



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, IL 60532-4352

November 5, 2012

Mr. Mark Schimmel  
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 05000263/2012004**

Dear Mr. Schimmel:

On September 30, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Monticello Nuclear Generating Plant. The enclosed report documents the inspection findings, which were discussed on October 10, 2012, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

One NRC-identified finding and one self-revealed finding of very low safety significance were identified during this inspection.

One of these findings was determined to involve a violation of NRC requirements. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest this NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, - Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Monticello Nuclear Generating Plant. In addition, if you disagree with a cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at the Monticello Nuclear Generating Plant.

M. Schimmel

-2-

In accordance with 10 CFR 2.390 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 Public Document Room or from the Publicly Available Records System (PARS) component of NRC's Agencywide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Kenneth Riemer, Branch Chief  
Branch 2  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000263/2012004;  
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 0000263/2012004

Licensee: Northern States Power Company, Minnesota

Facility: Monticello Nuclear Generating Plant

Location: Monticello, MN

Dates: July 1 through September 30, 2012

Inspectors: S. Thomas, Senior Resident Inspector  
P. Voss, Resident Inspector  
K. Stoedter, Prairie Island Senior Resident Inspector  
M. Phalen, Senior Health Physicist  
S. Bell, Health Physicist

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

Enclosure

## TABLE OF CONTENTS

SUMMARY OF FINDINGS .....	1
REPORT DETAILS .....	3
SUMMARY OF PLANT STATUS .....	3
1. REACTOR SAFETY .....	3
1R01 Adverse Weather Protection (71111.01) .....	3
1R04 Equipment Alignment (71111.04) .....	4
1R05 Fire Protection (71111.05) .....	5
1R06 Flooding (71111.06).....	5
1R11 Licensed Operator Requalification Program (71111.11).....	7
1R12 Maintenance Effectiveness (71111.12) .....	8
1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13).....	9
1R15 Operability Determinations and Functional Assessments (71111.15).....	11
1R18 Plant Modifications (71111.18) .....	12
1R19 Post-Maintenance Testing (71111.19).....	13
1R20 Outage Activities (71111.20) .....	13
1R22 Surveillance Testing (71111.22).....	15
1EP6 Drill Evaluation (71114.06) .....	16
2. RADIATION SAFETY .....	16
2RS2 Occupational As-Low-As-Is-Reasonably-Achievable Planning and Controls (71124.02) .....	16
4. OTHER ACTIVITIES .....	18
4OA1 Performance Indicator Verification (71151) .....	18
4OA2 Identification and Resolution of Problems (71152) .....	21
4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153).....	23
4OA5 Other Activities.....	26
4OA6 Management Meetings .....	28
4OA7 Licensee-Identified Violations .....	28
SUPPLEMENTAL INFORMATION .....	1
KEY POINTS OF CONTACT .....	1
LIST OF ITEMS OPENED, CLOSED AND DISCUSSED .....	2
LIST OF DOCUMENTS REVIEWED .....	3
LIST OF ACRONYMS USED.....	12

## SUMMARY OF FINDINGS

IR 05000263/2012004; 07/01/2012 – 09/30/2012; Monticello Nuclear Generating Plant. Maintenance Risk Assessment and Emergent Work Control; Follow-Up of Events and Notices of Enforcement Discretion.

This report covers a three-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. One Green finding was identified by the inspectors and one Green finding was self-revealed. One finding was considered a non-cited violation (NCV) of NRC regulations. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### A. NRC-Identified and Self-Revealed Findings

#### **Cornerstone: Mitigating Systems**

- Green. The inspectors identified a finding of very low safety significance and an associated non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when the licensee failed to properly implement work instructions during the modification of reactor building doors which have both secondary containment and high energy line break (HELB) mitigation functions. Specifically, the licensee failed to ensure that the work documents used to perform the modification and the level of supervision of the performance of the work tasks were adequate to ensure that the HELB function of the doors remained available, as required by existing plant conditions, during the implementation of the modification. The licensee entered this issue into their corrective action program (CAP), and corrective actions for this issue included performing a root cause evaluation, resetting their site event clock, and revising the work documents associated with door 45 and door 46 modifications to include multiple barriers to ensure that the doors remain capable of performing their required functions during a HELB event. 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 the licensee ensuring supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported [H.4(c)].

The inspectors determined that the licensee's failure to adequately control the configuration of door 45 during the modification work was a performance deficiency, because it was the result of the failure to meet a requirement; 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 it impacted the equipment performance attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors applied IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," to this finding.

The inspectors evaluated the issue under the Mitigating Systems Cornerstone, and utilized Exhibit 2, "Mitigating Systems Screening Questions," to screen the finding. The inspectors answered "No" to all the questions in Section A, "Mitigating Structures, Systems, and Components (SSCs) and Functionality," and Section B, "External Event Mitigating Systems," and determined the finding to be of very low safety significance. (Section 1R13)

### **Cornerstone: Initiating Events**

- Green. A finding of very low safety significance was self-revealed on September 25, 2012, when a reactor scram occurred during planned testing of the 2R to Bus 12 local (switchgear cubicle A201) and remote (control room panel C-08) ammeter switches. As a result of the site's failure to effectively plan the work activity, the performance of the testing resulted in the lockout of Bus 12, and loss of 12 reactor feedwater pump and the 12 recirculation pump. During the ensuing plant transient, a main turbine trip occurred, followed immediately by a reactor scram, when reactor water level reached the Reactor Water Level Hi Hi setpoint (+48"). The licensee entered this issue into their CAP and is performing root cause evaluations to further evaluate the post-scram reactor water level control and the ineffective work planning associated with development of the work order used to conduct the testing. The inspectors determined that the most significant causal factor associated with the performance deficiency was associated with the cross-cutting area of Human Performance, having resources components, and involving aspects associated with procedures and work packages are available and adequate to assure nuclear safety [H.2(c)].

The inspectors determined that the licensee's failure to develop and implement work documents which adequately tested the 2R to Bus 12 ammeter switches was a performance deficiency because it was the result of the failure to meet a requirement or standard; 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 IMC 0612, "Power Reactor Inspection Reports," Appendix B, and determined that the issue was more than minor because it impacted the procedural quality attribute of the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors applied IMC 0609, Appendix A, "The SDP for Findings At-Power," to this finding. The inspectors evaluated the issue under the Initiating Events Cornerstone, and utilized Exhibit 1, "Initiating Events Screening Questions," to screen the finding. Under Section B, "Transient Initiators," the inspectors answered "No" to the question "Did the Finding cause a reactor trip AND the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition?" and determined the finding to be of very low safety significance. (Section 4OA3.3)

### **B. Licensee-Identified Violations**

No violations were identified.

## REPORT DETAILS

### Summary of Plant Status

During this inspection period, Monticello experienced two forced outages:

- August 14 to August 18, 2012, plant shutdown to repair a leaking flange located on the residual heat removal shutdown cooling piping, and;
- September 25 to September 28, 2012, automatic reactor scram as a result of the plant transient subsequent to a lockout of electrical Bus 12.

With the exception of these two forced outages and other minor downpowers to support routine testing activities and rod pattern adjustments, the plant operated at or near full power.

### **1. REACTOR SAFETY**

#### **Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

#### 1R01 Adverse Weather Protection (71111.01)

##### .1 Summer Readiness of Offsite and Alternate AC Power Systems

##### a. Inspection Scope

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

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

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

- The actions to be taken when notified by the TSO that the post-trip voltage of the offsite power system at the plant would not be acceptable to assure the continued operation of the safety-related loads without transferring to the onsite power supply;
- The compensatory actions identified to be performed if it would not be possible to predict the post-trip voltage at the plant for the current grid conditions;

- A re-assessment of plant risk based on maintenance activities which could affect grid reliability, or the ability of the transmission system to provide offsite power; and
- The communications between the plant and the TSO when changes at the plant could impact the transmission system, or when the capability of the transmission system to provide adequate offsite power was challenged.

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

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

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

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

- 'A' residual heat removal (RHR) during 'B' RHR work window;
- 11 emergency diesel generator (EDG); and
- 11 reactor feedwater pump.

The inspectors selected these systems based on their risk significance relative to the Reactor Safety Cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, Updated Safety Analysis Report (USAR), Technical Specification (TS) requirements, outstanding work orders (WOs), condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

These activities constituted three 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 08; cable spreading room;
- Fire Zone 3-B; standby liquid control area;
- Fire Zone 1-A; 12 RHR and core spray pump room;
- Fire Zone 7-B; 250V Division I battery room; and
- Fire Zone 15-B; 11 diesel generator room and day tank rooms.

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.

These activities constituted five quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings were identified.

1R06 Flooding (71111.06)

.1 Internal Flooding

a. Inspection Scope

The inspectors reviewed selected risk important plant design features and licensee procedures intended to protect the plant and its safety-related equipment from internal

flooding events. The inspectors reviewed flood analyses and design documents, including the USAR, engineering calculations, and abnormal operating procedures to identify licensee commitments. The specific documents reviewed are listed in the Attachment to this report. In addition, the inspectors reviewed licensee drawings to identify areas and equipment that may be affected by internal flooding caused by the failure or misalignment of nearby sources of water, such as the fire suppression or the circulating water systems. The inspectors also reviewed the licensee's corrective action documents with respect to past flood-related items identified in the CAP to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the following plant area to assess the adequacy of watertight doors and verify drains and sumps were clear of debris and were operable, and that the licensee complied with its commitments:

- intake structure.

This inspection constituted one internal flooding sample as defined in IP 71111.06-05.

b. Findings

No findings were identified.

.2 Underground Vaults

a. Inspection Scope

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

- manhole MH 101—discharge structure and cooling tower power and control;
- manhole NMH 308—1AR feeder, substation 'A' aux feeder;
- manhole NMH 313—2R feeder cable; and
- manhole NMH 344—2R feeder cable new route.

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

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

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

a. Inspection Scope

On August 6, 2012, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification training to verify that operator performance was adequate; evaluators were identifying and documenting crew performance problems; and 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.

b. Findings

No findings were identified.

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

a. Inspection Scope

On August 11, 2012, the inspectors observed a plant shutdown from 10 percent power. This was an activity that required heightened awareness or was related to increased risk. The inspectors evaluated the following areas:

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

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.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations (71111.12Q)

a. Inspection Scope

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

- high pressure coolant injection system; and
- 4kV system.

The inspectors reviewed events such as where ineffective equipment maintenance had resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the Maintenance Rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and components (SSCs)/functions classified as (a)(2), or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two quarterly maintenance effectiveness samples as defined in IP 71111.12-05.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

.1 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- reactivity adjustment for alternate control rod drive friction testing method;
- unexpected 2R transformer trouble associated with extended high ambient outside temperatures;
- 11 recirculation motor generator set scoop tube locked;
- yellow risk activities associated with RHR flange repair;
- blocking of high energy line break (HELB)/secondary containment door during maintenance; and
- inadequate sampling procedure for the fuel oil receiving tank.

These activities were selected based on their potential risk significance relative to the Reactor Safety Cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed TS requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Specific documents reviewed during this inspection are listed in the Attachment to this report.

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

b. Findings

Introduction

The inspectors identified a finding of very low safety significance and non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when the licensee failed to properly implement work instructions during the modification of reactor building doors which have both secondary containment and HELB mitigation functions. Specifically, the licensee failed to ensure that the work documents used to perform the modification and the level of supervision of the performance of the work tasks were adequate to ensure that the HELB function of the doors remained available, as required by existing plant conditions, during the implementation of the modification.

Description

On June 25, 2012, the inspectors were observing ongoing work activities associated with the reactor building railway doors 45 and 46. Each door is actually a set of two doors,

and each set has both a secondary containment function and a HELB function. During a HELB, the doors act as a relief path for the reactor building and the configuration of the doors must be maintained so that at least one door of each set (one side of door 45 and one side of door 46) will open at a designated reactor building pressure. During their observations, the inspectors informed the supervisor in charge of the work on the doors and the shift manager that they had concerns associated with how the positioning of the large scissor lift used to facilitate the work was being controlled as to prevent blocking both sides of door 46. As a result of the inspectors' question, the work was stopped. Further investigation revealed that the documentation for the WO task being performed on door 46 contained no precautions with the door's HELB function or the necessity to maintain the ability of at least one of doors to remain unblocked. Corrective actions taken by the licensee included strengthening the work documents and briefing the workers regarding the safety functions associated with doors 45 and 46, prior to recommencing the work.

On July 5, 2012, during a routine plant tour, the inspectors observed a scissor lift (approximately 4600 pounds) parked and unattended by the lift operator, in a position that would have prevented both sides of door 45 from opening fully, approximately twelve inches in front of the doors. During the time that the inspectors were questioning the work supervisor regarding his knowledge of the work document's requirements associated with the positioning of the scissor lift, workers returned to the job site and moved the lift to a location that facilitated the continuation of their work. After the inspectors validated that the work documents gave clear instructions to not block both doors and noticing that even after the workers had repositioned the lift, it was still blocking both doors, they further engaged the work supervisor until he directed the workers to move the lift to a location where it did not block both doors. After verifying that door 45 was functional, the inspectors notified the shift manager of the configuration control issue and the shift manager stopped all work associated with door 45.

The licensee entered the issue into their corrective action program (CAP 01342851 and CAP 01343928). Specific actions taken by the licensee included performing a root cause evaluation; resetting their site event clock; and revising the work documents associated with door 45 and door 46 modifications to include multiple barriers to ensure that the doors remain capable of performing their required functions during a HELB event. Additionally, the licensee performed EC-20636, "Effect of Scissor Lift in Blocking Railroad Door 45 from Opening for HELB Considerations," to evaluate the impact of door 45 not fully opening during a HELB. While the evaluation determined that the increased temperatures and pressure that resulted from the reactor building HELB events that were analyzed challenged the margins of some reactor building block walls and motor operated valves, the licensee concluded that there was not loss of safety function for the postulated HELB events concurrent with the scissor lift preventing door 45 from fully opening.

### Analysis

The inspectors determined that the licensee's failure to adequately control the configuration of door 45 during the modification work was a performance deficiency, because it was the result of the failure to meet a requirement or a standard; the cause was reasonably within the licensee's ability to foresee and correct; and should have been prevented. 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 the licensee ensures supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported [H.4(c)].

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 impacted the equipment performance attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors applied IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," to this finding. The inspectors evaluated the issue under the Mitigating Systems Cornerstone, and utilized Exhibit 2, "Mitigating Systems Screening Questions," to screen the finding. The inspectors answered "No" to all the questions in Section A, "Mitigating SSCs and Functionality," and Section B, "External Event Mitigating Systems," and determined the finding to be of very low safety significance (Green).

### Enforcement

Title 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented procedures, of a type appropriate to the circumstances, and shall be accomplished in accordance with these procedures. Contrary to this requirement, on July 5, 2012, the licensee failed to ensure that the work documents used to perform the modification on door 45 and the level of supervision of the performance of the work tasks were adequate to ensure that the HELB function of the doors remained available, as required by existing plant conditions, during the implementation of the modification. Specifically, the licensee failed to ensure that all applicable work tasks contained in WO 0439497, "Replace Hinges, Seals, and Operators for Doors 45 and 46," contained instructions that ensured the appropriate configuration of doors 45 and 46 was maintained during their modification, to ensure that their HELB relief function remained available. Additionally, the work supervisor failed to maintain the required configuration on door 45 even though he stated that he was aware of the requirement not to block both sides of door 45. Because the finding was of very low safety significance and was entered into the licensee's corrective action program (CAP 01342851 and CAP 01343928), this issue is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. **(NCV 05000263/2012004-01; Failure to Control the Configuration of Door 45 during Modification)**

## 1R15 Operability Determinations and Functional Assessments (71111.15)

### .1 Operability Evaluations

#### a. Inspection Scope

The inspectors reviewed the following issues:

- potentially deteriorated components in the 11 EDG excitation circuitry;
- core spray discharge pressure acceptance value may be too low; and
- operability of door 45 following the installation of several non-safety components/OPR 1352358-01.

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 the 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 operability evaluations constituted three 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:

- EC 20076; removal of the 1AR transformer essential bus auto transfer.

The inspectors reviewed the configuration changes and associated 10 CFR 50.59 safety evaluation screening against the design basis, the USAR, and the TS, as applicable, to verify that the modification did not affect the operability or availability of the affected system. The inspectors, as applicable, observed ongoing and completed work activities to ensure that the modifications were installed as directed and consistent with the design control documents; the modifications operated as expected; post-modification testing adequately demonstrated continued system operability, availability, and reliability; and that operation of the modifications did not impact the operability of any interfacing systems. As applicable, the inspectors verified that relevant procedure, design, and licensing documents were properly updated. Lastly, the inspectors discussed the plant modification with operations, engineering, and training personnel to ensure that the individuals were aware of how the operation with the plant modification in place could impact overall plant performance. Documents reviewed in the course of this inspection are listed in the Attachment to this report.

This inspection constituted one temporary modification sample as defined in IP 71111.18-05.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

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

- emergency service water check valve/emergency filtration train instrument work;
- residual heat removal service water (RHRSW) 12 pump rebuild; and
- RHR flange repair hydrostatic pressure test.

These activities were selected based upon the SSCs 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 PM 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 three PM testing samples as defined in IP 71111.19-05.

b. Findings

No findings were identified.

1R20 Outage Activities (71111.20)

.1 Forced Outage to Repair Leaking Flange on Shutdown Cooling Piping

a. Inspection Scope

On August 10, 2012, the licensee identified a brief spike in the indicated unidentified reactor coolant system (RCS) leakage rate (8.4 gallons per minute (gpm)). Subsequent to the spike, the indicated unidentified leakage rate tapered off to an elevated level of approximately 0.55 gpm. On August 11, 2012, the licensee reduced power to approximately 10 percent power to facilitate a drywell entry to investigate the cause of the elevated unidentified leakage. During the drywell entry, the licensee identified an active leak originating from a 4 inch blank flange located on the RHR shutdown cooling piping. On August 14, 2012, the licensee decided to shutdown the reactor and implement repairs on the flange. The inspectors evaluated outage activities for the

unscheduled outage that began on August 14, 2012, and continued through August 18, 2012. The inspectors reviewed activities to ensure that the licensee considered risk in developing, planning, and implementing the outage schedule. The inspectors observed or reviewed the reactor shutdown and cooldown; outage equipment configuration and risk management; electrical lineups; selected clearances; control and monitoring of decay heat removal; control of containment activities; personnel fatigue management; startup and heatup activities; and identification and resolution of problems associated with the outage. Documents reviewed in the course of this inspection are listed in the Attachment.

This inspection constituted one other outage sample as defined in IP 71111.20-05.

b. Findings

No findings were identified.

.2 Reactor Scram Subsequent to a Bus 12 Lockout Initiated During 2R to Bus 12 Ammeter Switch Testing

a. Inspection Scope

On September 25, 2012, during maintenance on 4160V bus 12 ammeter, a bus 12 lockout occurred. As a result of the bus 12 lockout, 12 reactor feed pump and 12 reactor recirculation pump lost power. The subsequent plant transient resulted in the reactor water level initially lowering, then increasing to +48 inches (reactor water level hi setpoint). The main turbine and 11 reactor feed pump tripped as designed, and a reactor scram occurred. Minimum water level reached was -26 inches. Reactor low level SCRAM signal and Group 2 primary containment isolation occurred at +9 inches as designed and no safety relief valves lifted during this transient. High pressure coolant injection (HPCI) and reactor core isolation cooling (RCIC) did not receive an initiation signal due to not reaching their setpoints and there were no emergency core cooling systems initiations. The operators stabilized the plant in Mode 3 while the licensee investigated the cause of the scram, and the plant performance subsequent to the scram.

The inspectors evaluated outage activities for the unscheduled outage that began when the reactor automatically scrammed on September 25, 2012, and continued through September 28, 2012. The inspectors reviewed activities to ensure that the licensee considered risk in developing, planning, and implementing the outage schedule. The inspectors observed or reviewed the reactor shutdown and cooldown; outage equipment configuration and risk management; electrical lineups; selected clearances; control and monitoring of decay heat removal; control of containment activities; personnel fatigue management; startup and heatup activities; and identification and resolution of problems associated with the outage.

This inspection constituted one other outage sample as defined in IP 71111.20-05.

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:

- 0011-A; turbine control valve fast closure scram test and calibration (>30 percent of rated) [routine];
- 0255-03-IA-1-2; core spray loop 'B' quarterly pump and valve tests [inservice test (IST)];
- 0552-01; reactor recirculation loops differential pressure , low pressure coolant injection select interlock channel functional test [routine];
- 0255-05-III-3A; comprehensive 13 RHRSW pump and valve tests [routine].

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

- did preconditioning occur;
- were the effects of the testing adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- were acceptance criteria clearly stated, demonstrated operational readiness, and consistent with the system design basis;
- plant equipment calibration was correct, accurate, and properly documented;
- as-left setpoints were within required ranges; and the calibration frequency was in accordance with TSs, the USAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;
- where applicable for IST activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers (ASME) code, and reference values were consistent with the system design basis;
- where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable;
- where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure;
- where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished;

- prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;
- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted three routine surveillance testing samples and one IST sample as defined in IP 71111.22, Sections -02 and -05.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on August 22, 2012, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the Emergency Operations Facility (EOF) and the simulator 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 CAP. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report. This emergency preparedness drill inspection constituted one sample as defined in IP 71114.06-05.

b. Findings

No findings were identified.

**2. RADIATION SAFETY**

**Cornerstones: Occupational and Public Radiation Safety**

2RS2 Occupational As-Low-As-Is-Reasonably-Achievable Planning and Controls (71124.02)

This inspection constituted a partial sample as defined in IP 71124.02-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed pertinent information regarding plant collective exposure history, current exposure trends, and ongoing or planned activities in order to assess current performance and exposure challenges. The inspectors reviewed the plant's three-year rolling average collective exposure.

The inspectors reviewed the site-specific trends in collective exposures (using NUREG-0713, "Occupational Radiation Exposure at Commercial Nuclear Power Reactors and Other Facilities," and plant historical data) and source term (average contact dose rate with reactor coolant piping) measurements (using Electric Power Research Institute TR-108737, "BWR Iron Control Monitoring Interim Report," issued December 1998, and/or plant historical data, when available).

The inspectors reviewed site-specific procedures associated with maintaining occupational exposures as-low-as-is-reasonably-achievable (ALARA), which included a review of processes used to estimate and track exposures from specific work activities.

b. Findings

No findings were identified.

.2 Radiological Work Planning (02.02)

a. Inspection Scope

The inspectors reviewed the ALARA work activity evaluations, exposure estimates, and exposure mitigation requirements. The inspectors determined whether the licensee reasonably grouped the radiological work into work activities, based on historical precedence, industry norms, and/or special circumstances.

The inspectors assessed whether the licensee's planning identified appropriate dose mitigation features; considered alternate mitigation features; and defined reasonable dose goals. The inspectors evaluated whether the licensee's ALARA assessment had taken into account decreased worker efficiency from use of respiratory protective devices and/or heat stress mitigation equipment (e.g., ice vests). The inspectors determined whether the licensee's work planning considered the use of remote technologies (e.g., teledosimetry, remote visual monitoring, and robotics) as a means to reduce dose and the use of dose reduction insights from industry operating experience and plant-specific lessons learned. The inspectors assessed the integration of ALARA requirements into work procedure and radiation work permit documents.

b. Findings

No findings were identified.

.3 Verification of Dose Estimates and Exposure Tracking Systems (02.03)

a. Inspection Scope

The inspectors reviewed the assumptions and basis (including dose rate and man-hour estimates) for the current annual collective exposure estimate for reasonable accuracy for select ALARA work packages. The inspectors reviewed applicable procedures to determine the methodology for estimating exposures from specific work activities and the intended dose outcome.

b. Findings

No findings were identified.

.4 Problem Identification and Resolution (02.06)

a. Inspection Scope

The inspectors evaluated whether problems associated with ALARA planning and controls were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee's corrective action program.

b. Findings

No findings were identified.

**4. OTHER ACTIVITIES**

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

4OA1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index - Emergency AC Power System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - Emergency AC Power System performance indicator (PI) for the period from the 3<sup>rd</sup> Quarter 2011 through the 2<sup>nd</sup> Quarter 2012. 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 6, dated October 2009, 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 of July 1, 2011, through June 30, 2012, to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one MSPI emergency AC power system sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index - High Pressure Injection Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - High Pressure Injection Systems PI for the period from the 3<sup>rd</sup> Quarter 2011 through the 2<sup>nd</sup> Quarter 2012. 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 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports and NRC Integrated Inspection Reports for the period of July 1, 2011, through June 30, 2012, to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one MSPI high pressure injection system sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index - Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Heat Removal System PI for the period from the 3<sup>rd</sup> Quarter 2011 through the 2<sup>nd</sup> Quarter 2012. 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 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, MSPI derivation reports, and NRC Integrated Inspection Reports for the period of July 1, 2011, through June 30, 2012, to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one MSPI heat removal system sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.4 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors sampled licensee submittals for the RCS Specific Activity PI for the period from the 3<sup>rd</sup> Quarter 2011 through the 2<sup>nd</sup> Quarter 2012. The inspectors used PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's RCS chemistry samples, technical specification requirements, issue reports, event reports, and NRC Integrated Inspection Reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a RCS sample. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one RCS specific activity sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.5 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Radiological Occurrences PI for the period from the 1<sup>st</sup> Quarter 2011 through the 2<sup>nd</sup> Quarter 2012. The inspectors used PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's assessment of the PI for occupational radiation safety to determine if indicator related data was adequately assessed and reported. To assess the adequacy of the licensee's PI data collection and analyses, the inspectors discussed with radiation protection staff, the scope and breadth of its data review and the results of those reviews. The inspectors independently reviewed electronic personal dosimetry dose rate and accumulated dose alarms and dose reports and the dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized occurrences. The inspectors also conducted walkdowns of numerous locked high and very high radiation area entrances to determine the adequacy of the controls in place for these areas. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors sampled licensee submittals for the Radiological Effluent TS (RETS)/Offsite Dose Calculation Manual (ODCM) Radiological Effluent Occurrences PI for the period from the 1<sup>st</sup> Quarter 2011 through the 2<sup>nd</sup> Quarter 2012. The inspectors used PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's issue report database and selected individual reports generated since this indicator was last reviewed to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose. The inspectors reviewed gaseous effluent summary data and the results of associated offsite dose calculations for selected dates to determine if indicator results were accurately reported. The inspectors also reviewed the licensee's methods for quantifying gaseous and liquid effluents and determining effluent dose. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one RETS/ODCM radiological effluent occurrences sample as defined in IP 71151 05.

b. Findings

No findings were identified.

40A2 Identification and Resolution of Problems (71152)

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

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

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's CAP at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Attributes reviewed included: identification of the problem was complete and accurate; timeliness was commensurate with the safety significance; evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes,

extent-of-condition reviews, and previous occurrences reviews were proper and adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included in the Attachment to this report.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.3 Annual Sample: Review of Operator Workarounds

a. Inspection Scope

The inspectors evaluated the licensee's implementation of their process used to identify, document, track, and resolve operational challenges. Inspection activities included, but were not limited to, a review of the cumulative effects of the operator workarounds (OWAs) on system availability and the potential for improper operation of the system, for potential impacts on multiple systems, and on the ability of operators to respond to plant transients or accidents.

The inspectors performed a review of the cumulative effects of OWAs. The documents listed in the Attachment to this report were reviewed to accomplish the objectives of the inspection procedure. The inspectors reviewed both current and historical operational challenge records to determine whether the licensee was identifying operator challenges at an appropriate threshold, had entered them into their CAP and proposed or implemented appropriate and timely corrective actions which addressed each issue. Reviews were conducted to determine if any operator challenge could increase the possibility of an Initiating Event, if the challenge was contrary to training, required a change from long-standing operational practices, or created the potential for

inappropriate compensatory actions. Additionally, all temporary modifications were reviewed to identify any potential effect on the functionality of Mitigating Systems, impaired access to equipment, or required equipment uses for which the equipment was not designed. Daily plant and equipment status logs, degraded instrument logs, and operator aids or tools being used to compensate for material deficiencies were also assessed to identify any potential sources of unidentified OWAs.

This review constituted one OWA annual inspection sample as defined in IP 71152-05.

b. Findings

No findings were identified.

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

.1 Loss of Power to Emergency Operations Facility, Independent Spent Fuel Storage Facility Installation (ISFSI), and Site Administrative Buildings

a. Inspection Scope

The inspectors reviewed the plant's response to a loss of power to some nonessential station auxiliary loads on July 16, 2012. Specifically, at 2:02 p.m., the station lost power to several onsite administrative buildings and plant areas. The power loss occurred as a result of several blown fuses in the Linn Street power substation, an offsite substation that feeds power to most of the town of Monticello, as well as some onsite licensee nonessential loads. The inspectors reported to the control room to observe the site's response to the power loss. The power loss affected the site administrative building (SAB), the plant engineering building (PEB), the ISFSI spent fuel storage area, and the Monticello Training Center (MTC). The EOF, an emergency response facility required by the site's emergency plan, was located in the MTC, and lost power as a result of the event. The inspectors observed the control room staff's reportability evaluation as a result of the loss of power to the EOF, and reviewed their conclusions. The Technical Support Center (TSC), another emergency response facility, was housed in the PEB, and was also affected by the power loss, but successfully transferred to its alternate power source and remained available throughout the event.

The inspectors observed the site's activation of an Event Response Team to respond to the power loss, in order to minimize the burden to the control room staff. The inspectors also observed licensee efforts to restore power to affected loads and monitor ISFSI status using alternate means, until the Linn Street substation was able to be restored at 3:50 p.m. During the event, the site maintained all of their required 1E offsite power sources operable and available, as these sources were unaffected by the Linn Street substation issues. Documents reviewed in this inspection are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

.2 Plant Downpower and Subsequent Shutdown Due to an Unexpected Spike in Unidentified Drywell Leakage

a. Inspection Scope

The inspectors reviewed the plant's response to a spike in unidentified drywell leakage on August 10, 2012. At midnight that morning, drywell unidentified leakage began trending up from a nominal 0.20 gpm. The 0.20 gpm leak rate was being monitored by the site and by the inspectors, and had mainly held steady during the previous several months. The licensee identified the leakage increase, took the actions required by their monitoring plan, and continued to monitor the slowly increasing trend. At around 4 a.m., the licensee observed a leakage spike to approximately 8.4 gpm. The leakage rate remained elevated, but immediately began trending down for the next nine minutes, at which point it leveled off at approximately 0.55 gpm. The inspectors reported to the control room, attended meetings where the licensee evaluated several courses of action, observed the licensee's planning process once a course of action was decided upon, and watched the licensee as they embarked on their chosen course of action.

The licensee opted to lower reactor power to 10 percent, to allow workers to make an at-power entry into the drywell in order to inspect for the leakage source. The inspectors monitored the downpower and the results of the drywell inspection. The site identified that the elevated leakage was coming from a four inch flange located on the RHR shutdown cooling suction line. As a result, the licensee decided to shut down the unit and repair the leaking flange in a hot shutdown condition. During the outage to repair the flange, the licensee determined that the leakage spike was due to a malfunctioning drain in a containment air cooler located close to the leaking flange. As a result, the licensee estimated that the direct leak rate from the flange did not exceed approximately 0.55 gpm. The inspectors monitored and observed the licensee's repair and restoration process, as well as startup of the reactor following the repairs. Documents reviewed in this inspection are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

.3 Reactor Scram Due to Bus 12 Lockout

a. Inspection Scope

The inspectors reviewed the plant's response to an event which occurred on September 25, 2012. During maintenance on 4160V bus 12 ammeter, a bus 12 lockout occurred. At the time of the lockout, station power was from 1R reserve transformer to support work activities on the 2R auxiliary transformer. When bus 12 deenergized, power was lost to 12 reactor feed pump and 12 reactor recirculation pump. The subsequent transient resulted in reactor water level increasing to the reactor water level hi hi setpoint (+48"). The main turbine and 11 reactor feed pump tripped as designed, and a reactor scram occurred. Reactor water level began to drop, and C.4.A, "Abnormal Procedure," for scram was used to restart 11 reactor feed pump and recover water level. The minimum reactor vessel water level reached was -26 inches. The reactor low level SCRAM signal and Group 2 primary containment isolation occurred at +9 inches as

designed. No safety relief valves lifted during this transient. High pressure coolant injection (HPCI) and RCIC did not receive an initiation signal due to not reaching their setpoints. The reactor plant was stabilized in Mode 3 while the licensee investigated the cause of the bus 12 lockout. Documents reviewed in this inspection are listed in the Attachment to this report.

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

b. Findings

Introduction

A finding of very low safety significance was self-revealed on September 25, 2012, when a reactor scram occurred during planned testing of the 2R to bus 12 local (switchgear cubicle A201) and remote (control room panel C-08) ammeter switches. As a result of the site's failure to effectively plan the work activity, the performance of the testing resulted in the lockout of bus 12, and loss of 12 reactor feedwater pump and the 12 recirculation pump. During the ensuing plant transient, a main turbine trip, followed shortly by a reactor scram, occurred when reactor water level reached the reactor water level hi hi setpoint (+48").

Description

On September 25, 2011, the licensee was performing testing in accordance with WO 0446500, "TD-Verify 152-201/AS2-7 for Functionality." The purpose of this WO was to test the 2R transformer to bus 12 local (switchgear cubicle A201) and remote (control room panel C-08) ammeter switches as part of an extent of condition for CAP 1314401, "11 Bus Lockout during Station Power Transfer to 2R," an event which occurred on November 23, 2011. As part of the workplan used to conduct the test, Doble test equipment was attached to each of three electrical phases, in addition to a neutral, for the purpose of providing a three-phase AC input to the ammeters to facilitate testing of the ammeter switches. Step 7.5 of the workplan provided guidance to turn on the phase outputs of the Doble test equipment, one phase at a time, to provide 2.5 amps per phase. Since the workplan did not electrically isolate the 151N-201 relay (phase imbalance sensor relay) from the test equipment, as the test equipment's output was sequenced onto each of the three phases, the 151N-201 relay sensed a phase imbalance and provided a trip signal to the 186-2 relay (bus 12 lockout relay), causing the breaker 152-202 (12 bus feeder breaker from 1R) to open. As a result of the bus 12 lockout, 12 reactor feed pump and 12 reactor recirculation pump lost power. The subsequent plant transient resulted in the reactor water level initially lowering, then increasing to +48 inches (reactor water level hi hi setpoint). The main turbine and 11 reactor feed pump tripped as designed, and a reactor scram occurred. The licensee has entered this issue into their corrective action program as CAP 01352773, "Reactor Scram Number 130," and CAP 01352778, "Lockout of 4 KV Bus 12 during WO 446500-1." As part of each of these CAPs, the licensee is performing a root cause evaluation to further evaluate post-scram reactor water level control and the ineffective work planning associated with WO 0446500.

## Analysis

The inspectors determined that the licensee's failure to develop and implement work documents which adequately tested the 2R to Bus 12 ammeter switches was a performance deficiency because it was the result of the failure to meet a requirement or standard; the cause was reasonably within the licensee's ability to foresee and correct; and should have been prevented. The inspectors determined that the most significant causal factor associated with the performance deficiency was associated with the cross-cutting area of Human Performance, having resources components, and involving aspects associated with procedures and work packages are available and adequate to assure nuclear safety [H.2(c)].

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 impacted the procedural quality attribute of the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors applied IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," to this finding. The inspectors evaluated the issue under the Initiating Events Cornerstone, and utilized Exhibit 1, "Initiating Events Screening Questions," to screen the finding. Under Section B, "Transient Initiators," the inspectors answered "No" to the question "Did the Finding cause a reactor trip AND the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition?" and determined the finding to be of very low safety significance (Green).

## Enforcement

The inspectors concluded that no violation of NRC requirements occurred. The licensee entered this finding into their corrective action program (CAPs 01352773; 01352778) and are currently performing a two root cause evaluations to further evaluate the issue. This was considered a finding of very low safety significance.

**(FIN 05000263/2012004-02; Bus 12 Lockout Caused by Inadequate Work Plan)**

## 40A5 Other Activities

### .1 Temporary Instruction (TI) 2515/188 – Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns

The inspectors accompanied the licensee on their seismic walkdowns of:

- Division I 125 Vdc distribution panel [SWEL Item 134];
- high pressure vent inboard isolation valve [SWEL Item 31];
- Division II 250 Vdc battery room ventilation [SWEL Item 491];
- HPCI relay panel [SWEL Item 86]; and
- RHR instrument rack [SWEL Item 55].

and verified that the licensee confirmed that the following seismic features associated with the applicable SWEL items were free of potential adverse seismic conditions:

- Anchorage was free of bent, broken, missing or loose hardware;
- Anchorage was free of corrosion that is more than mild surface oxidation;

- Anchorage was free of visible cracks in the concrete near the anchors;
- Anchorage configuration was consistent with plant documentation;
- SSCs will not be damaged from impact by nearby equipment or structures;
- Overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls are secure and not likely to collapse onto the equipment;
- Attached lines have adequate flexibility to avoid damage;
- The area appears to be free of potentially adverse seismic interactions that could cause flooding or spray in the area;
- The area appears to be free of potentially adverse seismic interactions that could cause a fire in the area; and
- The area appears to be free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding).

The inspectors independently performed their seismic walkdowns of the following SWEL Items and verified that the attributes listed above were inspected by the licensee:

- Division I 125/250 Vdc battery 'A' [SWEL Item 136, located in the SAB, on 928' elevation ; and
- SBLC tank [SWEL Item 449, located on the 962' elevation of the reactor building, East].

Observations made during the walkdown that could not be determined to be acceptable were entered into the licensee's CAP for evaluation.

Additionally, inspectors verified that items that could allow the spent fuel pool to drain down rapidly were added to the SWEL and these items were walked down by the licensee.

No findings were identified.

.2 (Discussed) NRC Temporary Instruction (TI) 2515/187, Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns

a. Inspection Scope

Inspectors accompanied the licensee on a sampling basis, during their flooding walkdowns, to verify that the licensee's walkdown activities were conducted using the methodology endorsed by the NRC. These walkdowns are being performed at all sites in response to a letter from the NRC to licensees, entitled "Request for Information Pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident," dated March 12, 2012 (ADAMS Accession No. ML12053A340).

Enclosure 4 of the letter requested licensees to perform external flooding walkdowns using an NRC-endorsed walkdown methodology (ADAMS Accession No. ML12056A050). Nuclear Energy Institute Document 12-07 titled, "Guidelines for Performing Verification Walkdowns of Plant Protection Features," (ADAMS Accession No. ML12173A215) provided the NRC-endorsed methodology for assessing external flood protection and mitigation capabilities to verify that plant features, credited in the

CLB for protection and mitigation from external flood events, are available, functional, and properly maintained.

b. Findings

Findings or violations associated with the flooding walkdowns, if any, will be documented in the 4<sup>th</sup> Quarter Integrated Inspection Reports.

.3 (Closed) Unresolved Item (URI) 05000263/2012002-05: Radiation Detection Equipment Calibration Protocol for Low Energy Beta Emitters

The inspectors performed follow up reviews for URI 05000263/2012002-05, "Radiation Detection Equipment Calibration Protocol for Low Energy Beta Emitters," where performed. The inspectors reviewed applicable documents related to the calibration of the automatic low background alpha/beta counting systems related to the detection of low energy beta emitting radionuclides including Ni-63. The inspectors determined that the reduced detection efficiency was of minor safety significance. This issue is closed.

4OA6 Management Meetings

.1 Exit Meeting Summary

On October 10, 2012, the inspectors presented the inspection results to Mr. M. Schimmel, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

.2 Interim Exit Meetings

Interim exits were conducted for:

- The inspection results for the areas of Occupational ALARA Planning and Controls; and RCS Specific Activity, Occupational Exposure Control Effectiveness, and RETS/ODCM Radiological Effluent Occurrences PI verification with Mr. M. Schimmel, Site Vice President, on August 17, 2012.

The inspectors confirmed that none of the potential report input discussed was considered proprietary. Proprietary material received during the inspection was returned to the licensee.

4OA7 Licensee-Identified Violations

None.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

M. Schimmel, Site Vice President  
J. Grubb, Plant Manager  
W. Paulhardt, Operations Manager  
N. Haskell, Site Engineering Director  
K. Jepson, Assistant Plant Manager  
S. Radebaugh, Maintenance Manager  
M. Holmes, Chemistry Manager  
A. Zelig, Radiation Protection Manager  
P. Kissinger, Regulatory Affairs Manager  
R. Latham, Radiation Protection Supervisor  
T. Hedges, Radiation Protection Supervisor

#### Nuclear Regulatory Commission

K. Riemer, Chief, Reactor Projects Branch 2

## LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

### Opened

05000263/2012004-01	NCV	Failure to Control the Configuration of Door 45 during Modification (Section 1R13.1)
05000263/2012004-02	FIN	Bus 12 Lockout Caused by Inadequate Work Plan (Section 4OA3.3)

### Closed

05000263/2012004-01	NCV	Failure to Control the Configuration of Door 45 during Modification (Section 1R13.1)
05000263/2012004-02	FIN	Bus 12 Lockout Caused by Inadequate Work Plan (Section 4OA3.3)
05000263/2012002-05	URI	Radiation Detection Equipment Calibration Protocol for Low Energy Beta Emitters (Section 4OA5.2)

### Discussed

2515/187	TI	Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns (Section 4OA5.2)
2515/188	TI	Inspection of Near-Term Task Task Force Recommendation 2.3 Seismic Walkdowns (Section 4OA5.1)

## 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.

### Section 1R01

OWI-01.04; Operations General Procedural Guidance; Revision 22  
ESO 6.400P; System Operating Code Response Procedure; Revision 5.1  
2011-S-037-W-MISO; Standing Operating Guide; Revision 1  
C.4-B.09.02.A; Station Blackout; Revision 40  
E.2; Master Power Restoration Procedure; Revision 4  
E.5; System Electrical Blackout (SEBO); Revision 13  
4 AWI-08.15.03; Risk Management for Outages; Revision 7  
FP-MA-SWD-01; Control of Switchyard Work Activities; Revision 1

### Section 1R04

NH-36247; RHR System—Division 1; Revision 82  
NH-36246; RHR System—Division 2; Revision 81  
Operations Manual B.03.04-05; RHR System—System Operation; Revision 61  
4900-02-PM; Rotork Motor Operated Valves- Inspection and Maintenance; Revision 24  
Operations Manual B.03.04-03; RHR System—Instrumentation and Controls; Revision 17  
Operations Manual B.03.04-01; RHR System—Function and General Description of System;  
Revision 11  
WO 435759; Mech-MO-1989, Perform 4900-02 PM; August 6, 2012  
2154-12; RHR System Prestart Valve Checklist; Revision 45  
Operations Manual B.03.04-02; RHR System—Description of Equipment; Revision 18  
2154-14; Fuel Oil System Prestart Valve Checklist; Revision 16  
2154-22; EDG ESW System Prestart Checklist; Revision 23  
2154-04; Condensate and Feedwater Prestart Valve Checklist; Revision 41

### Section 1R05

Strategy A.3-03-B; Fire Zone 3-B; SBLC Area; Revision 11  
Strategy A.3-08; Fire Zone 8; Cable Spreading Room; Revision 12  
WO 448841; 8146 Scaffold Control Evaluation; July 13, 2012  
Operations Manual B.08.05-01; Fire Protection—Function and General Description of System;  
Revision 10  
Operations Manual B.08.05-05; Fire Protection—System Operation; Revision 55  
Strategy A.3-01-A; No. 12 RHR and Core Spray Pump Room; Revision 3  
Strategy A.3-07-B; 250V Division I Battery Room; Revision 8  
Strategy A.3-15-B; No. 11 DG Room and Day Tank Rooms; Revision 9

### Section 1R06

WO 445800; Inspection of Manholes for Water or Evidence of Water; Revision 4  
EWI-08.19.01; Cable Condition Monitoring Program; Revision 5

EWI-11.01.02; Inaccessible Medium Voltage (2KV to 34.5KV) Cables not Subject to 10 CFR 50.49 EQ Requirements Program; Revision 3  
FP-PE-CBL-01; Cable Condition Monitoring Program; Revision 1  
WO 0378913; Underground Vaults for Water- Inspection; July 2012  
CD 5.33; Cable Monitoring Program Standard; Revision 2  
FP-PE-RLP-01; License Renewal Implementation; Revision 4  
MNGP Site Manhole Map; July 2012  
NF-74413-4; Underground Services Electrical Power; Revision 80  
NF-74413-1; Underground Services Site Plan; Revision 79  
PRA-CALC-04-001; Flood Areas  
PRA-CALC-04-003; Flood Source Identification  
PRA-CALC-04-004; Flood Initiating Event Frequencies  
PRA-CALC-04-005; Equipment Vulnerabilities to Flooding  
PRA-CALC-04-006, Flood Scenarios and Effects  
1243; Circulating Water Pump Flood Trip Test; Revision 5

#### Section 1R11

C.3; Shutdown Procedure; Revision 70  
Attachment to 2300; Reactivity Maneuvering Steps—August 10, 2012; Revision 1  
4 AWI-04.05.07; Procedure Use and Adherence; Revision 27  
Simulator Guide RQ-SS-10E

#### Section 1R12

NUMARC 93-01; Monitoring the Effectiveness of Maintenance at Nuclear Power Plants; Revision 4A  
Maintenance Rule Program System Basis Document—HPCI; Revision 5  
CAP 01313056; HPCI Water Flow Indicators Showing Sporadic Flow Signals  
CAP 01316586; 3<sup>rd</sup> Quarter 2011 Site Drum: HPCI/RCIC/RHR Unavailability  
CAP 01317348; HPCI Vibration Point Entered Alert Range  
CAP 01318037; HPCI Unavailability Exceeds Planned Duration  
CAP 01322392; HPCI Water Flow Indicator Sporadic Flow Signals not Resolved  
CAP 01305222; 0255-06-IA-1 Basis Misleading  
CAP 01303423; 3-B-2 Alarm Coming in Every 40 Minutes  
CAP 01340215; Focused Self Assessment—Maintenance Rule Program; June 29, 2012  
CAP 1268930; 2R Transformer Maintenance Rule Unavailability Time; February 1, 2011  
CAP 1276919; 1N6 Lockout Occurred on 1AR Power Transfer from 10 Bank; March 23, 2011  
CAP 1277618; 1AR Load Tap Changer Supply Transformer Connected to 13.8 kV Ungrounded Delta; March 25, 2011  
CAP 1289462; Breaker 152-503 (13 RHR Pump) Failed to Close; June 5, 2011  
CAP 1309389; 11 Reactor Feed Pump Could Not Be Restarted; October 21, 2011  
CAP 1309399; 13 Bus Failed to Re-energize; October 21, 2011  
CAP 1309402; 2R Transformer Lockout; October 21, 2011  
CAP 1312209; 4Kv Bus 13 Exceeded its Maintenance Rule Unavailability; November 8, 2011  
CAP 1314401; 11 Bus Lockout during Station Power Transfer to 2R; November 23, 2011  
CAP 1316205; 2R Maintenance Rule Unavailability Time; December 1, 2011  
CAP 1317483; 4KVB-09 Would Not Charge in Cubicle; December 13, 2011  
CAP 1328212; 13 RHRSW Pump Failed to Start Quarterly Pump and Valve Test; March 7, 2012  
Monticello Maintenance Rule Program System Basis Document; 4.16kV Station Auxiliary; Revision 9

Monticello Maintenance Rule (a)(1) Action Plan for Bus 13; Revision 1  
Monticello Maintenance Rule (a)(1) Action Plan for the 2R Transformer; Revision 0

### Section 1R13

2300; Reactivity Adjustment—July 11, 2012; Revision 7  
Attachment to the 2300 Procedure for CRD Maneuver; Reactivity Maneuvering Steps;  
July 11, 2012; Revision 0  
Power-flow Map with Input Data and Results; June 29, 2012  
WO 00450897-01; CRD-Demonstrate Alternate CRD Friction Testing Method; Revision 2  
CAP 01343554; Unexpected 2R Transformer Trouble  
CAP 00636147; Loss of 2R Transformer Fan  
CAP 01032795; XFMR Coils Need Cleaning Center Fan had Stopped Running  
CAP 01096494; One of the Cooling Fans for 2R was Found not Running  
CAP 01225680; Investigate Dirty 2R Transformer Cooler  
CAP 01345660; 11 Recirc MG Set Scoop Tube Speed Control Failure  
WO 00463061; Scoop Tube Lock Received for 11 MG Set  
NH-36247; RHR system—Division 1; Revision 82  
NH-36246; RHR System—Division 2; Revision 81  
Type 2 – Operational Decision Making Risk Matrix—What is the Appropriate Plant  
Configuration/mode to Repair the Leak in RHR SDC Piping; Revision 0  
Daily PRA/shutdown Risk Assessments; August 11-August 18, 2012  
WO 46390909; Monticello Impact Statement - Outage—Ops/EPRO – Fill, Vent, and PMT for  
Flange Repairs  
WO 0043947; Replace Hinges, Seals, and Operators for Doors 45/46  
EC 20636; Effect of Scissor Lift in Blocking Railroad Door 45 from Opening for  
HELB Considerations  
EC 18693; Reactor Building Railroad Door Modification  
CAP 1342851; Lift Placement during Door 46 Work Order Work Control Guidelines  
CAP 01343928; Door 45 Blocked  
CAP 01350809; T-44 Check for Accumulated Water not Adequate  
WO 00202752; Clean and Inspect Diesel Fuel Oil Tank  
WO 00465010; OPS-T-44, Sample Tank for Water at Bottom

### Section 1R15

CAP 01348519; 11 EDG Field Flash Data Gathering Anomalies  
ODMI 12-41; Unexpected Alarms Received during No.11 EDG Field Flash  
Operations Manual B.03.01-05; Core Spray Cooling System—System Operation; Revision 33  
Operations Manual B.03.01-02; Core Spray Cooling System—Description of Equipment;  
Revision 9  
Operations Manual B.03.01-01; Core Spray Cooling System—Function and General Description  
of System; Revision 6  
0255-03-IA-1-2; Core Spray Loop B Quarterly Pump and Valve Tests; Revision 052-B  
Operations Manual B.03.01-03; Core Spray Cooling System—Instrumentation and Controls;  
Revision 7  
OPR 01345437-01; Core Spray Discharge Pressure Acceptance Value May be Too Low;  
Revision 0  
CAP 01321141; P-208B Affected by Minimum Tech Spec Frequency  
CAP 01345437; Core Spray Discharge Pressure Acceptance Value May be Too Low  
CAP 01311263; EDG Frequency Variations Impact Loads

OPR 01321141-01; P-208B Affected by Minimum Tech Spec Frequency; Revision 0  
CAP 1342517; Pin Material for Railroad Door Hinges Does not Match Drawing; June 21, 2012  
CAP 1343174; Door 45 Hinge; June 27, 2012  
CAP 1344551; Unclear if New Door-45 Positioner Will Open during HELB; July 9, 2012  
CAP 1345322; Door-45 Operator Design to be Reviewed; July 18, 2012  
CAP 1350676; Door-45 not Meeting Door Open Position Requirements; September 6, 2012  
CAP 1352285; Non Safety Related Grease Requisitioned for Railroad Door Hinges;  
September 20, 2012  
CAP 1352358; Door-45 Center Weather Seal Contracting in Cold Weather; September 24, 2012  
CAP 1352436; Non Safety Related Washers on Door 45 and 46; September 24, 2012  
CAP 1352460; Non Safety Related Poly Foam Used on Door 45 and 46 Seals;  
September 24, 2012  
CSM-2012-004-06; ½ inch Flat and Lock Washers for Door 45/46; September 21, 2012  
DBD-B-04.02; Secondary Containment/Standby Gas Treatment Systems; Revision 3  
EC 17936; Secondary Containment and Standby Gas Treatment Excess Capacity for Cycle 26;  
Revision 0  
EC 18693; Reactor Building Railroad Bay Door Modification; Revision 0

#### Section 1R18

EC 20076; Removal of the 1AR Transformer Essential Bus Auto Transfer  
WO 00460262; Install T-Mod for Bus 15 Degraded Voltage Auto Transfer  
CAP 01334146; CDBI Technical Specification Degraded Voltage Time Value  
NE 36403-2; Standby Diesel Generator ACB 152-502 Control; Revision 76  
NE 36858-4; No. 1AR Reserve Transformer Secondary ACB 152-511 Control; Revision T  
NE 36399-9; Essential Bus Transfer Circuits – Division I; Revision N

#### Section 1R19

WO 00437001; Out of as Found Values during EFT-5 PM; July 16, 2012  
WO 00448839; Mech-ESW-14, PM Valve SW to V-EAC-14B Check Valve; July 16, 2012  
WO 00451760; Mech-ESW-14, PM Valve SW to V-EAC-14B Check Valve; July 16, 2012  
WO 00448801; OPS-FSW-0255-11-III-4; 14 ESW Pump Flow Test; July 16, 2012  
B.08.01.04-05; ESW—System Operation; Revision 23  
NH-36665; MNGP P&ID Service Water System and Make-up Intake Structure; Revision 81  
NH-36041; P&ID Service Water System; Revision 95  
NH-36664; P&ID RHRSW and ESW Systems; Revision 85  
0255-11-III-4; 14 ESW Quarterly Pump and Valve Tests; Revision 57  
4 AWI-09.04.01; IST Program; Revision 36  
4001-11-01; Swing Check Valve Inspection; Revision 9  
WO 460617; Rebuild P-109B to Address Low Pump DP  
0255-05-IA-1-2; 'B' RHRSW Quarterly Pump and Valve Tests  
4214-PM; RHRSW Pump Replacement; Revision 8  
Operations Manual B.08.01.03-01; RHRSW System—Function and General Description of  
System; Revision 10  
Operations Manual B.08.01.03-05; RHRSW System—System Operation; Revision 44  
Operations Manual B.08.01.03-01; RHRSW System—Function and General Description of  
System; Revision 10  
CAP 1347767; 'B' RHRSW Loop Standby Pressure Below Normal Value  
WO 463909-09; Perform Hydro on RHR Piping at Repaired Flange Area; August 15, 2012

3063-05; ASME Section XI Repair/Replacement Plan—RHR Blind Flange; August 13, 2012  
3063-06; ASME Section XI Repair/Replacement Reconciliation Report—RHR Blind Flange;  
August 13, 2012  
Operations Manual B.03.04-05; RHR System—System Operation; Revision 61

### Section 1R20

1371; Drywell Prestart Inspection; Revision 8  
CAP 01348680; V-AC-1 Service Water Cooling Coil Degraded  
CAP 01348670; Water Level Control Challenged during Startup  
CAP 01151784; Unexpected Alarms Received When 11 EDG Field Flashed during  
Performance of 11 EDG Monthly Surveillance  
CAP 01348233; TS 3.6.1.1 Actions not Entered with RHR-82 and RHR-84 Closed  
C.1; Startup Procedure; Temporary Revision 75A  
2300; Reactivity Plan for Reactor Startup on August 18, 2012  
NH-36247; RHR system—Division 1; Revision 82  
NH-36246; RHR System—Division 2; Revision 81  
Type 2 – Operational Decision Making Risk Matrix—What is the Appropriate Plant  
Configuration/mode to Repair the Leak in RHR SDC Piping; Revision 0  
WO 463909-01; Mech- RHR Repair Leak on 4” Blind Flange Stub; August 15, 2012  
EC 20565; Equivalency Evaluation—RHR Flange Bolt Replacement; Revision 0  
CAP 1347769; Elevated DW Cam Readings and Rise in DWFDS Rate of Change  
SPDS Trend Display—DW CAM Readings, DWFDS Leak Rate, DW Temperature,  
DW Pressure Trends; August 9-August 10, 2012  
CAP 01347772; Drywell Unidentified Leakage Greater than 5.0 gpm  
Type 2 ODMI—Rise in Unidentified Drywell Leakage and Cam Reading; June 11, 2012  
Abnormal Procedure C.4-B.04.01.F; Leak Inside Primary Containment; Revision 8  
B.07.01-05; Liquid Radwaste, System Operation; Revision 29  
CAP 01348228; SRM 22 Failed Downscale during OSP-NIS-0047  
CAP 01348222; Low Torque Values Used during RHR-9 Flange Connection Work  
CAP 01348193; MO-2564 Indicates Dual Position when Closed  
CAP 01348160; Minor Fitting Leaks Found during N2 Leak Inspection  
CAP 01347975; Potential for Corrosion on MO-2029 Motor  
C.4-B.03.04.A; Abnormal Procedure - Loss of Normal Shutdown Cooling; Revision 13  
C.3; Shutdown Procedure; Revision 70  
Attachment to 2300; Reactivity Maneuvering Steps—August 10, 2012; Revision 1  
4 AWI-04.05.07; Procedure Use and Adherence; Revision 27  
2159; Predicted Critical for Plant Startup; September 27, 2012  
CAP 01352773; Reactor Scram Number 130  
CAP 01352778; Lockout of 4 KV Bus 12 During WO 446500-1  
CAP 01352854; NOS Escalation – Level 1: Reactor Water Level Control Strategy  
CAP 01352904; Perform Simulator Transient Analysis – Scram 130  
CAP 01314401; 11 Bus Lockout during Station Power Transfer to 2R  
WO 00446500-01; TD-Verify 152-201/AS2-7 for Functionality  
NE-36399-3A; MNGP No. 12 and 13 4.16KV Lockout Relay; Revision J  
2165; Scram Report (for Reactor Scram 130); Revision 29

### Section 1R22

0011-A; Turbine Control Valve Fast Closure Scram Test and Calibration (>30 Percent of Rated);  
Revision 13

Operations Manual B.05.06-05; Plant Protection System—System Operation; Revision 8  
0255-03-IA-1-2; Core Spray Loop B Quarterly Pump and Valve Tests; Revision 52;  
August 20, 2012, and August 21, 2012  
CAP 01348872; Could not Reach Required Flow during 0255-03-IA-1-2  
ISP-RHR-0552-01; Reactor Recirculation Loops DP, LPCI Select Interlock Channel Functional  
Test; Revision 3  
CAP 01349519; Equipment Protection Inconsistent  
CAP 01350679; P-109C, Reference Value Change  
CAP 01350516; No. 13 RSW Pump Action Range Exceeded for Pump DP  
Form 3108; Pump/valve/instrument Record of Corrective Action—  
RHRSW 0255 05-III-3A/453087; Revision 0  
Form 3108; Pump/valve/instrument Record of Corrective Action—  
RHRSW 0255-05-III-3A/453087; Revision 1  
Form 3108; Pump/valve/instrument Record of Corrective Action—  
RHRSW 0255-05-III-3A/453087; Revision 2  
CAP 01351492; CAP Incorrectly Closed without Further Evaluation  
0255-05-III-3A; Comprehensive 13 RHRSW Pump and Valve Tests; Revision 21  
4 AWI-09.04.01; IST Program; Revision 41  
CAP 01352027; No. 13 RSW Operability Declaration Log Entry Premature

#### 1EP6

EP Drill/exercise Controller Manual; August 22, 2012  
3695; EP Performance Record—8/22/2012 EP Drill; Revision 0  
CAP 01349207; EP Drill – GE not Classified in a Timely Manner  
CAP 01349208; EP Drill - TSC Comm. Need Training with ERDS, PANS Equipment  
CAP 01349142; EP Drill – AOP Implementing Challenge  
CAP 01349149; EP-NPH's Asked to Perform Task They are not Qualified For  
CAP 01349155; E Plan Drill – TSC Announcement of “Activated” not Made  
CAP 01349166; Verbal Communication in the EOF Inadequate  
CAP 01349173; EP – EOF Followup Messages not Timely  
CAP 01349182; EP Drill - Courier Sent to Higher DR Area to Get Sample  
CAP 01349188; EP Drill - Key ERO Staff Gap in Some Mitigating Procedures  
CAP 01349199; “EP-DRILL” Initial Evac of Rx Bldg did not Give Reason  
CAP 01349223; EP Drill - No Mitigating Procedure for Battery Room Flooding  
CAP 01349268; EP – No Site Boundary Data Points for Field Teams  
CAP 01349315; EP Drill - Met Stability Class Scenario/ERIS Data Discrepancy  
CAP 01349330; EP Drill – Communication Issues during Drill  
CAP 01349340; EP Drill – Dose Projection Issues Discovered during Drill  
CAP 01349407; EP Drill – Improvement Opportunity for Drill Critiques  
CAP 01349463; EP Drill – 8/22/2012 Unexpected SAE Classification  
CAP 01350458; EP Drill - Evaluation Request on Early Scram

#### Section 2RS2

NOS Observation Report No. 2012-01-008; Radiation Protection; Performed January 5 through  
January 12, 2012  
NOS Observation Report No. 2011-02-007; Radiation Protection including Radioactive Waste  
Control; Performed April 11 through May 27, 2011  
4 AWI-08.04.01; Radiation Protection Plan; Revision 31  
4 AWI-08.04.08; ALARA Plan; Revision 13

4 AWI-04.05.11; Temporary Shielding; Revision 8  
EWI-08.04.04; Source Term Reduction Program; Revision 13  
FP-RP-SAC-01; Station ALARA Committee; Revision 1  
Temporary Shielding Request TSR-11-014; Approved October 4, 2011  
Declared Pregnant Worker Records January 2011 through July 2012  
AR 01288071; Work Execution Center Operator Issued a Locked High Radiation Area Key from the WEC Key Cabinet; Dated July 1, 2011  
AR 1283116; Operator Gained Access to the Refuel Floor Following an Evacuation of the Area; May 27, 2011  
4OA1 Performance Indicators  
Electronic Dosimetry Dose and Dose Rate Alarms Records; January 2011 through August 15, 2012  
Internal Dose Assessments; January 2011 through August 15, 2012  
Condition Report Reviews; January 2011 through August 15, 2012  
Reactor Coolant System Dose Equivalent Iodine Records; August 2011 through August 15, 2012  
AR 01348276; Procedure Not Accurately Followed To Collect Iodine Sample; August 15, 2012  
I.03.13; Reactor Water and Cleanup Systems Iodine; Revision 13

#### Section 4OA1

PRA-CALC-05-003; MSPI Basis Document; Revision 2  
NEI 99-02; Regulatory Assessment PI Guideline; Revision 6  
Monticello Station Log Entries Regarding HPIC, RCIC, or EDGs; July 1, 2011 through June 30, 2012  
Maintenance Rule Database Entries Regarding HPCI, RCIC, or EGS; July 1, 2011 through June 30, 2012  
MSPI Deviation Report; MSPI Emergency AC Power System; July 2011-June 2012  
MSPI Deviation Report; MSPI High Pressure Injection System; July 2011-June 2012  
MSPI Deviation Report; MSPI Heat Removal System; July 2011-June 2012  
CAP 01313056; HPCI Water Flow Indicators Showing Sporadic Flow Signals  
CAP 01316586; 3<sup>rd</sup> Quarter 2011 Site Drum: HPCI/RCIC/RHR Unavailability  
CAP 01317348; HPCI Vibration Point Entered Alert Range  
CAP 01318037; HPCI Unavailability Exceeds Planned Duration  
CAP 01322392; HPCI Water Flow Indicator Sporadic Flow Signals not Resolved  
CAP 01305222; 0255-06-IA-1 Basis Misleading  
CAP 01303423; 3-B-2 Alarm Coming in Every 40 Minutes  
CAP 01313130; OE: FAQ, Cascaded (MSPI) Unavailability  
CAP 01333369; MSPI EDG Run Hours in CDE Need to be Updated  
CAP 01323957; AAC MSPI Margin Reduced from 5 to 3 Failures in 6 Months  
CAP 01307702; ESW-73-1, 11 EDG Dispersant Inj Ckv Failed IST Leak Test  
CAP 01305341; No. 12 EDG Air Relay Valve Filter Blowdown Valve Broken  
CAP 01309393; Raw Water Alarm was Received on No. 11 EDG during Rx Scram  
CAP 01321812; 12 EDG Window Planning Issues  
CAP 01279703; AO-13-22; RCIC Injection Testable Check Valve Indicates Open  
CAP 01314085; Complex Work Window Challenged Unavailability Time for RCIC  
CAP 01312780; PT-13-65 RCIC Pump Suction Pressure Out of As Found  
CAP 01345756; RCIC Availability Hours Double Counted  
CAP 01317776; RCIC Steam Trap Inlet (RCIC-3) Leaking Steam  
CAP 01324898; RCIC HO-8 Valve Showed Closed during RCIC Operation

CAP 01328345; V-AC-6, RCIC Cooling Unit Leaking

Section 4OA2

CAP 01352061; Question from Sr. Resident on Scaffold Building Fall Protection  
CAP 01353447; NRC Question – Door 46 Grease Classification for Open Function  
Reactor Building Operator Turnover Checklists  
Turbine Building Operator Turnover Checklists  
Operator Logs  
FP-OP-OB-01; Operator Burden Program; Revision 3

Section 4OA3

Operations Manual B.09.07-05; 480V Station Auxiliary—System Operation; Section H.3, Loss of Linn Street 12.5KV Distribution System; Revision 34  
CAP 01345074; V-EAC-18 PEB Air Handling Unit not Cooling TSC  
CAP 01345075; P-155 Failed to Auto Swap Back to Linn Street Line  
CAP 01345066; Loss of Power Resulting in Multiple Issues  
CAP 01345058; Loss of Power from Linn Street Substation  
CAP 01347772; Drywell Unidentified Leakage Greater Than 5.0 GPM  
B.07.01-05; Liquid Radwaste, System Operation; Revision 29  
C.4-B.04.01.F; Leak Inside Primary Containment; Revision 8  
CAP 1347769; Elevated DW Cam Readings and Rise in DWFDS Rate of Change  
SPDS Trend Display—DW CAM Readings, DWFDS Leak Rate, DW Temperature, DW Pressure Trends; August 9-August 10, 2012  
Type 2 ODMI—Rise in Unidentified Drywell Leakage and Cam Reading; June 11, 2012  
NH-36247; RHR System—Division 1; Revision 82  
NH-36246; RHR System—Division 2; Revision 81

Section 4OA5

Initial and Completed Walkdown and Walk-by Packages for SWEL Item 31; AO-4539, Hard Pipe Vent Inboard Isolation Valve  
Initial and Completed Walkdown and Walk-by Packages for SWEL Item 55; C-129B, RHR Instrument Rack  
Initial and Completed Walkdown and Walk-by Packages for SWEL Item 86; C-39, HPCI Relay Panel  
Initial and Completed Walkdown and Walk-by Packages for SWEL Item 134; D31, Division I 125/250 VDC Distribution Panel  
Initial and Completed Walkdown and Walk-by Packages for SWEL Item 136; D3A, No. 13 (DIV I) 125/250 VDC Battery “A”  
Initial and Completed Walkdown and Walk-by Packages for SWEL Item 449; T-200, Standby Liquid Control Tank  
Initial and Completed Walkdown and Walk-by Packages for SWEL Item 491; V-EF-40B, Division II 250 VDC Battery Room Ventilation  
EPRI; Seismic Walkdown Guidance for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic; June 2012  
CAP 01345963; Cable Tray Possibly in Contact with Cabinet C-27  
CAP 01346170; Flexible Lighting Conduit Ty-wrapped to Vertical Tray Support  
CAP 01346922; Victaulic Coupling on 6” Roof Drain with Questionable Bracing  
CAP 01346943; Extra Ground Wire Found in No. 13 Battery Room

CAP 01347243; Drawing Discrepancies for the SBLC Tank Anchorage  
CAP 01347002; Scaffolding in the SBLC Area with Questionable Bracing  
CAP 01346939; Use of Electrical Tape for AO-4539 Cable  
WO 00415147; T-200, Repair Tank  
Monticello Seismic Walkdown Equipment List; Revision 1  
Monticello IPEEE Report; Revision 1  
CA 97-114; Resolution of SQUG Outliers; Revision 5  
Letter; Ni-63 Detection Capability of the Tennelec 5XLB; Dated March 26, 2012  
Letter; Safety Significance Summary of Monticello Ni-63 Detection Capability;  
Dated July 11, 2012  
Letter; Ni-63 Source Detection Efficiency of the Tennelec 5XLBs at Monticello;  
Dated August 31, 2012

## LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Document Access Management System
ALARA	As Low As Is Reasonably Achievable
ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CRD	Control Rod Drive
DP	Differential Pressure
DRP	Division of Reactor Projects
EDG	Emergency Diesel Generator
EFT	Emergency Filtration Train
EOF	Emergency Operations Facility
EPRI	Electric Power Research Institute
ESW	Emergency Service Water
gpm	Gallons Per Minute
HELB	High Energy Line Break
HPCI	High Pressure Coolant Injection
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IPEEE	Individual Plant Examination of External Events
IR	Inspection Report
ISFSI	Independent Spent Fuel Storage Facility Installation
IST	Inservice Test
kV	Kilovolt
LPCI	Low Pressure Coolant Injection
MSPI	Mitigating Systems Performance Index
MTC	Monticello Training Center
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
NUMARC	Nuclear Management and Resources Council
ODCM	Offsite Dose Calculation Manual
OWA	Operator Workaround
PARS	Publicly Available Records System
PEB	Plant Engineering Building
PI	Performance Indicator
PM	Planned or Preventative Maintenance
RCIC	Reactor Core Isolation Cooling
RCS	Reactor Coolant System
RETS	Radiological Effluent Technical Specification
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
SAB	Site Admin Building
SBLC	Standby Liquid Control
SDP	Significance Determination Process
SRA	Senior Reactor Analyst
SSC	Structure, System and Component
SW	Service Water

TS	Technical Specification
TSC	Technical Support Center
TSO	Transmission System Operator
USAR	Updated Safety Analysis Report
V	Volts
Vdc	Volts Direct Current
WO	Work Order

M. Schimmel

-2-

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Sincerely,

/RA/

Kenneth Riemer, Branch Chief  
Branch 2  
Division of Reactor Projects

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Letter to M. Schimmel from K. Riemer dated November 5, 2012

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT;  
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