

## Monticello

### 3Q/2014 Plant Inspection Findings

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## Initiating Events

**Significance:** G Jun 30, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO COMPLY WITH ASME CODE PIPING DESIGN REQUIREMENTS.**

The inspectors identified a finding of very low safety significance and an associated non-cited violation of 10 CFR 50, Appendix B, Criterion III, "Design Control," when the licensee failed to comply with the appropriate American Society of Mechanical Engineers (ASME) Code requirements during implementation of the temporary modification (TMOD) of the recirculation pump seal coolers. Specifically, the licensee failed to meet the ASME Code, Section III, Subsection NB 3671.3, Class I piping design requirements for the end cap joint design on the vent line in this TMOD.

The inspectors determined that the performance deficiency was more than minor, and a finding because it was associated with the Design Control attribute of the Initiating Systems Cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the licensee inadequately designed the vent line end cap such that the design was non-compliant with ASME Code, Section III, Subsection NB 3671.3 requirements and, therefore, potentially challenged plant stability. The inspectors reviewed Attachment 0609.04, "Initial Characterization of Findings," Table 3—SDP Appendix Router. The inspectors answered 'Yes' to all of the questions in Sections A through E of Table 3, and, therefore, the finding was evaluated using the SDP in accordance with IMC 0609, "The Significance Determination Process (SDP) for Shutdown Operations," Appendix G, Attachment 1, Exhibit 2, "Initiating Events Screening Questions." The inspectors answered all the questions in Exhibit 2 and determined that this finding did not increase the likelihood of a plant initiating event during shutdown operations nor did it affect any shutdown safety functions. Therefore, the finding was determined to have very low safety significance. This finding has a cross-cutting aspect in the area of Human Performance, Avoid Complacency, because the licensee failed to recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes. Specifically, the licensee failed to recognize the latent issue concerning appropriate reactor coolant system pressure boundary identification and subsequent ASME Code piping design requirements for piping systems associated with this TMOD (H.12).

Inspection Report# : [2014003](#) (*pdf*)

**Significance:** G Mar 31, 2014

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**RCS PRESSURE BOUNDARY LEAKAGE OPERATION PROHIBITED BY TECHNICAL SPECIFICATIONS.**

A finding of very low safety significance and a non-cited violation of Technical Specification (TS) 3.4.4, "RCS Operational Leakage," was self revealed when the licensee failed to comply with TS 3.4.4, Condition C, which required the plant to be in MODE 3 within 12 hours if pressure boundary leakage exists. Specifically, the licensee operated with reactor coolant system (RCS) pressure boundary leakage as a result of corrosion in the 12 recirculation pump upper seal cooler between August 9, 2013, and January 17, 2014, which is a condition prohibited by TS. The

site initiated a troubleshooting team, and following confirmation of the location of the leakage, the plant was shut down in accordance with TSs. The site performed an apparent cause evaluation; implemented a modification to remove the affected seal cooler from service; and developed a periodic replacement plan for heat exchangers in a similar configuration.

The inspectors determined that the licensee's operation with RCS pressure boundary leakage, a condition prohibited by TSs, due to recirculation pump seal cooler leakage, was a performance deficiency requiring evaluation. The inspectors determined that the finding was more than minor in accordance with IMC 0612, Appendix B, because it adversely impacted the Initiating Events Cornerstone attribute of equipment performance—barrier integrity, and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors assessed the significance of this finding in accordance with IMC 0609 and determined this finding was of very low safety significance. The inspectors concluded that this finding was cross-cutting in the Problem Identification and Resolution, Evaluation area, because of the failure to thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance [P.2].

Inspection Report# : [2014002](#) (*pdf*)

**Significance:**  Mar 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

#### **FAILURE TO FOLLOW PROCEDURE FOR RCS OPERABILITY DETERMINATION.**

The inspectors identified a finding of very low safety significance and a non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to ensure that activities affecting quality be prescribed by documented procedures of a type appropriate to the circumstances and be accomplished in accordance with these procedures. Specifically, the licensee failed to accomplish activities affecting quality in accordance with Fleet Procedure

FP-OP-OL-01, in that, on August 9, 2013, and January 3, 4, 7, and 17, 2014, the site failed to ensure that the operability determination for leakage into reactor building closed-cooling water (RBCCW) was sufficient to address the capability of a structure, system, and component (SSC) to perform its specified safety function and, as a result, the site failed to properly classify leakage from the recirculation system as reactor coolant system (RCS) pressure boundary leakage. Following NRC questions and actions by the site to confirm the location of the leakage, the site revised the operability determination and classified the leakage as reactor coolant pressure boundary (RCPB) leakage. This issue was entered into their corrective action program; a root cause evaluation was performed; and additional corrective actions were in development at the time of this report.

The inspectors determined that the failure to properly classify RCS pressure boundary leakage in accordance with the fleet operability determination process was a performance deficiency requiring evaluation. The inspectors determined the issue was more than minor because, if left uncorrected, the failure to perform a thorough operability evaluation for conditions where potential RCPB leakage exists could lead to a more significant safety concern. The inspectors assessed the significance of this finding in accordance with IMC 0609 under the Initiating Events Cornerstone, and determined that it was of very low safety significance. The inspectors concluded that this finding was cross-cutting in the Human Performance, Conservative Bias area, because of the licensee's failure to use decision-making practices that emphasize prudent choices over those that are simply allowable, and a failure to ensure that proposed actions are determined to be safe in order to proceed, rather than unsafe in order to stop [H.14].

Inspection Report# : [2014002](#) (*pdf*)

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## **Mitigating Systems**

**Significance:**  Jun 30, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**INADEQUATE STANDBY LIQUID CONTROL QUARTERLY PUMP AND VALVE TEST DUE TO PROCEDURALIZED UNACCEPTABLE PRECONDITIONING.**

The inspectors identified a finding of very low safety significance and a non cited violation of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” on May 7, 2014, for the licensee’s failure to ensure that activities affecting quality were prescribed by documented procedures of a type appropriate

to the circumstances. Specifically, the site changed Procedure 0255–02–III, “SBLC [standby liquid control] Quarterly Pumps and Valve Test,” to include allowances for starting the safety-related SBLC pumps and adjusting a throttle valve to achieve the desired pump discharge pressure prior to performance of in service testing, actions which, without evaluation, constituted unacceptable preconditioning.

The inspectors determined that the licensee’s failure to ensure the SBLC pump and valve test surveillance procedure was appropriate to the circumstances was a performance deficiency requiring evaluation. The inspectors screened the performance deficiency and determined that the issue was more than minor because it adversely impacted the Mitigating Systems Cornerstone attribute of Procedure Quality, and affected the cornerstone objective to ensure the availability, reliability, and capability that respond to initiating events to prevent undesirable consequences (i.e., core damage). In addition, if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, proceduralizing actions which could constitute unacceptable preconditioning, such as manipulating the physical condition of a structure, system or component (SSC) before or during TS surveillance or ASME Code testing, could mask the actual as-found condition of the SSC and result in an inability to verify the operability of the SSC.

The inspectors determined that this finding was of very low safety significance because each question listed in IMC 0609, Appendix A, Exhibit 2, “Mitigating Systems Screening Questions,” was answered ‘No’. The inspectors concluded that this finding was cross-cutting in the Human Performance, Change Management aspect, because the licensee did not use a systematic process for evaluating and implementing change so nuclear safety remains the overriding priority. Specifically, revising procedures to allow the SBLC pump to be started for test configuration flow adjustments immediately prior to a surveillance test, without an evaluation of preconditioning acceptability, could mask the ability to detect degraded equipment performance (H.3).

Inspection Report# : [2014003](#) (*pdf*)

**Significance:**  Mar 28, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**Shorting Switch Modification Failed to ensure Drywell Spray Valves would not Spuriously Open.**

The inspectors identified a finding of very-low-safety significance and associated NCV of 10 CFR Part 50, Appendix R, Section III.G.2 for the licensee’s failure to ensure that safe shutdown (SSD) equipment were not susceptible to fire induced failures. Specifically, the licensee failed to ensure that the Drywell Spray Motor Operated Valves MO-2020 and MO-2021 would not spuriously open due to fire induced failures (i.e., open circuit and hot shorts) when they installed shorting switch modifications for these valves. The licensee entered the issue into their Corrective Action Program and established hourly fire tours in all affected fire areas.

The performance deficiency was determined to be more than minor because the multiple spurious operations of the drywell spray valves could affect safe shutdown of the plant in the event of fire. The finding affected the Mitigating Systems cornerstone. These valves were required to stay in their closed position during a fire event to ensure adequate net positive suction head (NPSH) for safe shutdown pumps. Fire induced circuit failures (i.e., open circuits and hot

shorts) on their control cables could result in these valves spuriously opening. The finding represented a low degradation; and therefore, the inspectors determined that the finding screened as having very-low-safety significance (Green) in Task 1.3.1 of IMC 0609, Appendix F. The inspectors determined that the finding had a cross-cutting aspect in the area of Problem Identification and Resolution because the licensee did not thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, the licensee's evaluation incorrectly concluded that the shorting switch modification would preclude multiple spurious operations of the Drywell Spray valves.

Inspection Report# : [2014008](#) (*pdf*)

**Significance:**  Mar 28, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**Both Redundant Safe Shutdown Trains of Nitrogen Bottles were Found Located In the Same Fire Area.**

The inspectors identified a finding of very-low-safety significance and associated NCV of 10 CFR Part 50, Appendix R, Section III.G.1 for the licensee's failure to ensure one of the redundant SSD trains located in the same fire area was free of fire damage. Specifically, both trains of redundant nitrogen bottles used to open and maintain open Safety Relief Valves (SRVs) to depressurize and cooldown the reactor were found located in the same fire area. The licensee entered the issue into their Corrective Action Program and established hourly fire tours in the affected fire areas.

The performance deficiency was determined to be more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of Protection Against External Factors (Fire) and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to fire events prevent undesirable consequences (i.e., core damage). Specifically, the licensee failed to ensure that one train of nitrogen to supply credited SRVs to achieve and maintain shutdown conditions would be free of fire damage because both trains of nitrogen bottles were located in the same fire area. The finding represented a low degradation and therefore the inspectors determined that the finding screened as having very-low-safety-significance (Green) in Task 1.3.1 of IMC 0609, Appendix F. The finding was not associated with a cross-cutting aspect because the finding was not representative of current performance.

Inspection Report# : [2014008](#) (*pdf*)

**Significance:**  Mar 28, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**Repairs Credited for Hot Shutdown Conditions.**

The inspectors identified a finding of very-low-safety significance and associated NCV of 10 CFR Part 50, Appendix R, Section III.G.1 for the licensee's failure to provide one train of systems necessary to achieve and maintain hot shutdown conditions. Specifically, the licensee failed to ensure that a sufficient quantity of nitrogen existed from the alternate nitrogen system to supply credited SRVs for the duration that the plant is expected to be in hot shutdown following a fire. Instead, the licensee relied on replacing the nitrogen bottles using a repair procedure. Similarly, the licensee failed to ensure one train of diesel fuel oil transfer system for the emergency diesel generator (EDG) was free of fire damage in the event of a fire. Instead the licensee relied upon repair activities for fuel transfer. The licensee entered the issue into their Corrective Action Program and established hourly fire tours in the affected fire areas.

The performance deficiency was determined to be more than minor because the licensee failed to ensure that safe shutdown equipment and circuits (i.e., alternate nitrogen system and EDG fuel oil) were free of fire damage for the duration that could be expected to maintain hot shutdown conditions following a fire. These repair activities could have potentially affected the plant and operators' activities during a challenging fire event. The finding affected the Mitigating Systems cornerstone. The finding represented a low degradation and therefore the inspectors determined that the finding screened as having very-low-safety significance (Green) in Task 1.3.1 of IMC 0609, Appendix F. The

inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance because the licensee did not recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes. Individuals did not implement appropriate error reduction tools.

Inspection Report# : [2014008](#) (*pdf*)

**Significance:**  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**SBLC DISCHARGE PRESSURE PROCEDURAL LIMITS EXCEEDED.**

The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” when the licensee failed to accomplish activities affecting quality in accordance with instructions, procedures, or drawings. Specifically, licensee personnel failed to abide by procedural requirements for pump discharge pressure limitations contained in Procedure 0255 02 III, “SBLC Quarterly Pump and Valve Tests,” when they imprecisely controlled the 11 standby liquid control (SBLC) flow control valve during the test. This led to the halting of the SBLC test while the equipment condition was evaluated and resulted in the validity of the inservice test (IST) data being brought in to question. The licensee re performed the test for the 11 SBLC pump; stood down the workers involved; increased operational oversight of the test; evaluated the condition of the equipment; performed a human performance event review; and included communication of the error as part of a site wide stand down. This issue was entered into the licensee’s corrective action program (CAP 1401816).

The inspectors determined that the licensee’s failure to abide by SBLC procedural limitations was a performance deficiency, because it was the result of the failure to meet the requirements of 10 CFR 50, Appendix B, Criterion V; the cause was reasonably within the licensee’s ability to foresee and correct; and should have been prevented. The inspectors screened the performance deficiency per Inspection Manual Chapter (IMC) 0612, “Power Reactor Inspection Reports,” Appendix B, and determined that the issue was more than minor because, if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, if pressure limitations had been further exceeded, the discharge relief valve would have lifted, which could result in inoperability of the 11 SBLC pump until repair or replacement of the relief valve. In addition, inadequately performing the SBLC surveillance and IST testing could have the potential to mask degraded conditions associated with the pump. The inspectors applied IMC 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At Power,” to this finding. The inspectors utilized Exhibit 2, Section A, “Mitigating Systems,” to screen the finding. The finding was determined to have very low safety significance because the inspectors answered ‘No’ to all four questions. The inspectors determined that the contributing cause that provided the most insight into the performance deficiency was associated with the cross cutting area of Human Performance, having work practices components, and involving aspects associated with using human error prevention techniques during performance of work activities [H.4(a)].

Inspection Report# : [2013005](#) (*pdf*)

**Significance:**  Nov 22, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Evaluate the Effects of the HPCI Steam Isolation Outboard Valve Closure Time Increase**

Green. The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the failure to evaluate the effects of increasing the high pressure coolant injection (HPCI) steam isolation outboard valve allowed closure time from 40 to 50 seconds in several documents. Specifically, the licensee failed to evaluate the effect of the increased allowed closure time for MO-2035 in several analyses. The licensee entered this issue into their Corrective Action Program, where the licensee is reviewing the impact of increasing the allowed closure time for MO 2035 on high energy line break (HELB) calculations and will revise the applicable analyses and documentation as required. A preliminary analysis using actual stroke and delay times for MO-2035 verified the 55 seconds used in the analysis was still bounding.

The performance deficiency was determined to be more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of design control and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding screened as very low safety significance (Green) because the finding was a design deficiency that did not result in a loss of operability or functionality. This finding has a cross-cutting aspect in the area of Human Performance, Resources because the licensee did not have complete, accurate, and up-to-date design documentation. Specifically, the licensee failed to revise all affected design documentation when the HPCI steam isolation outboard valve allowed closure time was increased from 40 seconds to 50 seconds.

Inspection Report# : [2013007](#) (*pdf*)

**Significance:**  Nov 22, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Ensure Required Design Basis Analysis was Maintained**

The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to verify that required analysis was in-place prior to superseding CA 00 082. Specifically,

the licensee failed to recognize that the superseded calculation contained required analysis that was not verified in other current calculations. The licensee entered this issue into their Corrective Action Program where the licensee performed a preliminary analysis that verified the HPCI HELB was still bounded by the main steam line break analysis and to ensure that the analysis will be restored consistent with the provisions of CA 00 082 and License Amendment 117.

The performance deficiency was determined to be more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of design control and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was a design deficiency that did not result in a loss of operability or functionality. This finding has a cross-cutting aspect in the area of Human Performance, Work Practices because the licensee did not use human error prevention techniques, such as self and peer checking, to ensure that work activities were performed safely. Specifically, the licensee failed to recognize that the superseded calculation contained required analysis that was not verified to be in other current calculations.

Inspection Report# : [2013007](#) (*pdf*)

**Significance:**  Nov 22, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Maintain Qualification of UV Relay 27 43A**

The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to maintain seismic qualification of safety-related undervoltage (UV) relay 27-43A, where the UV relay's coil was replaced without proper analysis and documentation. Specifically, the licensee did not ensure there was proper test analysis and documentation in-place that specified the requirements to allow replacement of the UV relay's coil to maintain its seismic qualification. The licensee entered this finding into their Corrective Action Program to address the cause that lead to this issue. The relay had previously been replaced with a qualified component prior to this inspection.

The performance deficiency was determined to be more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of design control and affected the cornerstone objective of ensuring the

availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding screened as very low safety significance (Green) because the finding was a design deficiency that did not result in a loss of operability or functionality. This finding has a cross-cutting aspect in the area of Human Performance, Decision-Making because the licensee did not make safety significant decisions using a systematic process, especially when faced with unexpected plant conditions, to ensure safety is maintained. Specifically, the licensee failed to recognize that to maintain seismic qualification, proper analysis and documentation must be in-place to identify those components that are authorized to be replaced without invalidating the seismic qualification analysis.

Inspection Report# : [2013007](#) (*pdf*)

**Significance:** G Nov 22, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**EDG Fuel Oil Supply System Design does Not Meet the Single Failure Criteria**

The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to ensure the emergency diesel generator (EDG) fuel oil system original design met the single failure criteria with respect to having two safety-related pumps that were physically separated and provided with independent piping and safety-related power source. The licensee entered this finding into their Corrective Action Program and implemented actions that included separating the fuel oil system into individual trains for each EDG, providing each pump with safety-related power, and tracking the final resolution of this issue to completion.

The performance deficiency was determined to be more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of design control and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding screened as very low safety significance (Green) based on a Detailed Risk-Evaluation performed by the Senior Reactor Analysts. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2013007](#) (*pdf*)

**Significance:** Y May 15, 2013

Identified By: NRC

Item Type: VIO Violation

**FAILURE TO MAINTAIN AN ADEQUATE FLOOD PLAN CONSISTENT WITH DESIGN REQUIREMENTS.**

The inspectors identified a Yellow finding with substantial safety significance and associated violation of Technical Specification 5.4.1 for the licensee's failure to maintain a flood plan to protect the site from external flooding events. Specifically, the site failed to maintain flood Procedure A.6, "Acts of Nature," such that it could support the timely implementation of flood protection activities within the 12 day timeframe credited in the design basis as stated in the updated safety analysis report (USAR.)

The inspectors determined that the licensee's failure to maintain an adequate flood plan consistent with the USAR was a performance deficiency, because it was the result of the failure to meet the requirements of TS 5.4.1.a, "Procedures;" the cause was reasonably within the licensee's ability to foresee and correct; and should have been prevented.

The inspectors screened the performance deficiency per Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," Appendix B, dated September 7, 2012, and determined that the issue was more than minor because it impacted the 'Protection

Against External Factors' attribute of the Mitigating Systems Cornerstone and affected the cornerstone's objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, if the necessary flood actions cannot be completed in the time required, much of the station's accident mitigation equipment could be negatively impacted by flood waters.

Therefore, a detailed risk evaluation was performed.

This risk evaluation was performed using IMC 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria," dated April 12, 2012. A Significance and Enforcement Review Panel (SERP) determined this finding to have substantial safety significance (Yellow).

The inspectors determined that the contributing cause that provided the most insight into the performance deficiency was associated with the cross-cutting area of Human Performance, having decision-making components, and involving aspects associated with using conservative assumptions in decision making, verifying the validity of the underlying assumptions, and identifying possible unintended consequences.

Inspection Report# : [2013008](#) (*pdf*)

Inspection Report# : [2013009](#) (*pdf*)

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## Barrier Integrity

**Significance:**  Sep 30, 2014

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **FAILURE TO FOLLOW REACTIVITY MANAGEMENT PROCEDURE.**

A finding of very low safety significance and a NCV of Technical Specification (TS) 5.4.1, "Procedures," was self-revealed when the licensee failed to implement requirements specified in FP-OP-RM-01, "Reactivity Management Program." Specifically, the licensee failed to ensure that the licensed operators were aware of the consequences of the reactivity changes they were making, as required by FP-OP-RM-01. As a result, the licensed operators were unaware that their actions to increase recirculation flow would result in the plant exceeding the minimum critical power ratio (MCPR) operating limit. This issue was entered into the licensee's corrective action program (CAP) 1446848. Immediate corrective actions included restoration of the plant to within the MCPR operating limit, halting of power changes, disqualification of individuals directly involved, increased management oversight, a detailed review of the reactivity plan and procedures planned for use during the reactivity plan, and site-wide communication of the event. The site initiated a root cause evaluation (RCE), which was in progress at the end of the inspection period.

The inspectors determined that the failure to perform reactivity manipulations in accordance with reactivity management requirements was a performance deficiency requiring evaluation. The inspectors determined that the finding was more than minor in accordance with IMC 0612, Appendix B, because it adversely impacted the Barrier Integrity Cornerstone attributes of Configuration Control and Procedure Quality, and affected the cornerstone objective to provide reasonable assurance that physical design barriers, including fuel cladding, protect the public from radionuclide releases caused by accidents or events. The inspectors assessed the significance of this finding in accordance with IMC 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria" and determined this finding was of very low safety significance. The inspectors concluded that this finding was cross-cutting in the Human Performance, Documentation aspect because of the failure to ensure that the procedures being used to make the reactivity manipulations were complete, accurate, and up-to-date.



Inspection Report# : [2014004](#) (pdf)

**Significance:**  Mar 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**DRYWELL-TORUS VACUUM BREAKER INADEQUATE POST-MAINTENANCE AND RETURN-TO-SERVICE TEST.**

The inspectors identified a finding of very low safety significance and a non-cited violation of 10 CFR 50, Appendix B, Criterion XI, "Test Control," for the licensee's failure to assure that all testing required to demonstrate that SSCs will perform satisfactorily in service are identified and performed in accordance with written test procedures, which incorporate the requirements and acceptance limits contained in applicable design documents. Specifically, on May 22, 2013, the licensee failed to ensure that post-maintenance and return-to-service testing was performed on all eight safety-related drywell-torus vacuum breakers after refueling outage maintenance, to ensure that surveillance requirements for the valves' opening setpoints were met prior to the valve being returned to service and prior to entry into MODE 2. The licensee entered this issue into their CAP, and additional corrective actions were in development at the time of this report.

The inspectors determined that the licensee's failure to perform required PMTs for vacuum breakers prior to their return-to-service and making a mode change was a performance deficiency requiring evaluation. The inspectors determined that the finding was more than minor in accordance with IMC 0612, Appendix B, because it adversely impacted the Barrier Integrity Cornerstone attribute of SSC and Barrier Performance, and affected the cornerstone objective to provide reasonable assurance that physical design barriers, including containment, protect the public from radionuclide releases caused by accidents or events. The inspectors assessed the significance of this finding in accordance with IMC 0609 and determined this finding was of very low safety significance. The inspectors concluded that this finding was cross-cutting in the Human Performance, Work Management area, because of the failure to implement a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority, and to ensure that the work process includes the identification and management of risk commensurate to the work and the need for coordination with different groups or job activities [H.5].

Inspection Report# : [2014002](#) (pdf)

**Significance:**  Mar 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO FOLLOW PROCEDURE FOR DRYWELL-TORUS VACUUM BREAKER OPERABILITY DETERMINATION.**

The inspectors identified a finding of very low safety significance and a non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to ensure that activities affecting quality be prescribed by documented procedures of a type appropriate to the circumstances, and be accomplished in accordance with these procedures. Specifically, the licensee failed to accomplish activities affecting quality in accordance with Fleet Procedure FP-OP-OL-01, in that, on February 28, 2014, and March 5, 2014, the site failed to ensure that the operability determination for all eight safety-related drywell-torus vacuum breakers was sufficient to address the capability of the SSCs to perform their specified safety function. Following NRC questions, the site revised the operability determination to include newly discovered information of an instance where the equipment in question had been observed opening at the required setpoint during a plant evolution and, subsequently changing the operability evaluation final conclusion from "operable but nonconforming" to "operable." This issue was entered into their corrective action program (CAP), and additional corrective actions were in development at the time of this report. The inspectors determined that the failure to properly justify vacuum breaker operability in accordance with the fleet operability determination process was a performance deficiency requiring evaluation. The inspectors determined the

issue was more than minor because, if left uncorrected, the failure to perform a thorough operability evaluation for conditions where a required post-maintenance testing (PMT) was not performed for all eight drywell-torus vacuum breakers could lead to a more significant safety concern. The inspectors assessed the significance of this finding in accordance with IMC 0609 under the Barrier Integrity Cornerstone, and determined the finding was of very low safety significance. The inspectors concluded that this finding was cross-cutting in the Human Performance, Conservative Bias area, because of the licensee's failure to use decision-making practices that emphasize prudent choices over those that are simply allowable, and a failure to ensure that proposed actions are determined to be safe in order to proceed, rather than unsafe in order to stop [H.14].  
Inspection Report# : [2014002](#) (*pdf*)

**Significance:**  Mar 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**INADEQUATE DRYWELL-TORUS MONTHLY VACUUM BREAKER TEST PROCEDURE DUE TO PROCEDURALIZED UNACCEPTABLE PRECONDITIONING.**

The inspectors identified a finding of very low safety significance and a non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," on February 14, 2014, for the licensee's failure to ensure that activities affecting quality be prescribed by documented procedures of a type appropriate to the circumstances. Specifically, the site changed Procedure 0143, "Drywell-Torus Monthly Vacuum Breaker Check," to include allowances for multiple cyclings on the safety-related drywell-torus vacuum breaker valves to ensure they met their surveillance requirements to close, which constituted unacceptable preconditioning. The licensee entered this issue into their CAP, and corrective actions were still in development at this time of this report.

The inspectors determined that the licensee's failure to ensure the vacuum breaker monthly testing surveillance procedure was appropriate to the circumstances was a performance deficiency requiring evaluation. The inspectors screened the performance deficiency per IMC 0612, "Power Reactor Inspection Reports," Appendix B, and determined that the issue was more than minor because it adversely impacted the Barrier Integrity Cornerstone attribute of Procedure Quality, and affected the cornerstone objective to provide reasonable assurance that physical design barriers, including containment, protect the public from radionuclide releases caused by accidents or events. In addition, if left uncorrected, the proceduralized unacceptable preconditioning has the potential to lead to a more significant safety concern. The inspectors assessed the significance of this finding in accordance with IMC 0609 and determined this finding was of very low safety significance. The inspectors concluded that this finding was cross-cutting in the Human Performance, Conservative Bias area, because of the licensee's failure to use decision-making practices that emphasize prudent choices over those that are simply allowable, and a failure to ensure that proposed actions are determined to be safe in order to proceed, rather than unsafe in order to stop [H.14].

Inspection Report# : [2014002](#) (*pdf*)

**Significance:**  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO FOLLOW PROCEDURE FOR AO 13022 FURMANITE INJECTION.**

The inspectors identified a finding of very low safety significance and a NCV of Technical Specification (TS) 5.4.1 due to the failure to perform safety related maintenance in accordance with documented instructions. Specifically, the improper control of safety related maintenance on reactor core isolation cooling (RCIC) injection check valve AO 13 22 resulted in the injection of seven sticks of a leak sealing compound (e.g. Furmanite) instead of the maximum four called out in Work Order (WO) 486966. This issue was entered into the licensee's corrective action program (CAP 1402240). Corrective actions included a site stand down; down grade of the Furmanite technician's leak repair certification, pending investigation and retraining; revise procedures requiring each Furmanite injection be observed by maintenance supervision; and development of a fleet procedure/process for oversight of supplemental personnel.

The inspectors determined that the failure to perform safety related maintenance in accordance with documented instructions was a performance deficiency requiring evaluation. The inspectors determined the issue was more than minor because, if left uncorrected, the failure to follow leak sealant work instructions could lead to more significant safety concerns. The inspectors assessed the significance of this finding in accordance with Inspection Manual Chapter (IMC) 0609 and determined that it was of very low safety significance. The inspectors concluded that this finding was cross cutting in the Human Performance, work practices area because of the failure to ensure supervisory and management oversight of work activities [H.4(c)].

Inspection Report# : [2013005](#) (*pdf*)

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## Emergency Preparedness

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## Occupational Radiation Safety

**Significance:**  Mar 31, 2014

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **UNCONTROLLED HIGH RADIATION AREA FOLLOWING SHUT-DOWN COOLING RE-ALIGNMENT.**

A finding of very low safety significance and an associated non-cited violation of Technical Specification (TS) 5.7.1 was self-revealed following a worker's unexpected electronic dosimeter alarm, which resulted in the identification of an unbarricaded and unposted high radiation area. The inspectors determined a performance deficiency occurred when the licensee failed to perform radiological surveys following the implementation of noble metals chemistry which changed plant radiological conditions, and prior to authorizing entry into the 924' torus area. Specifically, on January 19, 2014, a fire watch entered this area when posted as a radiation area and received a dose rate alarm. Follow-up radiological surveys identified a high radiation area of 120 mrem/hr at 30 cm from the residual heat removal piping. This issue was entered into the licensee's corrective action program as CAP 01415285. The licensee immediately barricaded and posted the area as a high radiation area. Additionally, the licensee is performing a review of radiation protection fundamentals as the result of this event.

The finding was more than minor because it impacted the program and process attribute of the Occupational Radiation Safety Cornerstone and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that, the worker's entry into an unsurveyed high radiation area placed the worker at increased risk for unnecessary radiation exposure. Additionally, the inspectors reviewed the guidance in IMC 0612, Appendix E, "Examples of Minor Issues," and identified Example 6(h) as similar to the performance deficiency. The finding was assessed using IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," and was determined to be of very low safety significance because the problem was not an as-low-as-reasonably-achievable planning issue; there were no overexposures nor substantial potential for overexposures given the highest dose rate present in the room and the scope of work; and the licensee's ability to assess dose was not compromised. The inspectors concluded that the cause of this event involved a cross-cutting component in the Problem Identification and Resolution, Operating Experience area, because the licensee failed to implement known industry concerns regarding changing radiological conditions as the result of implementation of noble metals chemistry (P.5).

Inspection Report# : [2014002](#) (*pdf*)

**Significance:** G Dec 31, 2013

Identified By: Self-Revealing

Item Type: FIN Finding

**FAILURE TO MAINTAIN RADIATION EXPOSURE ALARA DURING RFO 26.**

A finding of very low safety significance was self revealed due to the licensee having unplanned and unintended occupational collective radiation dose because of deficiencies in the licensee's radiological work planning and work control program. Specifically, the licensee failed to properly incorporate as low as reasonably achievable (ALARA) strategies and insights while planning and executing two work activities during the refueling outage (RFO) 26. The first was the inservice inspection (ISI) examinations performed in the drywell. The initial dose estimate for this activity was 7.500 person rem. However, 13.173 actual person rem of dose was received. The second activity was associated with drywell snubber inspection activities within the drywell. The initial estimate for this activity was 3.600 person rem. However, 7.243 actual person rem of dose was received. These results were caused by poor radiological planning and work execution of these tasks. The licensee entered this issue into their CAP as Action Reports 1404210 and 1404244.

The finding was more than minor because it was associated with the program and process attribute of the Occupation Radiation Safety Cornerstone. Additionally, this issue affected the cornerstone objective of ensuring the adequate protection of the workers' health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Additionally, the finding is very similar to Inspection Manual Chapter (IMC) 0612, Appendix E, "Examples of Minor Issues," Example 6.i. This example provides guidance that an issue is not minor if the actual collective dose exceeded 5 person rem and exceeded the planned, intended dose by more than 50 percent. The inspectors determined that this finding was of very low safety significance because Monticello Nuclear Generating Plant's current 3 year rolling average collective is 110.633 person rem (2010 2012). This is less than the 240 person rem/unit referenced within IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process." This finding had a cross cutting aspect in the area of Human Performance, related to the cross cutting aspect of work control, in that the outage plan did not adequately incorporate action to address the impact of work on different job activities [H.3(b)].

Inspection Report# : [2013005](#) (*pdf*)

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## Public Radiation Safety

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## Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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## Miscellaneous

Last modified : November 26, 2014