
- CRD 111, Hydraulic Control Unit (HCU) 22–27 PMT;
- SBGT Flow Controller 2943 Replacement—PMT; and
- HPCI Turbine Steam Supply Valve (MO–2036) PMT.

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 seven 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:

- 0279–Anticipated Transient Without a Scram (ATWS) Reactor Level and Pressure Transmitter Calibration [ROUTINE];
- I&C PRM [Process Radiation Monitor] 0460–A CR Air Intake Rad Monitor Test [ROUTINE];
- 14 Emergency Service Water (ESW) Quarterly Pump and Valve Tests [ROUTINE];
- 12 EDG Comprehensive Pump & Valve Tests 0187–2A [ROUTINE];
- ATWS Recirculation Pump Trip Hi Press Function Check [ROUTINE];
- RWCU High Flow Isolation Signal Missed Surveillance [ROUTINE]; and
- Standby Liquid Control (SBLC) Pump and Valve Quarterly Test [IST].

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

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

applicable procedures; jumpers and lifted leads were controlled and restored where used;

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

Documents reviewed are listed in the Attachment to this report.

These inspections constituted six routine and one IST surveillance testing samples as defined in IP 71111.22, Sections–02 and–05.

b. Findings

No findings were identified.

1EP2 Alert and Notification System Evaluation (71114.02)

.1 Alert and Notification System Evaluation

a. Inspection Scope

The inspectors reviewed documents and conducted discussions with Emergency Preparedness (EP) staff and management regarding the operation, maintenance, and periodic testing of the primary and backup Alert and Notification System (ANS) in the site's plume pathway Emergency Planning Zone. The inspectors reviewed monthly trend reports and the daily and monthly operability records from November 2014, through November 2016. Information gathered during document reviews and interviews was used to determine whether the ANS equipment was maintained and tested in accordance with Emergency Plan commitments and procedures. Documents reviewed are listed in the Attachment to this report.

This Inspection constituted one ANS sample as defined in IP 71114.02.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization Staffing and Augmentation System (71114.03)

.1 Emergency Response Organization Staffing and Augmentation System

a. Inspection Scope

The inspectors reviewed and discussed with plant EP management and staff the Emergency Plan commitments and procedures that addressed the primary and alternate methods of initiating an Emergency Response Organization (ERO) activation to augment the on-shift staff as well as the provisions for maintaining the plant's ERO team and qualification lists. The inspectors reviewed reports and a sample of CAP records of unannounced off-hour augmentation drills and call-in tests, which were conducted from November 2014, through November 2016, to determine the adequacy of the drill critiques and associated corrective actions. The inspectors also reviewed a sample of the training records of approximately 15 ERO personnel, who were assigned to key and support positions, to determine the status of their training as it related to their assigned ERO positions. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one ERO Augmentation Testing Inspection sample as defined in IP 71114.03.

b. Findings

No findings were identified.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

.1 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

The regional inspectors performed an in office review of the latest revisions to the Emergency Plan, Emergency Action Levels (EALs).

The licensee transmitted the Emergency Plan and EAL revisions to the U.S. Nuclear Regulatory Commission pursuant to the requirements Title 10 of the *Code of Federal Regulations*, Part 50, Appendix E, Section V, "Implementing Procedures." The U. S. Nuclear Regulatory Commission review was not documented in a Safety Evaluation Report and did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspection.

This inspection constituted one EAL and Emergency Plan Changes sample as defined in IP 71114.04.

b. Findings

No findings were identified.

1EP5 Maintenance of Emergency Preparedness (71114.05)

.1 Maintenance of Emergency Preparedness

a. Inspection Scope

The inspectors reviewed a sample of nuclear oversight staff's audits of the EP Program to determine whether these independent assessments met the requirements of Title 10 of the *Code of Federal Regulations* (CFR), Part 50.54(t). The inspectors also reviewed critique reports and samples of CAP records associated with the 2015 Biennial Exercise, as well as various EP drills conducted in 2014, 2015, and 2016; in order to determine whether the licensee fulfilled drill commitments and to evaluate the licensee's efforts to identify, track, and resolve issues identified during these activities. The inspectors reviewed a sample of EP items and corrective actions related to the licensee's EP Program and activities to determine whether corrective actions were completed, in accordance with the site's CAP. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one maintenance of EP sample as defined in IP 71114.05.

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 November 10, 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

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

.1 Radioactive Material Storage (02.02)

a. Inspection Scope

The inspectors selected areas where containers of radioactive waste are stored, and evaluated whether the containers were labeled in accordance with Title 10 of the *Code of Federal Regulations* (CFR), Part 20.1904, or controlled in accordance with 10 CFR 20.1905.

The inspectors assessed whether the radioactive material storage areas were controlled and posted in accordance with the requirements of 10 CFR Part 20. For materials stored or used in the controlled or unrestricted areas, the inspectors evaluated whether they were secured against unauthorized removal and controlled in accordance with 10 CFR 20.1801 and 10 CFR 20.1802.

The inspectors evaluated whether the licensee established a process for monitoring the impact of low-level radioactive waste storage that was sufficient to identify potential unmonitored, unplanned releases or nonconformance with waste disposal requirements.

The inspectors evaluated the licensee's program for container inventories and inspections. The inspectors selected containers of stored radioactive material, and assessed for signs of swelling, leakage, and deformation.

This inspection constituted one complete sample as defined in IP 71124.08–05.

b. Findings

No findings were identified.

.2 Radioactive Waste System Walk-down (02.03)

a. Inspection Scope

The inspectors walked down accessible portions of select radioactive waste processing systems to assess whether the current system configuration and operation agreed with the descriptions in plant and/or vendor manuals.

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

The inspectors reviewed the adequacy of changes made to the radioactive waste processing systems since the last inspection. The inspectors evaluated whether changes from what is described in the Final Safety Analysis Report were reviewed and documented in accordance with 10 CFR 50.59 or that changes to vendor equipment were made in accordance with vendor manuals. The inspectors also assessed the impact of these changes on radiation doses to occupational workers and members of the public.

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

The inspectors evaluated whether tank recirculation procedures provided sufficient mixing.

The inspectors assessed whether the licensee's process control program correctly described the current methods and procedures for dewatering and waste stabilization.

This inspection constituted one complete sample as defined in IP 71124.08–05.

b. Findings

No findings were identified.

.3 Waste Characterization and Classification (02.04)

a. Inspection Scope

For select waste streams, the inspectors assessed whether the licensee's radiochemical sample analysis results were sufficient to support radioactive waste characterization as required by 10 CFR Part 61. The inspectors evaluated whether the licensee's use of scaling factors and calculations to account for difficult-to-measure radionuclides was technically sound and based on current 10 CFR Part 61 analysis.

The inspectors evaluated whether changes to plant operational parameters were taken into account to: (1) maintain the validity of the waste stream composition data between the sample analysis update; and (2) assure that waste shipments continued to meet the requirements of 10 CFR Part 61.

The inspectors evaluated whether the licensee had established and maintained an adequate quality assurance program to ensure compliance with the waste classification and characterization requirements of 10 CFR 61.55 and 10 CFR 61.56.

These inspection activities constituted one complete sample as defined in IP 71124.08–05.

b. Findings

No findings were identified.

.4 Shipment Preparation (02.05)

a. Inspection Scope

The inspectors observed radiation workers during the conduct of radioactive waste processing and radioactive material shipment preparation and receipt activities.

The inspectors reviewed the technical instructions presented to workers during routine training. The inspectors assessed whether the licensee's training program provided training to personnel responsible for the conduct of radioactive waste processing and radioactive material shipment preparation activities.

The inspectors assessed whether shippers were knowledgeable of the shipping regulations and demonstrated adequate skills to accomplish package preparation requirements. The inspectors evaluated whether the licensee was maintaining shipping

procedures in accordance with current regulations. The inspectors assessed whether the licensee was meeting the expectations in the NRC Bulletin 79–19, "Packaging of Low-Level Radioactive Waste for Transport and Burial," and 49 CFR Part 172, Subpart H, "Training."

The inspectors evaluated whether the requirements for Type B shipment Certificates of Compliance had been met. The inspectors determined whether the users was a registered package user and had an NRC approved quality assurance program. The inspectors assessed whether procedures for cask loading and closure were consistent with vendor procedures.

The inspectors assessed whether non-Type B shipments were made in accordance with the package quality documents.

The inspectors assessed whether the receiving licensee was authorized to receive the shipment packages.

This inspection constituted one complete sample as defined in IP 71124.08–05.

b. Findings

No findings were identified.

.5 Shipping Records (02.06)

a. Inspection Scope

The inspectors reviewed select shipments to evaluate whether the shipping documents indicated the proper shipper name; emergency response information and a 24–hour contact telephone number; accurate curie content and volume of material; and appropriate waste classification, transport index, and Hazard Identification number. The inspectors assessed whether the shipment marking, labeling, and placarding was consistent with the information in the shipping documentation.

This inspection constituted one complete sample as defined in IP 71124.08–05.

b. Findings

No findings were identified.

.6 Identification and Resolution of Problems (02.07)

a. Inspection Scope

The inspectors assessed whether problems associated with radioactive waste processing, handling, storage, and transportation, were being identified by the licensee at an appropriate threshold, were properly characterized, and were properly addressed for resolution. Additionally, the inspectors evaluated whether the corrective actions were appropriate for a selected sample of problems documented by the licensee that involve radioactive waste processing, handling, storage, and transportation.

This inspection constituted one complete sample as defined in IP 71124.08–05.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

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

4OA1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index—Residual Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI)—Residual Heat Removal System performance indicator for the period from the fourth quarter 2015 through the third 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 October 2015, through September 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 residual heat removal system sample as defined in IP 71151–05.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index—Cooling water System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index—Cooling Water System performance indicator for the period from the fourth quarter 2015 through the third 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 October 2015, through September 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 cooling water system sample as defined in IP 71151–05.

b. Findings

No findings were identified.

.3 Drill/Exercise Performance

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill/Exercise Performance (DEP) performance indicator (PI) for the period from the second quarter 2015 through the third 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, were used. The inspectors reviewed the licensee's records associated with the PI to verify the licensee accurately reported the DEP indicator in accordance with licensee procedures and NEI guidance. Specifically, the inspectors reviewed licensee records and processes, including procedural guidance on assessing opportunities for the PI; assessments of PI opportunities during pre-designated control room simulator training sessions; performance during the 2015 biennial exercise; and performance during other drills. Documents reviewed are listed in the Attachment to this report.

This inspection constitutes one DEP sample as defined in IP 71151.

b. Findings

No findings were identified.

.4 Emergency Response Organization Drill Participation

a. Inspection Scope

The inspectors sampled licensee submittals for the ERO Drill Participation PI for the period from the second quarter 2015 through the third quarter 2016. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in NEI Document 99–02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, were used. The inspectors reviewed the licensee's records associated with the PI to verify that the licensee accurately reported the indicator, in accordance with relevant procedures and NEI guidance. Specifically, the inspectors reviewed licensee records and processes, including procedural guidance on assessing opportunities for the PI; participation during the 2015 biennial exercise and other drills; and revisions of the roster of personnel assigned to key ERO positions. Documents reviewed are listed in the Attachment to this report.

This inspection constitutes one ERO Drill Participation sample as defined in IP 71151.

b. Findings

No findings were identified.

.5 Alert and Notification System Reliability

a. Inspection Scope

The inspectors sampled licensee submittals for the ANS PI for the period from the second quarter 2015 through the third quarter 2016. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in NEI Document 99–02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, were used. The inspectors reviewed the licensee's records associated with the PI to verify that the licensee accurately reported the indicator, in accordance with relevant procedures and NEI guidance. Specifically, the inspectors reviewed licensee records and processes, including procedural guidance on assessing opportunities for the PI and results of periodic ANS operability tests. Documents reviewed are listed in the Attachment to this report.

This inspection constitutes one ANS sample as defined in IP 71151.

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 Annual Follow-up of Selected Issues: In-depth Review of Dry Cask Storage Canister #16 Movement and Loading Corrective Action Program Items

a. Inspection Scope

The inspectors selected condition report 1402246 for in-depth review associated with licensee activities associated with dry shielded canister (DSC) 16. On October 17, 2013, the NRC identified a contractor had improperly performed certain elements of liquid penetrant testing on DSC 16 to verify the acceptability of the closure welds as required by Technical Specification 1.2.5. CAP 1402246 was initiated by the licensee to document this issue. Subsequent investigation revealed six DCSs (11–16) were affected. Five of the six DSCs (11–15) had already been loaded in the horizontal storage modules (HSMs) when the discrepancies were discovered. DSC 16 remained on the reactor building refueling floor in the transfer cask. The licensee performed phased array ultrasonic testing of DSC 16 closure weld, supported by analysis, as an alternate means for verifying the weld quality. The licensee utilized information gained to develop an exemption request for DSC 16 which was submitted on September 29, 2015, to the NRC. Subsequent to review, on June 15, 2016, the NRC issued an exemption to certain parts of Title of the *Code of Federal Regulations* (10 CFR) 72.212 and Title 10 CFR 72.214. Issuance of this exemption allowed the licensee to move DSC 16 from the reactor building refueling floor to the HSM; an activity planned for the week of October 3, 2016. To perform the DSC movement activities, the licensee intended to utilize the services of a contract organization different than the one originally involved. Due to the licensee's contractor control issues with the original contractor, the inspectors performed an in-depth inspection of actions taken by the licensee leading to the use of the second contract organization tasked with the movement of DSC 16 from the refueling building refuel floor to the HSM.

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;
- 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.

During the week of October 3, 2016, inspectors observed licensee/contractor activities associated with moving DSC 16 from the reactor building refuel floor to the ground elevation, heavy load rigging and handling, transport of the DSC to the HSM, and alignment and placement of the DSC into the HSM. The inspectors verified corrective actions and lessons learned were appropriately incorporated into work documents or processes associated with this evolution. Further, for activities observed, the inspectors verified DSC movement activities complied with established work processes. Overall, the inspectors did not identify any issues of concern throughout the inspection.

This inspection constituted one in-depth problem identification and resolution inspection sample as defined in IP 71152. Further, since this inspection addressed Title 10 CFR Part 72 activities, it was conducted under Inspection Report Number 2016001 (Docket 72–058).

b. Findings

No findings were identified.

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

.1 (CLOSED) Licensee Event Report 5000263/2013–003–03; Inadequate External Flooding Procedure

On May 31, 2013, the licensee identified its procedure for protecting the Monticello Nuclear Generating Plant (MNGP) from a design basis probable maximum flooding (PMF) event was inadequate to support the timely implementation of external flooding protection activities within the 12–day timeframe credited in the design basis as stated in the USAR. The licensee submitted licensee event report (LER) 05000263/2013–003–00 on July 30, 2013, to report this event in accordance with 10 CFR 50.73(a)(2)(ii)(B) as a condition that resulted in the nuclear power plant being in an unanalyzed condition that significantly degraded plant safety. The licensee submitted Supplements 1 and 2 to the original LER on September 26, 2013, and January 28, 2014, respectively. The original LER and Supplements 1 and 2 were previously evaluated by inspectors as part of inspection report 05000263/2014009.

On January 9, 2015, the licensee submitted Supplement 3 to the original LER to address information not included in the previous LER supplements as determined through a licensee Condition Evaluation (CAP 1454733–01). LER Supplement 3 added a paragraph to the event description stating that the flood mitigation strategy had been restored to full compliance on January 31, 2014, when the external flood monthly surveillance procedure was revised to provide the necessary detail to perform flood projections. The supplement further stated that Revision 47 of Procedure A.6 “Acts of Nature” was in effect at that time providing adequate detail to mitigate the consequences of a flood at the site including details for sealing penetrations in plant buildings. Lastly, Supplement 3 stated the USAR had been updated to include the levee and the LER Previous Similar Events section was modified to address that flood protection relied on bin-wall, earthen levee, pumps, and sealing penetrations to protect the site.

The inspectors reviewed the pertinent external flooding information added in LER 2013–003, Supplement 3 and corrective actions per CAP 1454733. Specifically, inspectors reviewed Procedure A.6 Revision 47, and current Revision 54, verifying

requirements were included for sealing penetrations in plant buildings. Inspectors also verified that Procedure 1478, 'External Flood Surveillance' Revision 8, contained requirements detailing the performance of flood projections. Lastly, inspectors verified USAR Section 12 had been updated to include the levee as a component of the site flood protection. All actions of CAP 1454733 were complete and the CAP was closed. Inspector review did not identify any additional corrective actions or issues of concern. Documents reviewed are listed in the Attachment to this report. This LER is closed.

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

.2 (CLOSED) Licensee Event Report 05000263/2013–007–02; Unanalyzed Condition Due to Inadequate Flooding Procedures

On August 28, 2013, the licensee was notified of the NRC's final significance determination for a finding of substantial safety significance (Yellow) involving the failure to maintain an adequate procedure addressing all of the effects of an external flooding scenario at the MNGP. The issue is the subject of this supplemental inspection. The licensee submitted LER 05000263/2013–007–00 on October 28, 2013, to report this event in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition which was prohibited by the plant's Technical Specifications (TSs); 10 CFR 50.73(a)(2)(ii)(B) as a condition that resulted in the nuclear power plant being in an unanalyzed condition that significantly degraded plant safety; 10 CFR 50.73(a)(2)(v)(A–D) as a condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to shut down the reactor and maintain it in a safe shutdown condition, remove residual heat, control the release of radioactive material, or mitigate the consequences of an accident; 10 CFR 50.73(a)(2)(vii) as an event where a single cause or condition caused at least one independent train or channel to become inoperable in multiple systems or two independent trains or channels to become inoperable in a single system designed to shut down the reactor and maintain it in a safe shutdown condition, remove residual heat, control the release of radioactive material, or mitigate the consequences of an accident; and, 10 CFR 50.73(a)(2)(ix)(A) as a condition that as a result of a single cause could have prevented fulfillment of a safety function for two or more trains or channels in different systems that are needed to shut down the reactor and maintain it in a safe shutdown condition, remove residual heat, control the release of radioactive material, or mitigate the consequences of an accident. The original LER and Supplements 1 and 2 were previously evaluated by inspectors as part of Inspection Report 05000263/2014009.

On January 27 2015, the licensee submitted Supplement 2 to the original LER to address information not included in the previous LER supplements as determined through CAP 1454733. LER Supplement 2 added a paragraph to the event description stating that the flood mitigation timeline had been reduced by developing an alternate plan for flood protection features, pre-staging equipment and materials and improving the quality of procedure A.6, and that the flood mitigation strategy had been restored to full compliance on January 31, 2014, when the external flood monthly surveillance procedure was revised to provide the necessary detail to perform flood projections. The supplement further stated that Revision 47 of Procedure A.6 "Acts of Nature" was in effect at that time providing adequate detail to mitigate the consequences of a flood at the site including details for sealing penetrations in plant buildings and that the USAR was updated to include the levee.

The inspectors reviewed the pertinent external flooding information added in LER 2013–007, Supplement 2 and corrective actions per CAP 1454733. Specifically, inspectors reviewed Procedure A.6 Revision 47, and current Revision 54, verifying requirements were included for pre-staging flooding-related equipment and materials. Inspectors also verified that Procedure 1478, 'External Flood Surveillance' Revision 8, contained requirements detailing the performance of flood projections. Lastly, inspectors verified USAR Section 12 had been updated to include the levee as a component of the site flood protection. All actions of CAP 1454733 were complete and the CAP was closed. Inspector review did not identify any additional corrective actions or issues of concern. Documents reviewed are listed in the Attachment to this report. This LER is closed.

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

.3 (CLOSED) Licensee Event Response 05000263/2015–004–00: Past Inoperability of Turbine Stop Valve Scram Function Exceeded Technical Specification Requirements

This event, which occurred on June 24, 2015, involved a turbine stop valve (SV–4) scram relay failing to de-energize as expected during surveillance testing. Per Technical Specification (TS) requirements, the licensee removed the logic fuse for the affected scram relay, documented the issue within CAP 1483971, and initiated an equipment causal evaluation (ECE) to determine the cause and final corrective actions. Because of the location of the likely failed component (stop valve limit switch within high radiation area), the licensee deferred further investigation of the cause until the spring 2017 refueling outage, but began performance of the ECE in parallel. Revision 00 to this LER was submitted on August 21, 2015, documenting the condition prohibited by TS for the turbine stop valve closure scram function of the reactor protection system. Specifically, the licensee concluded that there was not sufficient evidence that the SV–4 scram function was operable since June 1, 2015, (last successful test).

The inspectors reviewed the licensee's preliminary causal evaluation and immediate corrective actions. No new or additional findings or violations were identified as part of the inspector's review of LER 5000263/2015–004–00. Therefore Revision 00 is considered closed. However, the inspectors will review the final cause and corrective actions after the licensee investigates the SV–4 limit switches during the spring 2017 refueling outage and subsequently issues Supplement 01 to that LER.

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

.4 (CLOSED) Licensee Event Report 05000263/2015–003–01: Use of the Reactor Water Cleanup System to Lower Level without Declaring an Operation with a Potential for Draining the Reactor Vessel with Secondary Containment Inoperable

On September 11, 2015, the licensee issued this LER supplement to document the cause and corrective actions associated with LER 05000263/2015–003–00 which was reviewed and closed by the inspectors in Inspection Report (IR) 05000263/2015003. The inspectors reviewed the licensee's causal evaluation that determined insufficient guidance existed within the plant procedure controlling operation with a potential for draining the reactor vessel (OPDRV) activities. The inspectors also reviewed procedural

corrective actions to address the cause. No new or additional findings or violations were identified as part of the inspector's review. Documents reviewed are listed in the Attachment to this report. This LER is closed.

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

.5 (CLOSED) Licensee Event Report 05000263/2015–005–00: Use of Reactor Water Cleanup System to Lower Level without Declaring an Operation with the Potential for Draining the Reactor Vessel with Secondary Containment Inoperable—Extent of Condition Review

On August 3, 2015, as part of an extent-of-condition review associated with the conditions reported under LER 05000263/2015–003–00 and –01, the licensee identified two additional prior instances where conditions prohibited by TS occurred when OPDRV activities were performed without declaration on May 26, 2013, and February 4, 2014. The inspectors reviewed the extent-of-condition occurrences reported in this LER and no new or additional findings or violations were identified. Documents reviewed are listed in the Attachment to this report. This LER is closed.

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

.6 (CLOSED) Licensee Event Report 05000263/2015–007–00: Loss of Residual Heat Removal Capability

This event, which occurred at 05:34 hours on November 24, 2015, involved the automatic trip of the 12 RHR pump within 10 seconds of attempting to place it in service for shutdown cooling (SDC) operations. Prior to the event, the reactor was in Mode 3 (hot shutdown) following an unplanned reactor scram on the evening of November 23, 2015, Operators were placing RHR in shutdown cooling to achieve Mode 4 (cold shutdown) as part of the forced outage.

Following the 12 RHR pump trip, the licensee verified alternate decay heat removal was in service, documented the event in CAP 01503222, performed troubleshooting activities, and utilized the station's operational decision making process to safely place SDC in service at 13:54 hours on November 24, 2015. The station also reported within 8 hours of the event the condition that, at the time of discovery, could have prevented the fulfillment of the safety function of the RHR system.

The inspectors reviewed the licensee's troubleshooting and operational decision making documents, apparent cause evaluation (ACE), and corrective actions. The inspectors noted that the licensee appropriately identified improvements to operating procedures to ensure specificity when starting and establishing RHR SDC flow in Mode 3. Documents reviewed are listed in the Attachment to this report. This LER is closed.

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

.7 (CLOSED) Licensee Event Report 05000263/2015–006–00: Reactor Scram due to Group 1 Isolation from Foreign Material in the Main Steam Flow Instrument Line

This event occurred on November 23, 2015, and involved a trip of the #11 Reactor Reactor Recirculation Pump. Following the pump trip, a large spike in differential pressure occurred on the 'C' main steam line flow instrumentation line causing a Group 1

isolation. The Group 1 isolation caused the main steam isolation valves to close, resulting in a reactor scram. Although the 'D' outboard main steam isolation valve (MSIV) did not close until approximately 130 seconds after the Group 1 signal, the 'D' inboard MSIV closed within the required time frame, isolating the 'D' main steam line.

The licensee's root cause determined the differential pressure was from legacy foreign material (possibly from original plant construction) which obstructed the 'C' main steam line flow instrumentation line. The obstruction caused a momentary high steam flow condition sensed by all four flow switches on the 'C' Main Steam flow instrument line. Further, the licensee determined the cause of the #11 Reactor Recirculation Pump trip was less than adequate maintenance strategy that did not provide sufficient process controls to ensure the bench testing of high critical components identified and then corrected equipment deficiencies prior to installation. As a result, a loose wire on the #11 Recirculation Pump Motor-Generator set voltage regulator was not detected and corrected by the licensee prior to the event.

Immediate corrective actions included removing the foreign material from the instrumentation line and properly attaching the loose wire. The excess flow check valve (EFCV) and the MSIV issues were fixed prior to plant start up. Long term corrective actions are to revise a fleet procedure to require verification of proper torque on accessible electrical connections for critical components which are bench tested, and also to ensure that accessible soldered and crimped electrical terminations are inspected for signs of degradation during bench testing. Since the original plant construction, the foreign material exclusion (FME) programs and controls have been improved to preclude similar conditions. Therefore, no additional FME corrective actions are required.

The inspectors reviewed the licensee's corrective action documents, root cause evaluation, and associated corrective actions. The inspectors noted that the licensee completed corrective actions associated with the event and did not identify any new or additional findings or violations. Documents reviewed are listed in the Attachment to this report. This LER is closed.

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

4OA6 Management Meetings

.1 Exit Meeting Summary

On January 10, 2017, 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 October 7, 2016;

- Annual Review of Emergency Action Level (EAL) and Emergency Plan Changes and an inspection of a licensee-identified wide range gas monitor corrective action issue having potential to impact the licensee's ability to classify EALs were reviewed with Mr. P. Gardner, Site Vice President on December 8, 2016;

- The results of the EP Program inspection with Mr. P. Gardner on December 8, 2016;

- The Annual Review of EAL and Emergency Plan Changes with the Licensee's Emergency Preparedness Manager, Mr. L. Anderson, on December 16, 2016; and

- On October 28, 2016, the inspectors presented the inspection results to Mr. C. Peterson, Supervisor, Continuing Operations Training, at the Monticello Nuclear Generating Plant. The licensee acknowledged the information presented.

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

4OA7 Licensee-Identified Findings

.1 Welding Blanket Partially Covered Reactor Building Ventilation Intake (CAP 1539781)

The following violation of very-low significance (Green) was identified by the licensee and was a violation of NRC requirements and met the criteria of the NRC Enforcement Policy for being dispositioned as a Non-Cited Violation (NCV).

The licensee identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," on October 28, 2016, when the licensee failed to follow procedures while performing activities affecting quality. Specifically, the licensee failed to identify and control modifications of safety-related SSCs in accordance with FP–E–MOD–03; "Temporary Modifications," in that operators installed a welding blanket which partially blocked the suction of V–AC–10A and 10B (intakes of the Reactor Building main supply fans) to prevent welding sparks from being sucked into the intakes and failed to follow steps in that procedure.

Procedure FP–E–MOD–03, Revision 13 states, in part, that "This procedure shall be applied to Safety-Related SSCs, should be applied to augmented quality or reliability related SSCs, and may be applied to commercial facility changes. Contrary to these requirements, the licensee failed to use FP–E–MOD–03 to evaluate the physical change of installing welding blankets over Safety-Related Reactor Building Ventilation main supply fan intakes for potential plant impact prior to installation. Specifically, this resulted in an increase in negative pressure of the reactor building and an increase of steam chase temperatures which had the potential to upset plant stability by initiating a Group 1 Isolation. This was identified by the licensee during a deliberate observation process by the Shift Manager. Immediate corrective actions included stopping the welding, removing the welding blanket, reducing the steam chase temperature. The licensee documented this issue in the corrective action program (CAPs 1539781, 1541340, and 1541514).

The performance deficiency was determined to be more than minor because it adversely affected the Configuration Control attribute of the Initiating Events Cornerstone, with the

objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding screened as Green based on answering 'no' to the Initiating Events screening questions in inspection manual chapter (IMC) 0609 Appendix A, "The Significance Determination Process for Findings at Power," effective July 1, 2012. The issue was entered into the corrective action program as CAPs 1539781, 1541340, and 1541514. The inspectors concluded the issue was licensee-identified based on the guidance in IMC 0612, "Power Reactor Inspection Reports," issue date May 06, 2016.

.2 Past Reactor Building Wide Range Gas Monitor Settings Prevented Transition to Mid/High Range (CAP 1537833)

The following violation of very-low significance (Green) was identified by the licensee and is a violation of U.S. Nuclear Regulatory Commission (NRC) requirements which meets the criteria of the NRC Enforcement Policy for being dispositioned as a Non-Cited Violation.

Title 10 of the *Code of Federal Regulations* (10 CFR) 50.54(q)(2) requires, in part, that a holder of a license under this part shall follow and maintain the effectiveness of an emergency plan that meets the requirements in 10 CFR Part 50, Appendix E, and the planning standards of Title 10 CFR 50.47(b). Title 10 CFR 50.47(b)(4) requires standard emergency classification and action level scheme, the bases of which includes facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.

Contrary to the above, from June 30, 1994, through September 1, 2016, the licensee failed to maintain the effectiveness of the site's emergency plan and the emergency classification and action level scheme. Specifically, the licensee changed the Engineering Unit Conversion Factor (EUCF) for the Reactor Building (RB) Vent Wide Range Gas Monitor (WRGM), resulting in non-conservative monitor indications that were 13 times lower than the actual effluent levels. The EUCF error impacted the licensee's Emergency Plan's effectiveness (emergency classification and action level scheme) by reducing the licensee's ability to rely on the monitor to identify radiological conditions that exceed the Emergency Action Level (EAL) initiating condition threshold for the declaration of Emergency Classification Levels ranging from an Unusual Event (UE) up to and including a General Emergency (GE).

The use of the inaccurate RB Vent WRGM readings would delay the classification of an UE (RA1.2) due to actual effluent levels exceeding the threshold initiating conditions for the respective EAL, while the WRGM was erroneously indicating a much lower value. While this condition would prevent using the RB Vent WRGM for the declaration of an Alert (RA1.2), Site Area Emergency (SAE) (RS1.1), or GE (RG1.1), the licensee remained capable of performing the timely and accurate declaration of an Alert, SAE or GE by monitoring radiological conditions (releases) using the Off-gas Stack WRGM, in accordance with the bases identified in the respective EALs. Consequently, the Alert, SAE, and GE declaration (based on radiological conditions) would not be delayed or missed due to the RB WRGM issue.

The NRC determined that since the change in the EUCF would have only prevented the timely and accurate classification of a potential UE (as required by 10 CFR 50.47(b)(4)) the issue was determined to be of a very-low safety significance (Green) as indicated in Inspection Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," dated September 22, 2015. On September 1, 2016, this issue was identified through the licensee's self-assessment process and documented in the CAP as Action Request 01533526, "Reactor Building Vent Wide Range Gas Monitor Effluent Channel Reading Non-Conservative." The licensee implemented corrective actions to correct the EUCF for the RB Vent WRGM and restore compliance. As such, the NRC determined this to be a Non-Cited Violation in accordance with Section 2.3.2 of the Enforcement Policy.

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
B. Olson, Maintenance Manager
M. Wilson, Maintenance Supervisor
S. Quiggle, Chemistry Manager
C. England, Radiation Protection Manager
A. Ward, Regulatory Affairs Manager
E. Berry, Nuclear Oversight
R. Steffes, I&C Supervisor
L. Anderson, Emergency Preparedness Manager
K. VanGrinsven, Emergency Preparedness Supervisor
N. Sistek, Emergency Preparedness Specialist
A. Ward, Regulatory Affairs Manager
S. O'Connor, Regulatory Compliance Lead
A. Kouba, Harper, Regulatory Compliance
C. Peterson, Supervisor, Continuing Operations Training

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

None.		

Closed

05000263/2013–003–03	LER	Inadequate External Flooding Procedure [4OA3]
05000263/2013–007–02	LER	Unanalyzed Condition Due to Inadequate Flooding Procedures [4OA3]
05000263/2015–004–00	LER	Past Inoperability of Turbine Stop Valve Scram Function Exceeded Technical Specification Requirements [4OA3]
05000263/2015–003–01	LER	Use of the Reactor Water Cleanup System to Lower Level without Declaring an Operation with a Potential for Draining the Reactor Vessel (OPDRV) with Secondary Containment Inoperable [4OA3]
05000263/2015–005–00	LER	Use of Reactor Water Cleanup System to Lower Level without Declaring an Operation with the Potential for Draining the Reactor Vessel (OPDRV) with Secondary Containment Inoperable – Extent of Condition Review [4OA3]
05000263/2015–007–00	LER	Loss of Residual Heat Removal Capability [4OA3]
05000263/2015–006–00	LER	Reactor Scram due to Group 1 Isolation from Foreign Material in the Main Steam Flow Instrument Line [4OA3]

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

- 1151; Winter Checklist; Revision 89
- 2016–03–002; NOS Observation Report (MT Seasonal Readiness Performance Based Assessment); November 8, 2016
- WO 530984–01; 1151 Winter Checklist; September 15, 2016

1R04 Equipment Alignment

- 2124; Plant Prestart Checklist, Diesel Generators and Fuel Oil System; Revision 10
- 2126–02; Plant Restart Checklist Batteries and DC Power System 125 VDC; Revision 20
- 2126–03; Plant Restart Checklist Batteries and DC Power System 250 VDC; Revision 19
- 2154–28; Diesel Generator Air Start Prestart Valve Checklist; Revision 12
- 2454–14; Fuel Oil System Prestart Valve Checklist; Revision 20
- B.09.09–04; Operations Manual 250 VDC System; Revision 18
- B.09.10–05; Operations Manual 125 VDC System; Revision 30
- CAP 1538878; Minor Air Leak Found on 12 EDG Air Start System
- CAP 1538894; Late ID of Contingency Materials for #12 EDG Work
- CAP 1539079; Increased Coolant Leakage on G–3B,12 EDG
- NE–36394–18; Schematic Monticello Nuclear Generating Plant Emergency Service Water Pumps; Revision 76
- NH–36049–3; P&ID Instrument Air—Turbine Building; Revision 90
- NH–36051; P&ID Diesel Oil System; Revision 86
- NH–36051–1; P&ID Diesel Oil System; Revision 77
- NH–36664; P&ID RHR Service Water & Emergency Service Water Systems; Revision 92
- NX–9216–4; Schematic Monticello Nuclear Generating Plant Air Starting System; Revision E
- USAR 08.04; Plant Electrical Systems; Revision 33
- USAR 08.05; Plant Electrical Systems; Revision 32P

1R05 Fire Protection

- A.3–23–B; Fire Strategy for Fire Zone 23–B; Intake Structure Corridor; Revision 8
- A.3–31–B; Fire Strategy for Fire Zone 31–B; EFT Building First Floor (Division II); Revision 15
- A.3–32–B; Fire Strategy for Fire Zone 32–B; EFT Building Second Floor (Division II); Revision 10
- A.3–33; Fire Strategy for Fire Zone 33; EFT Building Third Floor; Revision 8
- A.3–37–A; Fire Strategy for Fire Zone 37; Transformers; Revision 14
- CAP 1513359; EFT Door 341 will not Secure
- CAP 1528014; Fall Protection Plan Needed for EFT Fire Detector Test
- CAP 1528401; EFT Building Fire Detector Sensitivity Found Out of Range
- CAP 1530922; No Spare CTZ Fire Panels Left in Stock
- CAP 1533012; Received Smoke Detection/EFT Air Intake Smoke Alarm
- USAR Appendix J.04; Fire Protection Program; Revision 34

- USAR Appendix J.05; Fire Hazards Analysis; Revision 34
- USAR Appendix J; Fire Protection Program; Revision 22

1R07 Annual Heat Sink Performance

- Calculation CA–04–167; 11 EDG ESW Heat Exchanger Performance Test—2007; Revision 3
- CAP 1527765; Data File Not Available for 11EDG–ESW Heat Exchanger Performance Test
- EE 27852; Engineering Evaluation of 11 EDG Jacket Cooler Thermal Performance Test 1404–01; July 10, 2016
- EE 27853; Engineering Evaluation of 12 EDG Jacket Cooler Thermal Performance Test
- 1404–01; July 25, 2016
- USAR 08.04; Plant Electrical Systems; Revision 33
- WO 467496–06; Mechanical G–3A Perform MECH 4107–01–PM; April 21, 2013
- WO 477014–04; EPRO G–3B Perform 4107–02 PM Exchanger Eddy Current Exam; April 23, 2015
- WO 528299; ENG–DGN, 1404–02 12 EDG ESW Hear Exchanger Performance Test; July 25, 2016
- WO 531773; ENG–DGN, 1404–01 11 EDG ESW Hear Exchanger Performance Test; July 10, 2016

1R11 Licensed Operator Requalification Program

- 2300; Reactivity Adjustment, Cycle 28; Revision 18
- CAP 1533627; Track Operator Requalification
- SEG RQ–SS–146; Reactor Shutdown with Loss of CRD and LOCA Requiring Drywell Spray; Revision 0

1R12 Maintenance Effectivness

- B.08.13–02; Ops Manual Control Room Heating and Ventilation and Emergency Filtration Train; Revision 11
- B.08.13–06; Ops Manual Control Room Heating and Ventilation and Emergency Filtration Train; Revision 7
- CAP 1506931; CV–1995 Failed to Open During RHR Quarterly
- CAP 1510780; P–228 Sounds Like Discharge Flow is Surging
- CAP 1520442; FP–PA–ECE–01 Not Able to be Followed
- CAP 1522553; P–228 Flow Still Surging Following Valve Replacement
- CAP 1535747; CV–1995 Failed to Open When Required
- CAP 1538860; P–202B, 12 RHR Pump, Considered (a)(2), At Risk per FP–E–MR–03
- CAP 1540189; 12 EDG Oil Leaks Noted After Repair
- CAP 1542757; Two Components with Same Equipment ID Number
- CAP 1545998; LS–23–98 (HPCI EXH DRN POT HI LVL) Alarm S.P. Questionable
- CAP 1525848; HPCI Slow to Start During 0255—0–IA–1
- CAP 1542829; HO–7 has Small Packing Leak
- CAP 1545590; HPCI Failed to Start per HPCI Comprehensive Test
- CAP 1545708; HRARWP not Assigned to HPCI work PMTs
- NF–157309; Wiring Schematic #12 Standby Diesel Generator Engine Control Cabinet C94; Revision 77
- NH–170037; Main Control Room CRV/EFT System; Revision 81
- NX–9216–5–4A; Physical Schematic & Field Connections – Model 999 #12 EDG; Revision 80
- QF0571; Troubleshooting Plan, HPCI HO–7 Fail to Open; December 20, 2016

- WO 414160; SV–1995, Replace SOV to Resolve OBN 1199936; April 01, 2011
- WO 514759–02; 0255–06–III–1 HPCI Comprehensive PMP & VLV Tests; December 21, 2016
- WO 537719; Replace Solenoid Due to Failure of CV–1995 to Open; December 31, 2015
- WO 546890; P–228, Investigate Cause of Pump Surging; October 27, 2016
- WO 552267; CV–1995 Failed to Open when Required; September 29, 2016
- WO 553410–04; EFT Filter V–FE–12 Discharge Damper Positioner InOp, Elec—VD9111B; October 19, 2016
- WO 553410–06; EFT Filter V–FE–12 Discharge Damper Positioner InOp, Fin—VD9111B; October 20, 2016
- WO 556544; HPCI Failed to Start per HPCI Comprehensive Test; December 21, 2016

1R13 Maintenance Risk Assessments and Emergent Work Control

- CAP 1444784; EDG Tornado Missile Barrier Design Impact on EDG Building
- CAP 1505206; Controlled Drawings for Tornado Missile Barriers are Hard to Read
- CAP 1506129; Design Error in the Upper Roof Missile Barrier Wall Panels
- CAP 1538357; EFT Filter V–FE–12 Discharge Damper Positioner InOp
- NF–93494; Monticello Nuclear Generating Plant EFT Bldg & MCR HVAC Control diagrams; Revision F
- NH–170037; Main Control Room CRV–EFT P&ID; Revision 81
- WO 501015; EC–23982 – Missile Protection on EDG Exhaust Piping; November 04, 2016
- WO 531057; Implement EC 26176 to Replace FIC–2943 (SBGT), Replace; November 9, 2016
- WO 553410–01; EFT Filter V–FE–12 Discharge Damper Positioner InOp, Fin–VD9111B; October 18, 2016
- WO 553410–02; EFT Filter V–FE–12 Discharge Damper Positioner InOp, Fin–VD9111B; October 19, 2016
- WO 553833; CRD–111 for HCU–22–27 Excessive Packing Leak; October 26, 2016
- WO 555012–01; MO–2036 HPCI Turbine Steam Supply, Steam Leak from Packing, November 21, 2016
- WO 555012–06; MO–2036 HPCI Turbine Steam Supply, Steam Leak from Packing, November 21, 2016

1R15 Operability Determinations and Functional Assessments

- CAP 1462022; 2015 Operator Burden Tracking GAR
- CAP 1484866; Damage to Fire Penetration Seal FZ–6581
- CAP 1507516; 2016 Operator Burden Tracking GAR
- CAP 1524349; Door 31 Discovered with Crack in Door Skin
- CAP 1524357; Door 9 Discovered with Crack in Door Skin
- CAP 1530295; Door 11 New Closers Not Closing Door with Ventilation On
- CAP 1534987; NOS ID: Issue Req Mgmt Atten; Ops Oversight of Equip
- CAP 1540736; NOS ID: Temp Fire Barrier Penetration Deficiency
- CAP 1543170; LS–23–98 May Not Be Functioning Properly
- CAP 1543517; LS–23–98 Porcelain Cracked during Installation
- NH–36249; P&ID (Steam Side) High Pressure Coolant Injection System; Revision 82
- NX–9288–8–1; Electrical Ass'y Remote Control Gas Treatment Units; Revision 78
- WO 460292; Mech–P–127, Install Replacement Piping per EC 20053; June 23, 2016
- WO 503476; Replace Door 73 and Frame; October 26, 2016
- WO 525523; CNST – FZ6581, New Penetration per EC 26771; March 10, 2016
- WO 531057; Implement EC 26176 to Replace FIC–2943, PreOp Test; November 9, 2016
- WO 532791; Replace Closers on Door–11; August 4, 2016

- WO 550280; OPS–FIR, 0266 Fire Pumps Siml Auto–Actu/Capability; October 29, 2016
- WO 555272; Acrid Odor from Relay J7TD in C–24A (SBGT); November 22, 2016
- WO 555510; Small Water Leak Under HPCI Steam Turbine; November 27, 2016

1R18 Plant Modifications

- T–Mod Info Sharing" Refresher Training Handouts; November 28, 2016
- At Risk Letter LS–23–98, Replace HPCI Level Switch LS–23–98 Topworks and Disable Auto Pumpdown Feature; November 29, 2016
- At Risk Letter LS–23–98–02, Replace HPCI Level Switch LS–23–98 Topworks and Disable Auto Pumpdown Feature; December 2, 2016
- CAP 1539781; Welding Blanket Installed Over the Suctions for V–AC–10A/B
- CAP 1541340; MT–WMN–WST–001G Revision 2 (Work Control Center Staff)
- CAP 1541514; Evaluate Need for T–Mod Refresher Training for SROs
- CAP 1543170; LS–23–98 May Not Be Functioning Properly
- CE 1539781; Welding Blanket Installed Over the Suctions for V–AC–10A/B; November 28, 2016
- EC–27905; Replace HPCI Level Switch LS–23–98 Topworks and Disable Auto Pump Down Feature; November 30, 2016
- FP–E–MOD–02; Fleet Procedure, Engineering Change Control, Revision 20
- FP–E–MOD–03; Fleet Procedure, Temporary Modifications, Revision 13
- NH–36249; High Pressure Coolant Injection P&ID; Revision 82
- NX–20445; Magnetrol Technical Manual; Revision 004
- NX–8292–12–3; Alarm Switch Contacts Elementary; Revision 76
- NX–8292–12–7; Solenoid Switch Contacts Elementary; Revision 76
- SCR–16–0377; 50.59 Screening – EC 27905; Revision 0
- WO 555510–15; Small Water Leak Under HPCI Steam Turbine, Install T–Mod; November 27, 2016

1R19 Post-Maintenance Testing

- CAP 1542671; Viper Testing C–Clamps Missing
- NF–57309; Wiring – 12 Standby Diesel Generator Engine Control Cabinet C94; Revision 77
- NX–9216–5–3A; Physical Schematic & Field Connections, 12 EDG; Revision 77
- NX–9216–5–4A; Physical Schematic & Field Connections, 12 EDG; Revision 80
- QF–0552; Equivalency Evaluation 12 EDG SCR/C93 & SCR/C–94, ECN 25800; September 8, 2016
- WO 512858–01; PCV–2992 Pressure Control Valve to RHR Charge Lien Disassemble and Inspect; November 15, 2016
- WO 530626; 12 DGN Relays: PMT 12 EDG Relays – Set 4; October 24, 2016
- WO 531057; Implement EC 26176 to Replace FIC–2943 (SBGT), PMT, Replace; November 10, 2016
- WO 535246–03; Disassemble and Inspect PCV–2992 – Test Actuator; November 15, 2016
- WO 535246–03; Post-Maintenance Test / Return to Service Instructions: PCV to RHR Charge Line; Revision 1
- WO 544802; 12 DGN Oil Leak: PMT G–3B, Flange to Lube Oil Filter; October 25, 2016
- WO 553410–05; EFT Filter V–FE–12 Discharge Damper Positioner InOp, Ops–VD9111B PMT; October 19, 2016
- WO 553833; CRD–111 for HCU–22–27 Excessive Packing Leak, PMT; October 26, 2016
- WO 555012–05; MO–2036 HPCI Turbine Steam Supply, Steam Leak from Packing, PMT, November 21, 2016

1R22 Surveillance Testing

- 0000–A; Operations Daily Log – Mode 1; Revision 97
- 0000–E; Operations Daily Log – Part E; Revision 102
- 0255–02–III; SBLC Quarterly Pump and Valve Tests; Revision 61
- 0279; ATWS Reactor Level and Pressure Transmitter Calibration; Revision 12
- CAP 15429242; Documentation Issue with Surveillance 0000–E
- QF–2007; Planning and Approval of High Risk Work (WO 512004); November 1, 2016
- Technical Specifications 3.3.6.1; SR 3.3.6.1.1; Amendment No. 146
- WO 512004; 0279 ATWS Recirculation Pump Hi–Pressure Trip Transmitter Calibration; November 1, 2016
- WO 511713; 0187–02A, 12 EDG Start & Load Test; October 23, 2016
- WO 540967; 0460 CR Air Intake Rad Monitor Test; October 14, 2016
- WO 541374; 0187–02, 12 EDG Start & Load Test; October 23, 2016
- WO 541375; 0187–02B, 12 EDG Start & Load Test; October 23, 2016
- WO 541403; 0255–11–III–4, 14 ESW Pump Flow Test; October 20, 2016
- WO 541882; 0278, ATWS Recirc Pump Trip Hi Press Func Ck; October 27, 2016
- WO 542577–01; 0255–02–III SBLC Quarterly Pump and Valve Tests; November 9, 2016

1EP2 Alert and Notification System Evaluation

- 1317; Emergency Alert Notification System Test; Revision 23
- 1359; Public Alert Notification Systems (PANS) Weekly Cancel Signal Test and Monthly; Revision 21
- 2015 Emergency Planning Guide and Calendar; No Date
- 2016 Emergency Planning Guide and Calendar; No Date
- Annual Review of the Monticello Nuclear Generating Plant's Public Alert and Notification System
- CAP 1477908; Siren W 54 did not Respond to Activation Test
- CAP 14817555; Shelburne County Backup Siren Activation System did not Work
- CAP 1500143; Siren W–15 did not Respond to Activation Test
- CAP 1529656; Siren S–16 did not Respond to Cancel Test
- CAP 1544294; Annual Siren Observation Missed
- CAP 1544275; Unexpected Siren Activation Test Result
- KLD TR–505; Monticello Nuclear Generating Plant Evacuation Time Estimate by KLD; Revision 1
- KLD TR–869; Monticello Nuclear Generating Plant 2016 Population Update Analysis; Revision 0
- Monticello Alert and Notification System Backup is Route Alerting FEMA; No Date
- Siren Testing and Maintenance Data; October 2014 through October 2016
- ANS; Alert and Notification System Design Report; Revision 1
- Activation Test; Revision 20
- Notification System (PANS) Performance; January 5, 2016

1EP3 Emergency Response Organization Staffing and Augmentation System

- 5790–102–04; Emergency Call List – NUE; Revision 102
- 5790–104–04; Emergency Call List – Alert/Site Area/General; Revision 124
- A.2–001; Emergency Organization; Revision 54
- A.2–002; Monticello On–Shift Staffing Analysis; Revision 1
- A.2–106; Activation and Operation of the TSC; Revision 38

- A.2–107; Activation and Operation of the OSC; Revision 36
- A.2–111; Activation and Operation of the Alternative Facilities During a Security Threat; Revision 3
- A.2–802; Activation and Operation of the EOF; Revision 20
- CAP 1453815; Results of EP Activation Drill 10/29/2014; October 30, 2014
- CAP 1500992; 11/09/2015 ERO Augmentation Drill (call in); November 10, 2015
- CAP 1501154; Neither Cell Phone or Pager Alerted ERO to Call–out; November 9, 2015
- CAP 1525973; NRC EP Participation KPI will go Below 100%; June 22, 2016
- Current ERO Team Roster; October 25, 2016
- EP–PLT–2014 1317; 2014 ERO Alert Notification System Tests; No Date
- EP–PLT–2015 1317; 2015 ERO Alert Notification System Tests; No Date
- EP–PLT–2016 1317; 2016 ERO Alert Notification System Tests; No Date
- ERO Training and Qualification Records (Sample); Various Dates
- MNGP 1317; Emergency Alert Notification Systems Test; Revision 23
- MT–BEP; Monticello Emergency Plan Training Program Description; Revision 19

1EP4 Emergency Action Level and Emergency Plan Changes

- Monticello Nuclear Generating Plan Emergency Plan; Revisions 46 and 47
- A.2–201; Classification of Emergencies; Revision 50
- A.2–002; Monticello On–Shift Staffing Analysis; Revisions 0 and 1
- MT–BEP; Emergency Plan Training Program Description; Revisions 18 and 19
- 10CFR50.54(q) Evaluation Number MT–2015–306; July 17, 2015
- 10CFR50.54(q) Evaluation Number MT–2016–412; February 1, 2016
- 10CFR50.54(q) Evaluation Number MT–2016–420; March 4, 2016

1EP5 Maintenance of Emergency Preparedness

- 2015 Monticello Emergency Planning Calendar; No Date
- 2016 Monticello Emergency Planning Calendar; No date
- A–EP–MNGP–2015–01–006; 2015 Nuclear Oversight MNGP Emergency Preparedness
- A–EP–MNGP–2016–1; 2016 Nuclear Oversight MNGP Emergency Preparedness Audit; No Date
- Analysis; October 31, 2016
- Audit; February 19, 2015
- CAP 1478656; EOP Change Process does not Address E Plan Impact; May 12, 2015
- CAP 1486261; EP Drill: Potential Trend in Communication/notification; July 15, 2015
- CAP 1496826; Emergency Plan Critique Report Health Physics (HP) Drill; October 14, 2015
- CAP 1496827; Emergency Plan Critique Report Medical Drill; October 7, 2015
- CAP 1496913; EP Baseline NRC Inspection Readiness–MNGP; August 15, 2016
- CAP 1501216; Emergency Plan Critique Report SAMG Table–Top Drill; November 10, 2015
- CAP 1509650; EP Equipment Inventory Concerns; January 22, 2016
- CAP 1517026; EP Critique Report 2016 Q1 Table–Top Series w/DEP; April 20, 2016
- CAP 1525592; EP Critique Report 2016 Q2 Table–Top Series w/DEP; July 30, 2016
- CAP 1530367; Potential Trend in NRC DEP Performance; August 03, 2016
- CAP 1530367; Potential Trend in NRC DEP Performance; August 03, 2016
- CAP 1533526; RBV WRGM Effluent Channel Reading Non–Conservative; September 1, 2016
- CAP 1544191; Procedure Errors Identified during NRC Inspection; December 6, 2016
- CAP 1544401; Respiratory Protection Minimum Requirements Improvements; December 8, 2016
- EP Critique Report Full Scale Drill; August 16, 2016

- EP Critique Report Full Scale HAB Exercise; August 18, 2015
- FP–EP–EQP–01; Equipment Important to Emergency Response; Revision 7
- FP–EP–SURV–05; Requirements for Annual Independent Review of EP Program; Revision 3
- KLD TR–505; Monticello Nuclear Generating Plant Evacuation Time Estimate by KLD; Revision 1
- KLD TR–869; Monticello Nuclear Generating Plant 2016 Population Update Analysis; Revision 0
- Medical Drill Report; October 6, 2016
- Monticello Emergency Plan; Revision 47
- Reactor Building Vent Wide Range Gas Monitoring & Emergency Action Level White Time Estimates; Revision 1

1EP6 Drill Evaluation

- FG–EP–WI–14; Emergency Preparedness Drill and Exercise Manual; November 3, 2016

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

- 15–100; Radioactive Waste Shipment; Dewatered Resin; September 21; 2015
- 15–13; Radioactive Waste Shipment; Dry Active Waste; February 13, 2015
- 15–24; Radioactive Material Shipment; Equipment; March 10, 2015
- 16–38; Radioactive Waste Shipment; Dewatered Resin; May 19, 2016
- 2016 10 CFR61 Database Update Documentation (T–34A); May 3, 2016
- 2016 10 CFR61 Database Update Documentation Primary Resins; August 29, 2016
- 4 AWI–08.05.02; Radioactive Material Shipping; Revision 21
- 4 AWI–08.05.03; Inventory Control of Radioactive Material in Approved Storage Locations; Revision 7
- 4 AWI–08.12.02; Hazardous Waste Management; Revision 7
- CAP 1479312; Rad Shipping Software Error; May 16, 2015
- CAP 1487892; Mixed Waste Storage Area Housekeeping Deficiencies; July 30, 2015
- CAP 1517648; Through Wall Hole in Rotor Storage Building; April 3, 2016
- CAP 1530094; Safety Matter: Storage Drum Appears to be Pressurized; August 1, 2016
- CAP 1533078; Snapshot Self–assessment; Robatel Shipping Cask Type B RT–100 Documentation Review; August 29, 2016
- CAP 1536768; Resin Density Basis not Formally Documented; October 5, 2016
- CAP 1536987; Lack of Guidance on Use of Barrels Onsite; October 6, 2016
- FL–RPR; Radiation Protection Technician Training Program Description; Revision 6
- FP–RP–RW–02; Radioactive Shipping Procedure; Revision 15
- Monticello Nuclear Generating Plant Response to IE Bulletin 79–19; September 25, 1979
- Ops Man B.07.03–05; Operations Manual Section; Solidi Radwaste System; Revision 26
- PCP–01; Process Control Program for Wet Radioactive Wastes; Revision 0
- R.11.08; Selection and Entry of 10CFR Part 61 Correlation Factors, Revision 10
- Self–assessment; Assess the Radioactive Shipping Program Utilizing the NRC Inspection Manual; July 8, 2016
- Training Records; Various Records; Various Dates

4OA1 Performance Indicator Verification

- FG–EP–WI–18; Emergency Preparedness Performance Indicator Guidance; Revision 1
- FP–PA–PI–01; Performance Indicator Control; Revision 11

- FP–PA–PI–02; NRC/IINPO/WANO Performance Indicator Reporting; 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
- FP–R–PI–01; Preparation of NRC Performance Indicators; Revision 4
- Monticello Station Log Entries; October 2015 through September 2016
- MSPI Deviation Report; Cooling Water Systems; October 2015 through September 2016
- MSPI Deviation Report; MSPI Residual Heat Removal System; October 2015 through September 2016
- NEI 99–02; Regulatory Assessment Performance Indicator Guidance; Revision 7
- NEI 99–02; Regulatory Assessment PI Guideline; Revision 7
- NRC Performance Indicator Data Sheets; Emergency Preparedness – Drill/Exercise
- NRC Performance Indicator Data Sheets; Emergency Preparedness – ERO
- NRC Performance Indicator Data Sheets; NRC Indicator Alert and Notification
- Performance; 2nd Quarter 2015 through 3rd Quarter 2016
- PRA–CALC–05–003; MSPI Basis Document; Revision 6
- Readiness 2nd Quarter 2015 through 3rd Quarter 2016
- System Reliability; 2nd Quarter 2015 through 3rd Quarter 2016

4OA2 Identification and Resolution of Problems

- 1131; Reactor Building Crane; Revision 19
- 3560; Infrequent Test or Evolution Briefing Guide; Revision 11
- 4 AWI–06.06.01; Site Rigging, Lifting, and Material Handling Program; Revision 36
- 4009–05–PM; Hoisting Equipment and Rigging Inspection – Slings; Revision 3
- 4230–03–PM; Reactor Building Crane, Main Hoist System (Nondestructive Examination Record); December 22, 2015
- 9507; DSC Transport From Refueling Floor to ISFSI; Revision 19
- CAP 1402246; NRC Question on DSC PT Examination
- EC 18624; Spent Fuel Loading of Dry Shielded Canisters 6A–10B; March 23, 2013
- NUH–06–113.49; Areva Equipment Use Certificate (OS197–1 Lifting Yoke); June 20, 2016
- QF–2007; Planning and Approval of High Risk Work (WO 543162); No Date
- WO 453162–05; EC18624; Pre–Job Activities on the Lifting Yoke; September 8, 2016
- WO 539556; Mechanical Crane 1131 Reactor Building Crane; September 23, 2016
- WO 543162; Transfer DSC #16 to ISFSI; October 3, 2016
- WO 550433; Mechanical Crane 1131 Reactor Building Crane; September 23, 2016

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

- 1478; External Flood Monthly and Annual Surveillance; Revision 15
- 1478; External Flood Monthly and Annual Surveillance; Revision 8
- A.6; Acts of Nature; Revision 51
- A.6; Acts of Nature; Revision 54
- B.03.04–05; Operations Manual Residual Heat Removal System; Revision 80
- CAP 1479284; NRC RI OPDRV Comment
- CAP 1483417; Extent of Condition on OPDRV from AR 1479284
- CAP 1483971; SVOS–4 Failed During 0009 Stop Valve Closure Scram
- CAP 1487368; Past Operability Review of Turbine Stop Valve SV–4 RPS Switch
- CAP 1503222; 1F2801 – SDC Suction Valves Closed when Starting SDC
- CAP 1503222; 1F2801 – SDC Suction Valves Closed when Starting SDC
- CAP 1454733; 95002: LER 2013–003–01 Requires Evaluation
- CAP 1454733–02; Revise LER 2013–003 as Described in CE 1454733–01

- CAP 1479284; NRC RI OPDRV Comment
- CAP 1483417; Extent of Condition on OPDRV from AR 1479284
- CAP 1483971; SVOS–4 Failed During 0009 Stop Valve Closure Scram
- CAP 1487368; Past Operability Review of Turbine Stop Valve SV–4 RPS Switch
- CAP 1503122; Reactor Scram #34
- CAP 1503122–02; Root Cause Evaluation
- CAP 1503123; Group 1 Isolation During Reactor Scram #134
- DBD–T.05; External Flooding Topic; Revision 6
- LER 05000263/2013003–00; Inadequate External Flooding Procedure; July 30, 2013
- LER 05000263/2013003–01; Inadequate External Flooding Procedure; September 26, 2013
- LER 05000263/2013003–02; Inadequate External Flooding Procedure; January 28, 2014
- LER 05000263/2013003–03; Inadequate External Flooding Procedure; January 9, 2015
- LER 05000263/2013007–00; Unanalyzed Condition Due to Inadequate Flooding Procedures; October 28, 2013
- LER 05000263/2013007–01; Unanalyzed Condition Due to Inadequate Flooding Procedures; March 28, 2014
- LER 05000263/2013007–02; Unanalyzed Condition Due to Inadequate Flooding Procedures; January 27, 2015
- LER 05000263/201500301; Use of the Reactor Water Cleanup System to Lower Level without Declaring an Operation with a Potential to Drain the Reactor Vessel (OPDRV) with Secondary Containment Inoperable; September 11, 2015
- LER 05000263/201500400; Past Inoperability of Turbine Stop Valve Scram Function Exceeded Technical Specification Requirements; August 21, 2015
- LER 05000263/2015006–00; Reactor Scram due to Group 1 Isolation from Foreign Material in the Main Steam Flow Instrument Line; November 23, 2015; January 21, 2016
- LER 05000263/201500700; Loss of Residual Heat Removal Capability; January 21, 2016
- Operations Manual B.03.04–05; Residual Heat Removal System; Revision 80
- OWI–03.03; Operation with Potential to Drain the Reactor; Revision 13
- USAR Section 12; Plant Structures and Shielding; Revision 33P

LIST OF ACRONYMS USED

ACE	Apparent Cause Evaluation
ADAMS	Agencywide Document Access Management System
ANS	Alert Notification System
CAP	Corrective Action Program
CFR	*Code of Federal Regulations*
DRP	Division of Reactor Projects
DSC	Dry Shielded Canister
EAL	Emergency Action Levels
EDG	Emergency Diesel Generator
ERO	Emergency Response Organization
ESW	Emergency Service Water
EUCF	Engineering Unit Conversion Factor
HPCI	High Pressure Coolant Injection
HSM	Horizontal Storage Module
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
LER	Licensee Event Report
MSPI	Mitigating Systems Performance Index
NCV	Non–Cited Violation
NEI	Nuclear Energy Institute
NOS	Nuclear Safety Oversight
NRC	U.S. Nuclear Regulatory Commission
PARS	Publicly Available Records System
PI	Performance Indicator
PM	Planned or Preventative Maintenance
PMT	Post–Maintenance Testing
RHR	Residual Heat Removal
RPS	Reactor Protection System
SBGT	Standby Gas Treatment
SBLC	Standby Liquid Control
TS	Technical Specification
USAR	Updated Safety Analysis Report

Letter to Peter A. Gardner from Kenneth Riemer dated February 13, 2017

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT—NRC INTEGRATED INSPECTION REPORT 05000263/2016004; ANNUAL EMERGENCY PREPAREDNESS ASSESSMENT 05000263/2016501; AND ISFSI 072000058/2016001

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